If you have any questions or concerns, please call the university administration office. Tel: (510) 592-9688; Fax: (510) 657-8975; e-mail: npadm@npu.edu.

The university Website address is http://www.npu.edu.

For Admissions Office: e-mail admission@npu.edu; Tel (510) 592-9688 ext. 1

Frequently asked questions:

- **Is NPU accredited and recognized nation-wide?**
  See Accreditation on page 1.

- **How can I apply to NPU?**

- **How can I get an application form? What should I submit for application?**
  You may apply online from the NPU website at https://secure.npu.edu/apply/ or download the application form from http://www.npu.edu/Admissions.html.

  The required application materials are listed on the application forms; you may also find the information on the pages listed above or on NPU’s website.

- **How can I see an admission officer or an academic counselor?**
  Admission officers and academic counselors are available on campus to assist the applicants and the students during office hours as posted on the NPU Website at http://www.npu.edu/contact.html.
  Also see Academic Counseling on page 9.

- **What courses do I need to complete for my major?**
  See Curriculum under various degree programs:
  - School of Engineering: pages 35-41, 53-57, 69-71
  - School of Business and Information Technology: pages 86-87, 97-99, 111-112

- **I want to know the costs for taking courses or pursuing a degree.**
  See the tuition and fees information on pages 3, 4, 34, 52, 67, 84, 96, 110

- **How do I register for classes?**
  See Registration and related information on page 9.

- **How do I gain access to computers, e-mail, and the Internet?**
  See Facilities and Learning Resources on pages 27-30.

- **Where can I find the directions to NPU?**
  See page 128 or on our web site at http://www.npu.edu/contact.html.
2013 Academic Calendar

<table>
<thead>
<tr>
<th>January</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 New Year Holiday; campus closed</td>
</tr>
<tr>
<td>2-12 Administration office observes semester break office hours</td>
</tr>
<tr>
<td>7 Spring semester application deadline for local students</td>
</tr>
<tr>
<td>10 New students report to campus.</td>
</tr>
<tr>
<td>12 New student orientation program. (9:30 AM)</td>
</tr>
<tr>
<td>14 Semester and classes begin.</td>
</tr>
<tr>
<td>- Registration continues for new students.</td>
</tr>
<tr>
<td>- Late registration for current students.</td>
</tr>
<tr>
<td>- Add/Drop</td>
</tr>
<tr>
<td>19 Last day to add/drop without records</td>
</tr>
<tr>
<td>28-31 Classroom observation - by peer faculty/administrators</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>February</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Classroom observation - by peer faculty/administrators</td>
</tr>
<tr>
<td>25-28 Mid-term exams</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>March</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Mid-term exams</td>
</tr>
<tr>
<td>4 - Deadline for graduation petition for summer semester (without late fee)</td>
</tr>
<tr>
<td>- Deadline for changing program or requesting to use new curriculum (without late fee)</td>
</tr>
<tr>
<td>9 Check point – student counseling</td>
</tr>
<tr>
<td>20 Summer class schedule and registration packages ready</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>April</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - Begin registration for the summer semester*.</td>
</tr>
<tr>
<td>- Faculty evaluation - by students.</td>
</tr>
<tr>
<td>- Summer semester application deadline for international students</td>
</tr>
<tr>
<td>6 Summer registration ends (for current students).</td>
</tr>
<tr>
<td>8 Late registration begins (current students).</td>
</tr>
<tr>
<td>22-27 Course review and final exams</td>
</tr>
<tr>
<td>29-30 Administration office observes semester break office hours.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>May</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-11 Administration office observes semester break office hours.</td>
</tr>
<tr>
<td>4 - Faculty in-service training workshop</td>
</tr>
<tr>
<td>- Graduation ceremonies (for students graduating from 2012 fall to 2013 summer semesters)</td>
</tr>
<tr>
<td>6 - Posting final grades for spring semester.</td>
</tr>
<tr>
<td>- Check point – student counseling</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Spring Semester (1/14 – 4/27)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Summer Semester (5/13 – 8/24)</th>
</tr>
</thead>
<tbody>
<tr>
<td>May</td>
</tr>
<tr>
<td>6 Summer semester application deadline for local students.</td>
</tr>
<tr>
<td>9 New students report to campus.</td>
</tr>
<tr>
<td>11 New student orientation program (9:30 AM)</td>
</tr>
<tr>
<td>13 Semester and classes begin.</td>
</tr>
<tr>
<td>- Registration continues for new students.</td>
</tr>
<tr>
<td>- Late registration for current students.</td>
</tr>
<tr>
<td>- Add/Drop</td>
</tr>
<tr>
<td>18 Last day to add/drop without records</td>
</tr>
<tr>
<td>27-31 Classroom observation - by peer faculty/administrators</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>June</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Classroom observation - by peer faculty/administrators</td>
</tr>
<tr>
<td>24-29 Mid-term exams</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>July</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - Deadline for graduation petition for fall semester (without late fee)</td>
</tr>
<tr>
<td>- Deadline for changing program or requesting to use new curriculum (without late fee)</td>
</tr>
<tr>
<td>4 Independence Day holiday; campus closed.</td>
</tr>
<tr>
<td>8 Check point – student counseling</td>
</tr>
<tr>
<td>17 Fall class schedule and registration packages ready</td>
</tr>
<tr>
<td>29 - Begin registration for the fall semester*.</td>
</tr>
<tr>
<td>- Faculty evaluation - by students.</td>
</tr>
<tr>
<td>- Fall semester application deadline for international students</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>August</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Fall registration ends (for current students).</td>
</tr>
<tr>
<td>5 Late registration begins (current students).</td>
</tr>
<tr>
<td>19-24 Course review and final exams</td>
</tr>
<tr>
<td>26-31 Administration office observes semester break office hours.</td>
</tr>
<tr>
<td>31 - Faculty in-service training workshop</td>
</tr>
<tr>
<td>- Fall semester application deadline for local students</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>September</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Labor Day holiday; campus closed.</td>
</tr>
<tr>
<td>3-7 Administration office observes semester break office hours.</td>
</tr>
<tr>
<td>3 - Posting final grades for summer semester.</td>
</tr>
<tr>
<td>- Check point – student counseling</td>
</tr>
</tbody>
</table>

* Online registration normally starts several days earlier than the on-site registration. Please check the registration instructions published each semester for detailed information.
2013 Academic Calendar

<table>
<thead>
<tr>
<th>Fall Semester (9/9 – 12/21)</th>
</tr>
</thead>
</table>

**September**

5 New students report to campus.
7 New student orientation program (9:30 AM)
9 Semester and classes begin.
   - Registration continues for new students.
   - Late registration for current students.
   - Add/Drop
14 Last day to add/drop without records
23-28 Classroom observation - by peer faculty/administrators

**October**

21-26 Mid-term exams
28 - Deadline for graduation petition for next spring semester (without late fee)
   - Deadline for changing program or requesting to use new curriculum (without late fee)

**November**

4 Check point – student counseling
13 2014 spring class schedule and registration packages ready
25 - Begin registration for the 2014 spring semester*.
   - Faculty evaluation - by students
28 Thanksgiving holiday; campus closed
30 Spring registration ends (for current students).

**December**

2 - Late registration for 2014 spring semester begins (current students).
   - 2014 Spring semester application deadline for international students
16-21 Course review and final exams.
23-31 Christmas holiday; campus closed.

**January 2014**

1 New Year holiday; campus closed.
2 - Posting final grades for 2013 fall semester.
   - Check point – student counseling
   - Faculty in-service training workshop

---

*Online registration normally starts several days earlier than the on-site registration. Please check the registration instructions published each semester for detailed information.

---

A Message from the President

To all prospective students:

Today, we all face the continuous demands and challenges of a fast-paced and complex society that shoulders us with an ever-increasing level of family, social, and economic responsibilities. Northwestern Polytechnic University (NPU) is an educational institution established with the specific intent to provide the learning opportunities and the training grounds for high-technology as well as global business development needed to help each individual meet the impending challenges.

The location of NPU in the heart of Silicon Valley along with the efforts and accomplishments of NPU’s faculty and administrators combine to provide a unique environment for students to learn and to gain practical experience. NPU’s ties with universities and companies around the world help to promote the international understanding and cooperation that give our graduates a wider view of their roles as individuals and as members of society.

Our university dedicates itself to the continual improvement of academic curricula and programs that combine existing knowledge and new developments arising from today’s ever-changing world. In doing so, NPU’s programs encourage both analytical and creative thinking. Even though the specific goals and objectives of each student are different, it is the dedication to learning that matters. If you are devoted to the pursuit of education and self-enrichment, we welcome you to accept the challenge and further your career and intellectual growth by attending NPU.

Dr. George T. C. Hsieh
President
## 2013 Catalog
(Effective 2013 Spring Semester)

### CONTENTS

<table>
<thead>
<tr>
<th>Academic Calendar</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Message from the President</td>
<td>1</td>
</tr>
</tbody>
</table>

- **Introduction**
  - Mission
  - Faculty
  - Accreditation
  - Corporate Status
  - Community Involvement
  Page 1

- **Admission Policies**
  - Application Requirements- Bachelor's and Master’s Degree Programs
  - Official Transcripts
  - Notification of Admission
  - Cancellation of Admission and Readmission
  - Returning Students
  - International Students
  - NPU Institution Codes for Standardized and International Tests
  - American Language Classes (ESL Classes)
  Page 2

- **Enrollment Agreement**
  Page 3

- **Tuition**
  Page 3

- **Fees**
  Page 4

- **Refund Policy**
  Page 4

- **Minimum Terms for Tuition Payments**
  Page 6

- **Debts Owed to the University**
  Page 6

- **State of California Tuition Recovery Fund**
  Page 6

- **Scholarships**
  - VA Educational Assistance
  - Student On-Campus Work-study Opportunities
  - Practicum and Industrial Cooperative Projects
  Page 7

- **Academic Information**
  - Study Plan
  - Academic Advising and Counseling
  - Class Schedule
  - Registration
  - Full-time Students
  - Part-time Students
  - Non-degree Students
  - Pre-degree Status
  - Adding and Dropping Courses
  - Grading Policy and Academic Standards
    - Grades
    - Passing Grades
    - Grade Point Average
    - Incomplete
    - Auditing Courses
    - Repetition of Courses
  Page 8

| Page |
• Form of Instruction 13
• Attendance 13
• Taking Online Courses 13
• Standards of Satisfactory Progress 15
• Examinations 17
  ➢ Course Examinations 17
  ➢ Challenge Examination 17
  ➢ Proficiency Examination 18
  ➢ Entrance Assessment Examinations 18
• Graduation 18
  ➢ Bulletin Requirements 18
  ➢ Petition to Graduate 18
  ➢ Completion of A Program 19
• Withdrawal from the University 19
  ➢ Re-entry to NPU 19
  ➢ International Students Transferring Out 20

❖ Educational Records 20
  • Student Privacy 20

❖ Student Discipline 21
  • Inappropriate Conduct 21
  • Appeal of Dismissal 21
  • Student Grievance Procedures 22

❖ Policy on Sexual Harassment 22

❖ Student Life 24
  • University Orientation 24
  • Housing Assistance 24
  • Transportation Service 25
  • Nonacademic Counseling 25
  • Cultural Immersion Workshops 25
  • Professional Development Seminars 25
  • Intercollegiate Activities 25
  • Career Placement Services 25
  • Student Handbook 26
  • The Student Association 26
  • Affiliation to Professional Societies 26
  • NPU Student Branch of IEEE 26
  • Student Clubs 26
  • Alumni Association 27
  • International Student Health Insurance 27

❖ Donations to the University 27

❖ Facilities 27
  • Campus Description 27
  • Teaching and Research Facilities 28
    ➢ Learning Resources and Laboratories 29
    ➢ The University Library and Digital Campus 29
academic programs

school of engineering

- objectives
- undergraduate programs
  - credential requirements
  - application requirements
  - english proficiency requirement
  - entrance assessment examination
  - general background requirements for pursuing bachelor’s degrees
  - transfer of credit from other institutions
  - tuition
  - graduation requirements
  - lower-division courses study flow
  - bachelor of science in electrical engineering (bsee)
  - bachelor of science in computer systems engineering (bscse)
  - bachelor of science in computer science (bcs)
  - course descriptions- undergraduate degree programs, school of engineering
- master’s degree programs
  - objective
  - committee oversight
  - credential requirements
  - application requirements
  - english proficiency requirement
  - general background requirements for pursuing master’s degrees
  - transfer of credit from other institutions
  - tuition
  - graduation requirements
  - master of science in electrical engineering (mse)
  - master of science in computer systems engineering (mscse)
  - master of science in computer science (mscs)
  - course descriptions- master’s degree programs, school of engineering
- doctorate degree program
  - objectives
  - doctoral program committee
  - applicant qualifications
  - application material
  - transfer of credit
  - tuition
  - graduation requirements
  - doctor of computer engineering
  - course descriptions- doctor of computer engineering program, school of engineering

school of business and information technology

- objectives
- undergraduate program
  - credential requirements
  - application requirements
  - english proficiency requirement
  - entrance assessment examination
  - general background requirements for pursuing the bachelor’s degree

iii
Introduction

The Northwestern Polytechnic University (NPU) catalog is an annual publication containing information on academic requirements, learning facilities, tuition and fees, and disciplinary issues concerning all applicants and students at NPU. This catalog is effective from the 2013 spring semester through the fall semester. Student handbooks, for local and for international students, are published separately every semester and posted on the NPU Online Service Center for all students to read. New students are introduced to this website on the New Student Orientation Day. The handbooks provide additional information to help the students adjust to the school environment quickly and learn how to use the administrative services provided to them.

The majority of the information contained in this catalog and other pertinent information is also available on the university website at www.npu.edu.

Mission

Northwestern Polytechnic University’s mission is to provide advanced education and a high technology learning environment that motivates students to pursue intellectual growth and promotes professional career development, and to prepare them to become high technology and global leaders. NPU’s objectives are:

- To have qualified faculty with active high technology careers and experience to educate students in a stimulating learning environment and to allow graduates to hit the ground running.
- To prepare individuals to acquire the modern knowledge and necessary skills to meet the challenges of fast-moving local and global companies in a variety of industries.
- To cultivate a high level of integrity and professional ethics in our graduates.

NPU seeks to prepare its students to begin and enhance their professional careers in computers, engineering, and business, through study in both undergraduate and graduate curricula.

Faculty

The University faculty maintains a tradition of personal attention to students and devotion to teaching and research. Many members of the faculty have been cited for excellence in teaching. Some of them are leaders in their disciplines and professional organizations. Members of the faculty have had the experience of working in high-tech fields and various business professions; some also acted as consultants to educational institutions, industry, businesses, government, and foundations.

Accreditation

Northwestern Polytechnic University is an academic institution accredited by the Accrediting Council for Independent Colleges and Schools (ACICS) to award bachelor’s degrees, master’s degrees, and doctorate degrees. ACICS is listed as a nationally recognized accrediting agency by the United States Department of Education and is recognized by the Council for Higher Education Accreditation. ACICS may be contacted at 750 First Street, NE, Suite 980, Washington, DC 20002-4241, Tel: (202) 336-6780.

The current scope of accreditation for ACICS, as approved by the U.S. Department of Education and the Council for Higher Education Accreditation, includes diploma programs and degree programs through the master’s degree. Accreditation of a doctoral program by ACICS does not make the program eligible for purposes of participation in federal student aid programs, as described in Title IV of the HEA. Contact the NPU administration office for further information.

NPU has also been granted approval by the state of California since 1984 as a California degree granting institution.

Corporate Status

Northwestern Polytechnic University is organized under California Corporate Law as a nonprofit, public-benefit corporation and is deemed tax-exempt, as applies to corporations falling within the IRS 501(c)(3) ruling.

NORTHWESTERN POLYTECHNIC UNIVERSITY ADMINISTRERS ALL ITS
PROGRAMS WITHOUT REGARD TO RACE, ETHNIC ORIGIN, AGE, OR SEX. NPU CONFRONTS AND REJECTS ALL MANIFESTATIONS OF DISCRIMINATION IN ITS EDUCATIONAL POLICIES, ADMISSION POLICIES, SCHOLARSHIPS, OR OTHER SCHOOL ADMINISTERED PROGRAMS.

■ Governing Board

NPU is governed by its Board of Trustees. Board members consist of NPU faculty members, well-known scholars and educators, and community leaders. They provide voluntary service and receive no remuneration as NPU is a nonprofit, public-benefit educational institution.

■ Community Involvement

The University is first and foremost an institution of learning and teaching, committed to serving the needs of society and involved in the academic and civic communities of which it is a part. The NPU administrators participate in local job fairs and work with local businesses to provide job opportunities for our students. The University also provides space for meetings of various local organizations.

Admission Policies

- NPU admits all qualified individuals into the university without regard to race, religion, sex, ethnic origin, or physical handicap.
- NPU makes education available to all individuals who meet the qualifications for entrance into NPU.

Trimester: The school’s annual calendar and course offering are based on a trimester system of three 15-week semesters starting in January, May, and September of the year. An applicant may apply for entrance in any of the three trimesters each year.

The application deadline for each trimester is given in the Academic Calendar.

Late Application: A late application fee will be charged for applications received after the deadline each trimester. Overseas applicants should apply earlier to allow sufficient time for processes related to visa application and international travel.

Application Requirements: Refer to the description on application requirements in the section for the school and level of program of your choice.

■ Official Transcripts

Official transcripts are required for admission into a degree program. All official transcripts must be received before the admission evaluation. Late submissions are permitted only with the approval of the Admissions Committee. Students enrolled in courses at another institution at the time of application will have 60 days after the completion of the courses to provide NPU with the updated transcripts. Failure to submit official transcripts on time may result in placement of the applicant in a non-degree status.

Admission Evaluation: The NPU Admissions Committee provides individualized admission evaluation service and follows the approved credit transfer policy to transfer credit for each applicant. A copy of the evaluation report will be provided to the accepted applicant.

■ Notification of Admission

Normally, prospective students may expect to receive notification of admission status in three to four weeks after filing complete application materials with the NPU Admissions Office. An applicant may be admitted with full or conditional admission status. An applicant denied for admission will receive a letter with the explanation.
Cancellation of Admission and Readmission

If an applicant is accepted into a degree program for a given semester and does not begin classes in that semester, admission will automatically be canceled. The prospective student's application records (transcripts from previous colleges and American language proficiency records) are kept on file for a period of six months from the semester start date. If the applicant then wishes to be considered for readmission in a later semester, he/she will be required to resubmit (1) an application form and pay (2) the application fee. A reevaluation of admission will be made for the applicant. If reapplication is made more than six months from the initial admission term, the applicant may be required to submit an entire new set of the application materials.

Returning Students

When a former NPU student returns to continue his/her study in an unfinished program after making a longer-than-one-semester absence, the returning student must submit a new application form (online or hardcopy) and pay the application fee. The student will receive a new evaluation and study plan based on the graduation requirements specified in the current catalog.

International Students

NPU is authorized under federal law to enroll non-immigrant international students.

Veteran Students: Currently the CSAAVE is the state agency responsible for approving veteran education programs.

NPU Institution Codes for Standardized and International Tests

<table>
<thead>
<tr>
<th>Test</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAT</td>
<td>4335</td>
</tr>
<tr>
<td>GRE</td>
<td>5485</td>
</tr>
<tr>
<td>TOEFL</td>
<td>9626</td>
</tr>
<tr>
<td>CLEP</td>
<td>7569</td>
</tr>
<tr>
<td>DANTES</td>
<td>9670</td>
</tr>
</tbody>
</table>

American Language Classes (ESL classes)

Students conditionally accepted due to English deficiency are required to enroll in ESL classes (American language classes) based on their English assessment records.

The ESL classes are offered with the same trimester schedule as that for the degree courses. Students placed in the highest levels of ESL classes may be allowed to concurrently take a limited number of degree classes at NPU, provided that this optimizes their learning objectives. Students passing the highest level of ESL classes are considered meeting the English entrance requirement for degree programs.

New Student Orientation: All new students are required to attend the New Student Orientation program conducted at NPU before each semester starts. The schedule is shown in the Academic Calendar

Enrollment Agreement

Upon joining NPU, a student is presented an Enrollment Agreement form which indicates the student’s program, length of study, estimated costs, refund policy, and other information. The student should read the information on the form. Both the student and the admissions staff will sign the form; the student and the school each keep a copy of the form.

Tuition

For tuition information on the program of your interest, please refer to the proper section describing the level of the program and its disciplinary area.

Special tuition rates: Special tuition rates may apply to the following groups of students:

- NPU faculty or family members taking courses for credit. The policy is posted on the faculty Online Service Center website.
- NPU staff members approved to take courses for credit or staff family members taking courses at NPU.
- Exchange students: Tuition rate is based on terms of the agreement document.
- Faculty, administrators, or students recommended by sister schools to take
courses at NPU for credit: Tuition rate is based on terms of the agreement document.
- Unemployed workers approved by the EDD to take courses or pursue a degree at NPU may be offered tuition discount based on the terms of the agreement document.

Fees

I. Admission Fees

| Application for admission | $60 |
| Late fee                  | $50 |

II. Service Fee Schedule

(Incurred upon registration or request of services only)

Notice: Please observe deadlines to avoid late fee charges. All late fees are $50 except if specified.

| Registration fee (per semester) | $ 50 |
| Learning resource fee (per semester) | $100 |
| Extracurricular activities service fee (per semester) | $ 30 |
| Add/Drop request processing fee | $ 10 (1st) $ 20 (2nd) |
| Late registration fees (continuing Students only):
  - Up to end-of-semester | $ 50 |
  - During semester break | $ 75 |
  - After start of new semester | $100 |
| Payment Plan service fee
  - 2-payment plan | $ 25 |
  - 3-payment plan | $ 50 |
| Change major/new study program | $ 50 |
| Use new curriculum (new study plan) | $ 50 |
| Each placement test (EPE or SAT-I/GMAT/GRE equivalency test) | $ 50 |
| Undergraduate student challenge exam fee (in addition to the course tuition) | $100 |
| Proficiency exam fee (per subject)
  - no credit earned | $150 |
| Qualifying Exam fee (DCE program) | $100 per exam |
| Dissertation fees (DCE program):
  Proposal Presentation | $300 |
  Oral Defense | $500 |

Dissertation fees (DBA program):
  Preliminary Proposal Presentation | $300 |
  Methodology Presentation | $300 |
  Oral Defense | $500 |
| Petition for graduation fee | $300 |
| Each re-petition for graduation | $ 50 |
| Transcript Fees
  - First 2 copies |
  - Additional copies | $ 10 |
| Replacement of lost student ID card | $ 10 |
| Returned/bad check fee | $ 20 |
| Express service fee | $ 20 |
| Int’l student transfer-out service fee (not for NPU alumni) | $300 |
| OPT Extension Service fee | $ 20 |
| International student health insurance fee | $ 300 |
| International student special request service fees | $ 300/sem (estimated) Specified on request forms |

- Textbook is estimated at $80-$150 per book.
- All international students are required to purchase a health insurance plan. The annual cost is estimated at $950.

NOTICE: For any student who does not fulfill his/her financial obligation to the school on time, a penalty of $20/month will be debited to the student’s financial account until his/her obligation is fulfilled. In addition, the late fee and automatic withdrawal rule will also apply.

Refund Policy

■ Refunds Due to Regular Add/Drop of courses

For students remaining enrolled in at least one course in a semester, refunds are processed at the end of the add/drop and withdrawal period each semester. The students will receive email notices for receiving refund checks within three weeks from the add/drop or withdrawal deadline. The following policy applies to these students:

1. For courses dropped before the end of the second week of instruction, the school will refund to the appropriate party any tuition
received by the school from or on behalf of the student for the current semester.

2. For courses dropped after the second week of instruction but within the first 75% of the current semester, the school will refund to the appropriate party a prorated portion of the tuition received by the school from or on behalf of the student for the current semester as follows:

<table>
<thead>
<tr>
<th>Before the end of week</th>
<th>% Refund</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>80%</td>
</tr>
<tr>
<td>4&amp;5</td>
<td>70%</td>
</tr>
<tr>
<td>6</td>
<td>60%</td>
</tr>
<tr>
<td>7&amp;8</td>
<td>50%</td>
</tr>
<tr>
<td>9</td>
<td>40%</td>
</tr>
<tr>
<td>10&amp;11</td>
<td>30%</td>
</tr>
<tr>
<td>12 through 15</td>
<td>0%</td>
</tr>
</tbody>
</table>

No withdrawal is allowed in the 15th week

For a student receiving VA education benefits, in addition to the prorated tuition, the school will refund a prorated portion of the application fee.

3. After the first 75% of any semester the student attends the school, the school will only refund to the appropriate party the tuition and fees received by the school from or on behalf of the student for any future semester if applicable.

4. Registration fee, learning resource fee, and extracurricular activities service fee are non-refundable.

5. An additional 2% deduction will be applied to refunds for tuition/fees paid by credit cards.

Students who leave a course without official withdrawal (drop) are subject to a failing grade in the course. No withdrawal is allowed in the last week of the semester.

### Refunds Due to Withdrawal from NPU

1. 3-day full refund: If the withdrawal occurs within 3 days after enrollment and no classes have been attended by the student, a full refund applies, including tuition, registration fee, learning resource fee, and extracurricular activities service fee paid for the semester.

2. Except for the case of 3-day full refund, the registration fee is non-refundable.

3. Other than the case of 3-day full refund, the extracurricular activities service fee and learning resource fee are refundable if the withdrawal occurs by the end of the first week of instruction.

4. If the withdrawal occurs before the end of the second week of instruction, the school will refund to the appropriate party:

   (a) Any tuition received by the school from or on behalf of the student for the current semester.

   (b) Any tuition and fees received by the school from or on behalf of the student for any future semesters.

5. If the withdrawal occurs after the end of the second week of instruction, the same tuition refund policy (see the refund table on the last page) applicable to other students who remain enrolled applies.

6. The school will issue a refund for withdrawal within 30 days of the student’s withdrawal, termination date, or the specified time period under applicable law, whichever occurs first. The student will remain obligated to the school for all unpaid tuition, fees, and other amounts charged the student pursuant to the agreement or otherwise that are not subject to refund in accordance with this section.

7. An additional 2% deduction will be applied to refunds for tuition/fees paid by credit cards.

8. A student withdrawing from NPU should submit the proper paperwork (or online request) to the Administration Office in order for the Records Office and the Business Office to process the student’s tuition refund. In general, the student’s withdrawal or termination date will be the student’s last date of attendance at the school.

9. The student should return all items owed to the library and the school and clear any financial balance owed to the school upon withdrawing from the school.

   The student’s suffering from an incapacitation, such as

   (i) illness,
(ii) accident,
(iii) death of a close family member, or
(iv) similar circumstances,
then the school will determine whether to increase the refund amount specified above of the tuition and fees received by the school from or on behalf of the student for the semester.

NOTE: Any outstanding fees owed to the University by the student will be deducted from the tuition refund.

Minimum Terms for Tuition Payments

The student is only obligated for the portion of the program cost applicable to each semester in which the student is enrolled in the school. The student must pay the school the applicable cost (i.e. semester tuition, other required fees) at the time of registration, unless the student and school agree in writing to a tuition payment plan.

Students whose tuition/fees are overdue are subject to withdrawal from classes by the school. Students who fail to fulfill their financial obligations to the school may be suspended from school and may reenter only upon full payment of the delinquent portion of their account unless the school has agreed in writing to a different payment arrangement.

Penalty: For any student whose tuition/fees are past due, a penalty of $20/month will be debited to the student’s financial account until his/her obligation is fulfilled.

If the student withdraws or is terminated from the program for any reason and subsequently applies to reenter the school, the school will determine in its sole discretion whether to allow the applicant to reenter. If the school allows the applicant to reenter, the student must execute a new enrollment agreement and pay all the current program costs.

Debts Owed to the University

Should a student or former student fail to pay a debt owed to the University, NPU may withhold permission to register, to use facilities for which a fee is authorized to be charged, to receive services and materials, or any combination of the above from any person owing a debt until the debt is paid (see Title 5, California Administrative Code, Sections 42380 and 42381). The University will withhold issuance of official transcripts of grades to any person owing a debt. If a student believes that he or she does not owe all or part of an unpaid obligation, the student should contact the campus Business Office. The Business Office will review the pertinent information, including any information the student may wish to present, and will advise the student of its conclusions with respect to the debt.

State of California Student Tuition Recovery Fund

California law requires that, upon enrollment, a fee be assessed in relation to the cost of tuition. This fee supports the Student Tuition Recovery Fund (STRF), a special fund established by the California legislature to reimburse students who might otherwise experience a financial loss as a result of untimely school closure. Students may be reimbursed by STRF only for prepaid but unused tuition. Institutional participation is mandatory (Education Code Section 94342). It is mandatory that enrollees keep a copy of any enrollment agreement, contract, or application to document enrollment, tuition receipts or canceled checks to document the total amount of tuition paid, and records which will show the percentage of the program which has been completed. Such records would substantiate a claim for reimbursement from the STRF, which, to be considered, must be filed within one year following school closure. If a student has obtained a judgment against the institution for any violation of the law and the student certifies that the judgment cannot be collected after diligent effort, a claim can be made to the STRF within two years after the date upon which the judgment became final. For further information or instructions, contact: Bureau for Private Postsecondary and Vocational Education, P. O. Box 980818, West Sacramento, CA 95798. Phone: (916) 445-3427.

Scholarships

Tuition scholarships are offered to qualified applicants and current students. The NPU Scholarship Committee is responsible for evaluating, selecting, and awarding scholarships.
Tuition Scholarships for New Applicants

NPU scholarships for new applicants are merit-based financial awards offered to qualified applicants interested in pursuing degree programs at NPU.

Qualifications: (1) The cumulative GPA from the official transcript, required for admission to the intended degree program, is at a minimum of 3.0 on a 4.0 scale; (2) The applicant’s resume or Statement of Purpose clearly describes the applicant’s academic goal, previous experience in community services or extracurricular activities, and if applicable, work experience; and (3) If the applicant’s native language is not English, he/she is required to have the test administering organization mail his/her TOEFL/IELTS score directly to NPU. The required minimum scores for scholarship awards are: TOEFL - 90 (IBT), or 233 (CBT), or 577 (PBT); IELTS - 7.0 bands.

Interested applicants must apply for the scholarship and submit the required documents along with his/her application materials by the deadline for the admission term. The scholarship application deadline for each term is in general three months before the term begins.

If the applicant is granted the scholarship, he/she will be awarded with a tuition scholarship of $500 per semester for three semesters, a cumulative tuition scholarship of $1,500, provided that the student enrolls full-time, maintains satisfactory progress in his/her academic study at NPU, is in good standing, and has contributed to the activities sponsored by the NPU Student Association, or any NPU student club, or participated in professional society activities.

Tuition Scholarships for Current Students

Tuition scholarships are awarded to current students in the fall trimester. Ten $1,000 scholarships are awarded to qualified students who are pursuing degrees at NPU. Application for the scholarship must be received by the Scholarship Committee by the deadline - June 30th. The following are the qualifications:

1. The student must have completed at least two semesters of coursework towards his/her degree goal at NPU,
2. The student has maintained a cumulative GPA of at least 3.8 at NPU,
3. The student must be recommended by at least one faculty member for the scholarship award,
4. The student must be in good standing with the University,
5. The student must be a member of at least one of the student clubs or be a contributing member of the NPU Student Association,
6. The student must be an active member in at least one professional society, and
7. The student is required to submit a Statement of Purpose and give a presentation in an open forum to clearly state the student’s academic goal, community or other services provided to the community or fellow schoolmates, personal qualities and skills obtained, and other points that the student chooses to make. The Scholarship Committee will schedule the presentation for the student.

VA Educational Assistance

The University is authorized by the U.S. Veterans Administration (VA) to accept qualified veterans who receive veteran’s education benefits. In administrating student financial and academic affairs for veteran and military students, the University follows VA and related military regulations. A newly admitted student is required to submit a Certificate of Release or Discharge from Active Duty Form (Form DD-214). Please contact the NPU Administration Office for additional information.

Student On-Campus Work-Study Opportunities

Limited openings in NPU’s work-study programs are available to highly qualified degree-seeking candidates. Applications are made via the NPU Online Service Center.

The students may apply for grader-ship, Teaching Assistantship (TA), or Laboratory Assistantship (LA). These assistantships are offered primarily on the basis of outstanding academic and professional achievement. Students chosen to perform these services must have the heart for helping fellow students in addition to meeting the academic qualification.
Each semester the administrative staff works with the faculty to assign graders, TAs, and LAs to assist faculty and students in a group of classes.

**Practicum and Industrial Cooperative Projects**

**Practicum** is a supervised practical experience that is the application of previously studied theory. Normally, three hours of work in a practical setting has the credit equivalency of one hour of classroom lecture. Under the supervision of a faculty or staff member, a written agreement shall be developed that outlines the arrangement between the institution and the practicum site, including specific learning objectives, course requirements, and evaluation criteria. Details of the qualifications are specified in the application process for the student. The supervising staff is responsible for checking the student’s qualifications.

**Industrial Cooperative Projects:** Highly selective internship opportunities with a number of local companies are available for qualified students. Available internship project information is posted on the Job Posting Board on the controlled NPU Online Service Center website.

**International students** must observe additional rules required by the U.S. Immigration & Customs Enforcement on Curricular Practical Training (CPT).

---

**Academic Information**

**Study Plan**

Upon admission to a degree program, the new student receives a copy of his/her admission evaluation form which also includes his/her graduation requirements. The electronic file of the student’s study plan will be maintained by designated administrative staff as the student continues his/her study at NPU. The student will have access to his/her own study plan through NPU’s Online Service Center. The student is advised to check his/her online study plan regularly and report any error to the administrative staff immediately.

Designated academic advisors will assist each student to select a concentration area, if it is required in the program, as well as courses to fulfill the requirements for the concentration area as well as the electives.

**Follow Proper Sequence:** In general, a student should complete lower-level courses before taking higher-level courses. A graduate student should clear all deficiencies before taking graduate level courses. For students taking ESL courses, see the section on “American Language Classes (ESL)” under “Admission Policies”.

**Follow Original Plan:** A student should follow his/her original study plan to complete his/her study in the program. When courses are replaced due to a catalog update, the student should take the replacement courses as substitutes accordingly. The student may also submit an online request, via the NPU Online Service Center, to “Request for Substitution of a Required Course” for each such update of a course.

**Use New Curriculum:** As the school catalog is updated each year, a student is allowed to submit a request for upgrading his/her study plan by using the graduation requirements specified in the newer and current catalog. The evaluation committee will make a new study plan for the student. The student may risk additional course requirements with such a request since the new requirements are different from the previous ones for the same program. The student is advised to make a careful decision before submitting such a request as the process is not reversible.

**Returning Student:** When a student returns to NPU to continue his/her study in an unfinished program after making a longer than one-semester absence, the returning student must submit a new application form and will receive a new study plan based on the graduation requirements specified in the current catalog. All or part of the credits earned from his/her previous study in the unfinished program at NPU will apply towards the new graduation requirements.
Academic Advising and Counseling

Academic advising and counseling is an essential element of the educational process. Designated faculty members and staff advisors serve as academic advisors and counselors to the students. Academic advising and counseling involves both the student and the advisor/academic counselor.

Although online registration is available to the student, he/she is welcome to meet with an academic advisor before and during the course registration period each semester. During the meeting, the advisor and the student will examine the student's study plan and academic records, verify course prerequisites, and choose suitable courses to enroll. Academic advising is also available to students throughout the school year. In addition to helping students plan course schedules, academic advisors may also encourage students to explore their academic options and personal goals in preparation for entering the professional world.

To ensure the satisfactory progress of each student, designated administrative staff maintain close contact with the faculty and the teaching assistants to monitor those students who may need extra help. Class attendance records available online to the managing staff are used as one input for student counseling. The student is to be contacted for counseling when either of the following occurs: (1) The managing staff is informed by any instructor who is concerned about the student’s performance in the class at any checkpoint during the semester, or (2) the student has a poor attendance record.

Class Schedule

Classes are scheduled every trimester. The class schedule is published approximately 7-8 weeks before the trimester starts, and it falls on the timeline shortly after the mid-term point in the preceding semester. Publication of the new class schedule readies the current students for the pre-registration activity.

Many degree program classes, especially graduate courses, are conducted on weekday evenings and on weekends to allow both non-working students and working professionals to pursue their studies during after-work hours. A number of degree courses and most American Language classes are conducted on weekdays in the daytime. Since the Learning Resource Center and the Student Center are open in both day and evening, full-time students may use weekdays’ daytime to study, conduct research, do homework, practice hands-on exercises in the labs or work on projects in the practicum labs, or get involved in extracurricular activities. Full-time administrative personnel are available on campus days and evenings, and weekdays and Saturdays to assist the students, faculty, and prospective applicants.

Registration

The registration calendar is listed in the University catalog and on the NPU website. The semester registration notice is sent to the students by e-mail and posted on the NPU website and bulletin boards. The registration packages are available online as well as in the library. Late registration fees will be imposed on all continuing students who register after the official pre-registration deadline.

1. All applicants to NPU must first be admitted into the University by the Admissions Office before being allowed to attend classes.
2. Except for new students registering for courses in the first semester, all on-going students must register on or before the scheduled pre-registration deadline for each semester.
3. New students who have received their acceptance documents are encouraged to register during the same registration period as the on-going students.
4. Current students may register online or in-person. Designated staff advisors are ready to offer assistance to the students for course selection or counseling.
5. Tuition and fees are due and payable in full at the time of registration unless the student has signed up for a tuition payment plan.
6. Working professionals who enjoy education benefits offered by their employers and receive tuition reimbursements may follow NPU’s special payment plan by submitting supporting documents to the NPU Administration Office prior to registration.
7. An undergraduate student wishing to enroll in more than 16 units and a graduate student in more than 12 units in a given semester must obtain permission from the student’s school dean.
7. Students on academic probation will be enrolled with limited course load.

8. Any student attending a class without officially registering in the class will be required to pay a fine as defined by the administration.

9. An international student is required to enroll as a full-time student (see definition in the next section) and maintain good status with the University during his/her study at NPU.

10. All international students are required to have a valid health insurance plan. They are required to purchase the health insurance plan contracted by NPU and pay the insurance fee at registration time.

11. Registration is complete when all fees are paid.

12. Students with a prior bad-check record will not be allowed to pay by check again.

A non-international student may enroll as a full-time or part-time student.

- **Full-Time Students**

Undergraduate students taking 12 or more units per semester and graduate students taking 9 or more units per semester are considered full-time students for the enrolled term.

All international students must be enrolled as full-time students. In NPU’s trimester system, an international student is required to enroll full-time for two consecutive semesters before being allowed to either take a semester break or enroll part-time for one semester. The international students must observe the NPU class attendance policy, maintain satisfactory progress towards completion of their degree objectives, and maintain good status with the University. See an International Student Advisor in the Administration Office for information on how to maintain “full-time” status at NPU.

- **Part-Time Students**

Undergraduate students taking less than 12 units per semester and graduate students taking less than 9 units per semester are considered part-time students.

- **Non-degree Students**

A person may wish to take courses at NPU as a non-degree student. The enrolling administrator will determine whether the student has the prerequisite for the intended courses or not. Therefore, a non-degree student may be required to submit his/her previous academic records, official or unofficial, to the Admissions Office for an unofficial evaluation before being allowed to enroll in courses at NPU.

A student pursuing a degree study may be placed in non-degree status when the student violates certain rules. Examples are: failure to submit official transcript or other required documents by a given deadline, failure to maintain satisfactory academic progress, failure to follow the student’s study plan. A student placed in non-degree status is required to remedy the flaw within a limited period of time. Violation of this limitation may result in termination of the student’s study at NPU.

- **Pre-degree Status**: When a student is taking courses to clear deficiencies, including ESL subjects, and the enrolled subjects constitute a sizable portion of his/her course load in a semester, the student will be placed in pre-degree status for the semester.

- **Change Study Plan**: In the event that the non-degree student decides to apply for degree study at NPU, he/she must go through the regular degree program application procedures. No more than 12 units earned in non-degree status at NPU may be applied to the degree requirements.

- **Adding and Dropping Courses**

After registering for a semester, a student may add/drop courses by a deadline which is specified in the school calendar. Adding courses is allowed in the first week of the semester and is on a space available basis. Only two requests of Add/Drop (each for one or multiple courses) are allowed by the add/drop deadline after each registration except for courses affected by cancellations made by the administration. A student may drop courses without records’ effect if it is made before the deadline – end of the first week of the semester.

From the second through the fourteenth week of the semester, a student may drop courses for serious and compelling reasons after discussing this with an academic counselor. The student will be issued a grade of “W”. Classes may not be dropped during the last week of the semester.
To add/drop courses, the student must:

1. Add/drop courses online if the online registration activity is open. Otherwise, meet with a staff advisor to add/drop courses. The Records Officers will review the add/drop request and approve or deny the request. International students must observe the “full-time” requirement.
2. Pay applicable fees (including $10/$20 Add/Drop fee except for courses affected by cancellations made by the administration).

The late registration fee is not assessed for courses added under this policy. Any refund for dropped courses will be calculated according to the Refund Policy.

No official withdrawal: Students who leave a course without official withdrawal (drop) are subject to a failing grade in the course.

Grading Policy and Academic Standards

- Grades

The instructors are requested to submit their semester grades for their classes within one week after the last day of the semester. An online grade entry system is used by the instructors to enter grades. Each student may check his/her own academic records online. Grades are not given out over the telephone. The following symbols shall be used in evaluating student performance. The symbols reflect the quality of the student’s accomplishments relative to standards set for each course.

- A = Highest level, showing excellence.
- B = Performance is good, but not at the highest level.
- C = Performance is adequate in an undergraduate course, passing in a master's degree course, and failing in a doctorate degree course.
- D = Performance is passing in an undergraduate course and failing in a graduate course.
- F = (Fail) Course requirements have not been met. Credits are not earned by the student.
- I = Incomplete grade is issued with approval by the faculty and the Records Office. Coursework was passing at the time. Completion of coursework and grade conversion must follow the academic policy in effect.
- CR = Credit by passing challenge examination.
- S = Satisfactory performance (for project/thesis/practicum courses only). Credits are earned by the student.
- P = Pass without credit. Student passed the course which was offered on pass/no-pass basis.
- NP = (Not pass) Student did not pass the course which was offered on pass/no-pass basis. No credit was earned.
- IP = (In progress) performance is satisfactory, but a final grade is not yet assigned.
- AU = (Audit) Student was enrolled on a non-credit basis.
- W = (Withdrawal) Student drops a course after the add/drop deadline.
- NC = (No credit) The student did not pass a challenge examination. Prior to May 1998 the grade NC might also be issued to a student taking an ESL course.
- U = (Unauthorized withdraw) The student did not withdraw from the course but failed to meet attendance and course requirements. “U” grade equals “F” grade.
- * = Course has been repeated.
- RE = Course is currently being repeated.

Grades assigned by each course instructor conform to individual policies as stated in the published course syllabus. A grade submitted by an instructor is considered final and may be changed only for one of the following reasons:

1. Error in recording a score for a student product (test, quiz, paper, etc.)
2. Miscalculation of a score, including the cumulative score for a semester.
3. Omission from consideration of valid student products that were submitted in time.

No other reason constitutes a basis for a request for grade change. All requests for grade changes must be submitted to the Records Office within two weeks following the date of issuance of the grade in question. Under no condition will a grade change be permitted after a degree has been awarded. A grade will not be changed after one semester from the date of its issuance unless it has been repeated.
• Passing Grades

1. Undergraduate Programs

In each undergraduate program, the passing grade for courses taken at NPU is D- or better.

2. Master’s Degree Programs

In each master’s degree program, C- is the passing grade for each course taken to clear a deficiency or earn credit towards graduation.

3. Doctorate Degree Programs

In each doctorate degree program, the passing grade for all courses taken to meet the degree requirements must be B- or better.

• Grade Point Average (GPA and CGPA)

The grade point average (GPA) is based on courses in which letter grades are earned. Instructors may add plus (+) or minus (-) options to letter grades in order to refine evaluation procedures. GPA can be calculated on semester base or cumulatively (CGPA). CGPA is calculated based on all courses and grades earned at NPU. To compute the GPA or CGPA, divide the total number of grade points by the total number of units attempted in courses receiving letter grades. Use the table for grade point assignments.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Points per Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>4.0</td>
</tr>
<tr>
<td>A</td>
<td>4.0</td>
</tr>
<tr>
<td>A-</td>
<td>3.7</td>
</tr>
<tr>
<td>B+</td>
<td>3.3</td>
</tr>
<tr>
<td>B</td>
<td>3.0</td>
</tr>
<tr>
<td>B-</td>
<td>2.7</td>
</tr>
<tr>
<td>C+</td>
<td>2.3</td>
</tr>
<tr>
<td>C</td>
<td>2.0</td>
</tr>
<tr>
<td>C-</td>
<td>1.7</td>
</tr>
<tr>
<td>D+</td>
<td>1.3</td>
</tr>
<tr>
<td>D</td>
<td>1.0</td>
</tr>
<tr>
<td>D-</td>
<td>0.7</td>
</tr>
<tr>
<td>F</td>
<td>0</td>
</tr>
<tr>
<td>U</td>
<td>0</td>
</tr>
<tr>
<td>NP</td>
<td>0</td>
</tr>
<tr>
<td>NC</td>
<td>0</td>
</tr>
</tbody>
</table>

All other grading symbols receive no grade points, and units for those courses are excluded from computation for GPA or CGPA.

• Incomplete

In order to receive a grade of “I”, a student must have completed all homework and tests/quizzes to date, passed the mid-term exam, and have serious and compelling circumstances beyond the student’s control that occur within the last two weeks of the semester preventing the student from taking the final exam or submitting the final project. Issuance of an “I” grade requires approvals from both the course instructor and the responsible Records Officer.

The student is required to submit the online “Request for Incomplete Grade” form before the final exam starts. The student will be notified of the review result. If approvals are granted by both the instructor and the Records Office, an “I” grade will be issued to the student. The “incomplete” work must be made up and a final grade issued by the instructor by the end of the 4th week of the following semester. An “F” grade will be issued to the student if an “I” grade is not cleared within the 4-week deadline.

• Auditing Courses

A student may audit a course instead of enrolling for credit. No credit is earned by the student and the grade symbol of “AU” is received by the student for auditing a course. NPU views auditing classes as an opportunity for students and alumni to review courses previously taken or to become informed about current information on a subject. The following categories of courses cannot be taken with auditing status: CPT (practicum), ESL, lab courses, and project courses.

Priority will be given to students enrolled in a class for credit toward graduation. When enrollments in a class exceed the class limit, the University reserves the right to remove auditors from the registration list and refund tuition paid for the class.

A student may change his/her status from audit to credit or from credit to audit by the add/drop deadline by conducting a regular ADD/DROP process.

Attendance: A student enrolled in a class on audit status must observe the NPU attendance policy and rules set by the instructor although the student is not required to do homework or take exams given to the class.
• Repetition of Courses

A student may repeat a course due to several reasons: (a) To meet the graduation requirements, (b) To earn a better grade, or (c) To gain a better understanding of the subject. In such cases, only the latest grade earned for the same course will be kept in the student’s permanent records. When repeating a course, the student pays at the regular tuition rate.

1. Undergraduates

For purposes of academic renewal, any course taken to meet graduation requirements in which a failing grade was earned must be repeated.

2. Graduates

Master’s degree students who receive a grade of D+ or below in a course taken to meet graduation requirements must repeat the course. Such a repetition is permitted for purposes of academic renewal. Doctoral students who receive a grade of C+ or lower for any graduate course taken towards their doctoral degrees must repeat the course.

■ Form of Instruction

NPU offers its courses primarily “on-site” in traditional classroom setting and labs at the NPU campus in Fremont, California. A limited number of business courses are offered online as an alternative form of instruction through the NPU Online platform in parallel with the regular in–class courses. Refer to the section on “Taking Online Courses” below for information concerning this instructional delivery mode.

■ Attendance

Attendance in class is required for all students, including those “auditing” a course. Students must attend all class meetings with the exception of an emergency or illness. Responsibility for class attendance rests with the individual student, and since regular and punctual class attendance is expected, the student must accept the consequence of failure to attend.

• Taking Online Courses: Students taking online courses must follow the course requirements to participate in the weekly activities, including but not limited to reading assigned materials, interacting with the instructor and classmates using the online tools, doing homework and/or projects, and conducting research. All online activities are recorded for evaluation purposes.

In case of emergency or illness, the student must notify the instructor or the Administration Office via either email, online request (the NPU Online Service Center), or phone call as soon as possible.

■ Taking Online Courses

The University offers a limited number of courses in online delivery mode as an alternative to those in in-class mode. These courses are open only to regularly admitted NPU students. There will be no additional fees or charges associated with the verification of student identity at the time of enrollment in online courses.

Online learning normally requires a great deal of self-discipline.

NPU Online courses are similar to residential courses with regard to learning objectives, credits earned, and course duration; however, they are different with regard to the type of activities and interaction required of the student.

■ Online Learner Authentication

The NPU administration provides a secure login and pass code at the time of enrollment to each student enrolled in an online course for the purpose of student authentication and verification of identity throughout the course.

■ Online Course Environment

Currently NPU uses Moodle platform as a base to develop its online course management system for students taking online classes. Customized and developed features include but not limited to: online testing and test bank enhancement, online discussion board enhancement, integration of McGraw Hill Campus e-Library, Youtube.com integration. This industry-standard distance education platform is further customized with NPU’s professionally designed logo and display interface. The student may access the NPU online course management system via a web browser.
Online Student Equipment

Online student equipment includes a computer, software, and Internet service which must satisfy the following specifications:

1. Minimum Requirements for Computer Hardware

In order to take online courses, the student must have computer hardware meeting all the following minimum requirements:
- **CPU:** Intel® Core™ 2 Duo or AMD Phenom™ II or equivalent PC-compatible, (Macintosh or Linux-based machines are not supported), 1.8GHz processor speed (or greater),
- **Peripherals:** Keyboard, Mouse, Speakers, Headphone, Microphone, Web Camera,
- **Display:** Super VGA (800x600 or higher resolution),
- **Hard Drive:** Minimum 10Gb free space,
- **Computer Memory:** At least 2G RAM,
- **Sound Card:** Sound-Blaster-compatible sound card.

2. Minimum Requirements for Software

In order to take online courses, the student must have all the following software tools:
- **Operating System:** Microsoft Windows XP (or higher),
- **Internet Browser:** Microsoft Internet Explorer 7.0 (or higher),
- **Adobe:** Acrobat Reader 9.0 (or higher)
- **Microsoft Office:** Microsoft Office Professional 2007 (or higher).

3. Minimum Requirements for Internet Service

In order to take online courses, the student must have DSL broadband connection or Cable broadband connection service available to him/her and is responsible for all the expenses associated with such services as well as all the required computer equipment as needed.

4. Other Requirements

- **E-mail Account:** NPU provides free email services to all students taking online courses.

Writing Ability: Students taking online courses are required to have passed the admission requirement in English.

Prerequisites

NPU students wishing to enroll in an NPU Online course will be required to (1) have acquired English writing ability, (2) complete an online Self-Assessment survey, (3) pass an orientation workshop and test, and (4) read the NPU Online Student Handbook. Items (2) and (3) are conducted online to help assess the student’s readiness for taking online courses. A face-to-face or telephone interview of the student by an administrative counselor may be used to further assess the student’s qualification for taking the online course. The extensive orientation will help determine whether an NPU online course is the right choice for the student.

Weekly Activities

The NPU Online courses are designed for the students to learn and proceed on a weekly basis; all assignments and learning materials are laid out on a weekly schedule and the students must complete the weekly work on time in order to proceed successfully. To succeed, the individual must participate in all activities required for the online course.

Class Participation

Online class participation activities of each student enrolled are recorded electronically by the online program and by the instructor. In addition to weekly reading and homework assignments, there are other activities including discussion board and messaging. The instructor has the option to use webcasting or interactive audio/video communication for additional activities. Among these activities, webcasting requires the real-time participation of all parties.

Taking Exams: The instructor of an online course determines how to conduct the exams for the course.

Students enrolling in an NPU Online course will not be allowed to transfer or “migrate” to the equivalent residential course once the semester has begun (students may add and drop to make the switch by the add/drop deadline only).

International Students: According to the government’s rules for international students, an
international student is not allowed to take more than one online course in any term, and the online course can not be the only course taken by the student in any term.

**Online Information:** Refer to the “NPU Online” website for detailed information related to taking online courses.

■ **Standards of Satisfactory Progress (SSP)**

NPU has a policy on satisfactory academic progress that measures whether students are maintaining satisfactory academic progress in their educational program. It requires each student to meet the minimum qualitative and quantitative components of the standards. When the student fails to maintain the standard at various checkpoints, the student will be placed in one of the following statuses: On Academic Probation, Dismissal, or Extended Enrollment.

There are two primary factors affecting the student’s academic status: [1] Cumulative Grade Point Average (CGPA – refer to the subsection on GPA and CGPA in the section on Grading Policy and Academic Standards) and [2] Percentage of successful course completion of courses attempted.

Although currently NPU does not offer any government financial aid program, the term “financial aid” may be mentioned below for students’ information purposes. In order to state NPU’s policy of satisfactory academic progress, the terms of “Maximum Program Length” (MPL) and “Academic Year” must be defined:

- **Maximum Program Length (MPL)**

Program length is the number of units required for the student to complete his/her program. It is determined at the time when the student’s admission evaluation has been made. The maximum program length is equal to 150% of the program length. The student is expected to successfully complete his/her degree program within his/her MPL in order to receive the academic credential/degree he/she is pursuing.

- **Academic Year**

A period of two (2) semesters is equivalent to one (1) academic year in evaluating the academic progress of a student.

- **Evaluation Points in the Student’s Academic Program**

A student is evaluated at the end of every semester. The student’s CGPA determines whether the student should be placed in academic-probation status. In addition, at the checkpoints listed in the tables below, the combination of CGPA and the percentage of successful course completion of courses attempted determines whether the student maintains satisfactory academic progress or not. Each table shows that the required minimum percentage of successful course completion versus courses attempted increases as the student earns an increasing number of credits in the program.

- **Meeting Standards of Satisfactory Progress (SSP):** A student is considered meeting the standards of satisfactory progress if meeting the following requirements:

**SSP Chart for Undergraduate Students**

<table>
<thead>
<tr>
<th>Evaluation Point (end of period)</th>
<th>Min. CGPA</th>
<th>Min. Successful Course Completion % of Courses Attempted</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st academic yr</td>
<td>2.0</td>
<td>55%</td>
</tr>
<tr>
<td>2nd academic yr</td>
<td>2.0</td>
<td>60%</td>
</tr>
<tr>
<td>Subsequent yr</td>
<td>2.0</td>
<td>65%</td>
</tr>
</tbody>
</table>

**SSP Chart for Graduate Students**

<table>
<thead>
<tr>
<th>Evaluation Point (end of period)</th>
<th>Min. CGPA</th>
<th>Min. Successful Course Completion % of Courses Attempted</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st academic yr</td>
<td>3.0</td>
<td>60%</td>
</tr>
<tr>
<td>2nd academic yr</td>
<td>3.0</td>
<td>65%</td>
</tr>
<tr>
<td>Subsequent yr</td>
<td>3.0</td>
<td>75%</td>
</tr>
</tbody>
</table>

- **Effect of Grades on Satisfactory Academic Progress:**

1. Units attempted but not completed include the following grades: Failing grades including F (fail), NC (not passing a
The grades CR (credit through challenge exam by undergraduates) counts as units attempted and completed. The grades A, B, C, D, and S count as units attempted and completed.

The grades of P (pass without credit), AU (audit), and non-credit courses do not count for credit attempted nor completed; they have no effect on the calculations of GPA, CGPA, or percentage of successful course completion. Examples of non-credit courses are: ESL (English as a Second Language) courses and business preparatory module courses (courses numbered as PBUS01 through PBUS04).

Credits transferred, performed at the time of admission evaluation, will reduce the maximum program length. The credit transfer policy is observed for both new students and current students changing program of study or seeking to earn an additional degree at NPU. Credit transferred from any outside institution is excluded from the program length and has no effect on the calculation of the student’s GPA or CGPA. Credit transferred into a program from previous credit earned at NPU is excluded from the program length, but the grades are transferred along with the credit; they are included in the calculations of the student’s CGPA if the student changes program within the same school.

Taking Deficiency Courses: A graduate student may be required to take undergraduate course subjects to clear background deficiencies. These course units are included in the student’s program length and affect the MPL; the credits and grades of these courses affect the student’s CGPA based in the rules stated in the above items 1 through 4.

- **Academic Probation:** The following students are placed on academic probation:
  1. In any semester, an undergraduate student’s CGPA is below 2.0, or a graduate student’s CGPA is below 3.0,
  2. Students who fail to meet the Standard of Satisfactory Progress at checkpoints listed in the two SSP charts above.

- **Maximum Terms of Academic Probation**

  1. Bachelor’s and Master’s Degree Students: A student placed on academic probation the first time or in a semester following a successful semester must remedy the condition within two semesters. Otherwise, the student is dismissed from the study program. A student placed on academic probation for two consecutive terms must remedy the condition in the following semester. Otherwise, the student is dismissed from the study program. A student who receives VA education benefits and does not clear the probationary status within two semesters will be disqualified for VA education benefits and dismissed from the study program. In such an event, both the authorizing VA office and the student will be notified.

  2. Doctoral students: Refer to the Doctorate Degree Programs.

- **Rule Related to Financial Aid** (for information only): A student receiving federal financial aid who does not meet the CGPA standards at the end of the second year will no longer be eligible for financial aid, may not be placed on probation, and must be dismissed, unless the student wishes to continue without being eligible for federal financial aid. However, a student not meeting the CGPA standards at the end of the second year may remain as an enrolled student who is eligible for federal financial aid if there are documented mitigating circumstances (i.e. death in the family, sickness of the student, etc.).

- **Mitigating Circumstances:** When the institution grants a student’s appeal for mitigating circumstances, the student will be placed on a specified period of probation and will be considered making satisfactory academic progress during that period. The Counseling Committee makes a decision on the specifics of such a grant.

- **Removing Academic Probation Status:** A student who is able to remedy the condition and reestablish satisfactory progress within the terms specified in the above section of Maximum Terms of Academic Probation will be removed from academic probation. Observations will be made on the student every semester thereafter.
• **Dismissal:** A student placed on academic probation who is unable to remedy the condition described in the above section on Maximum Terms of Academic Probation will be dismissed from his/her program of study. These students are not eligible for financial aid (information only).

• **Academic Evaluation of Students Placed on Academic Probation or Dismissal:** An academic evaluation of the student placed on academic probation or dismissal will be conducted by an Academic Counselor or a Counseling Committee formed by more than one Academic Counselor. The purpose is to determine if the student has the desire and the academic ability to progress satisfactorily in the program. If the Academic Counselor or the Counseling Committee finds that the student lacks the desire or ability to progress satisfactorily, the student will be referred to another institution with a learning environment more suitable for the student.

• **Extended Enrollment Status:** A bachelor’s or master’s degree student dismissed due to conditions specified in the section of “Dismissal” is allowed to enroll for an extended period of two semesters, provided the student’s evaluating counselor/committee has determined that the student has the desire and ability to progress satisfactorily and is making progress, and the student agrees in writing to the following: (1) The student is not eligible for additional student aid at NPU while in an extended enrollment status and is responsible for all financial arrangements with NPU, (2) the student is not enrolled in an eligible program for the purpose of student aid eligibility, (3) the student must seek to correct academic deficiencies by retaking and successfully completing previously failed course(s) in this extended enrollment period, and (4) when the government’s financial aid programs are in effect, under no circumstances will a student be granted a degree if his/her study in the program exceeds the maximum program length (MPL).

• **Filing Complaint of Academic Probation Status or Dismissal:** A student who has been placed on probation or dismissal and disagrees with the finding may appeal according to the grievance procedures set forth in this catalog and posted on the Online Service Center for the students. The Administration Office will hold a hearing and make a decision on the probation/dismissal. This procedure also applies to students who wish to appeal because of special or mitigating circumstances.

**Examinations**

NPU has five different types of examinations:

• **Course Examinations:** Most courses at the University have at least two examinations in a semester: a midterm and a final. These examinations may be comprehensive or partially comprehensive, so students need to ascertain from their instructors the precise scope of the examinations. Course examinations can consist of information found in the textbook, outside reading, and the lectures; thus, students should review and synthesize all of the course material. Furthermore, the structure of course examinations can be a combination of essay, multiple-choice answers, and short answers. At the end of each semester, the students are required to take final examinations.

• **Examination for Challenging a Course:** NPU recognizes that exceptional undergraduate students, by reason of independent studies, overlapping course work, or work experience, may have achieved the learning objectives of a course. Therefore, undergraduate students with the course background may petition to receive credit for the course by completing a “Challenge Examination”.

Students wishing to challenge a course by examination must enroll for the course and pay tuition fees in the same manner as courses to be completed by regular class attendance. The course to be challenged must be listed on the schedule of classes for the semester. A formal online petition, via the Online Service Center, for challenge must be submitted to the Records Office at the time of registration, which must be before the beginning of the semester. Permission from both the instructor and the Records Office is required.

• **Earn Credit:** The student must complete the examination before the end of the first week of the semester. The instructor giving the examination grades the test and determines whether the student passes the test or not. A grade of credit “CR” is assigned for passing the test; otherwise, the grade is no credit “NC”. The student may choose to stay in the class and
complete the course work for a letter grade at the end of the term. Students who fail the challenge examination must attend the class.

Please note: Only challenges to curriculum-required courses are permitted.

How many challenge exams can you take?  The maximum number of courses that may be challenged is five.

A fee per examination for the challenged course is charged to the student in addition to the course tuition.

- Proficiency Examinations:

Graduate students who have knowledge and experience of a background (undergraduate) subject but have not taken a course in the subject may clear the background requirement by taking a proficiency examination. The proficiency exam should be taken early enough to satisfy the "prerequisite" requirement for higher-level courses.

An undergraduate student may be required to take a proficiency examination on a major subject if the subject was taken more than ten years ago and the student has not had relevant experience in the subject for ten years.

New business graduate students who took the following courses in foreign countries may be required to take proficiency examinations on these subjects: accounting, finance, economics, marketing, and business law.

Passing the Test: The instructor giving the proficiency examination grades the test and determines whether the student passes the test or not. A non-refundable fee is charged to the student for taking a proficiency examination. The student is allowed to apply for taking a proficiency examination on a subject only once. If the student misses a pre-scheduled proficiency examination, the exam fee is non-refundable and the student loses his/her chance of taking the examination on the subject.

- Entrance Assessment Examinations:

See the sections on English Proficiency Requirement and Entrance Assessment Tests for entrance placement examinations on English skills, SAT-I for freshmen, GMAT for applicants pursuing the MBA and DBA degrees, and GRE for those pursuing the DCE degree.

- Learning Assistance

Each semester designated administrative staff work with the faculty members to assign Graders and Teaching Assistants (TA) for many courses to assist faculty teaching and student learning. These services are provided by the school to the students free of charge. Students chosen to provide these services must have the heart for helping fellow students. The Graders and TAs earn financial credit for services they provide. They are required to attend an orientation program before the semester starts in which they also receive their job descriptions and requirements information.

In the first class meeting, each TA meets with the students in his/her assisted class and they work together to determine the TA’s service schedule for the semester. The TAs work in a designated TA office equipped with network computers with access to the internet. Their work schedules are posted outside the TA office at the beginning of the semester.

The TAs are expected to conduct review sessions before mid-term and final examinations to help the students prepare for the major exams. The TAs are also instructed to observe the students’ study progress and performance and provide feedback to the faculty and the administrators for improving the student services.

- Graduation

- Bulletin Requirements

The NPU catalog serves as the school's contract with the students. Therefore, students fall under the graduation requirements written in the catalog used at the time of the student’s entrance to the program as a degree-seeking student. The section on “Study Plan” in “Academic Information” describes the rules for the student to follow for the graduation requirements.

- Petition to Graduate

As a student approaches the end of his/her undergraduate/graduate study, he/she must initiate a review process for the Records Officers to verify the student’s eligibility for graduation. The student must file a petition with the Records
Office one semester in advance - prior to his/her last registration – by using the NPU Online Service Center to submit this request. The Records Office staff will then make a graduation evaluation in time for the petitioner to register for the last time before graduation. The student will receive his/her evaluation report to confirm the courses left for him/her to complete the graduation requirements. The university graduation fee is charged for each graduation petition.

- **Re-petition to Graduate**: A student is required to resubmit the request and pay a re-petition fee after filing the original graduation request if any of the following occurs:

  1. If the petition for graduation is denied.
  2. If the student is unable to complete the rest of his/her coursework by the approved graduation date.
  3. If the student decides to make a change to his/her graduation requirements by adopting the requirements specified in the current catalog (a new admission evaluation and study plan will be made for the student) which results in additional coursework for the student.
  4. If an international student wishes to enrich his/her knowledge and skills by taking courses in addition to the minimum graduation requirements beyond the approved graduation date, the student is required to enroll as a full-time student until his/her final graduation.

A re-evaluation of the student’s graduation requirements will be made and a new checklist will be provided to the student.

Students are responsible for compliance with the announcements and regulations specified in the catalog and with all policies, rules and regulations of the University. Upon completion of their study programs and fulfilling their financial obligations to the University, students are granted degrees and receive diplomas.

- **Completion of a Program**

  The semester in which a student fulfills the graduation requirements, including course requirements, project completion (if applicable), and any financial obligations, is the semester the student graduates and is the date that is shown on the diploma.

  The student will not have his/her degree awarded or diploma or transcript released until all university fees have been paid and library records cleared.

**Enrollment in the Last Semester**: A student must be enrolled at NPU in the semester he/she graduates.

Students may pick up their diplomas 60 days after graduation and after they have cleared their accounts.

**Withdrawal from the University**

A student is considered “withdrawing” from NPU when any of the following occurs: (1) the student drops/withdraws from all courses enrolled in a semester when the student is required to remain enrolled to maintain his/her academic status, (2) the student submits an online/paper “Request for Withdrawal from NPU”, (3) the student is terminated due to disciplinary issues, unsatisfactory academic performance, fees overdue, or violation of regulations required for international students, or (4) the student has not enrolled at NPU for two consecutive semesters or more.

To withdraw from NPU, the student is advised to submit an online/paper “Request for Withdrawal from NPU”. The student must clear his/her financial obligation to the school as well as his/her library records.

Withdrawal during the first week of a semester will not be recorded on the permanent transcript. For withdrawal after the first week and before the final exams, a “W” grade for each enrolled course is posted on the permanent transcript. A student withdrawing from the University without formal notification to the Records Office is subject to a “U” grade which is posted on the permanent transcript.

Refer to the “Refund Policy” section for the policy on refunds for students withdrawing from NPU. Students who withdraw from NPU without clearing their financial balances will not be issued their official transcripts.

- **Re-entry to NPU**: Any student who withdraws from NPU and is absent for more than one semester before resuming studies at a later date must submit a new Application for Admissions form (online or paper), and fails
under the admissions and graduation requirements in effect at the time of reentrance.

- **International students** who plan to transfer to another institution must follow the transfer rules published by the U.S. Citizenship and Immigration Services.

**Educational Records**

Education records are all files, records, or documents maintained by the school, which contain information directly related to the students. Examples of education records are the student education files, placement files, and financial aid files. It is the policy of the school to monitor educational records to ensure that they do not contain information that is inaccurate, misleading, or otherwise inappropriate. The school may destroy records that are no longer useful or pertinent to the students’ circumstances.

**Student Privacy**

The only persons allowed access to such records are those who have a legitimate administrative or educational interest. Under the authority of the Family Educational Rights and Privacy Act of 1974, as amended, students have the right to examine certain files, records or documents maintained by the school which pertain to them. The school must permit students to examine such records within forty-five days after submission of a written request, and to obtain copies of such records upon payment of a reproduction fee. Students may request that the school amend their education records on the grounds that they are inaccurate, misleading, or in violation of their right of privacy. In the event that the school refuses to so amend the records, students may, after complying with the Filing a Grievance procedure, request a hearing. If the outcome of the hearing is unsatisfactory, the student may submit an explanatory statement for inclusion in the education record.

Students have the right to file complaints with the U.S. Department of Education concerning the school’s alleged failure to comply with the Act.

**Access by Officials**

The school may release student information without written consent of the students to:

(a) Other schools and NPU officials who have legitimate educational interests.
(b) Other schools where students have applied for admission.
(c) Authorized representatives of the Department of Education or the Comptroller General of the United States.
(d) Veterans Administration.
(e) State and local authorities where required.
(f) Accrediting agencies.
(g) Parents of students who are their dependents for purposes of the Internal Revenue Code. However, the school is not required to release such records.
(h) Appropriate persons or agencies in connection with student applications for or receipt of financial aid.
(i) Courts in compliance with a court order or subpoena, provided that a reasonable attempt is made to notify the student prior to compliance.
(j) Appropriate persons or agencies in the event of a health or safety emergency, where such release without consent is necessary under the circumstances.
(k) Organizations conducting studies to develop, validate, and administer predictive tests, to administer student aid programs, or to improve instruction.

In all other cases, the school shall obtain the written consent of the students prior to releasing such information to any person or organization.

**Exemptions**

The following items are exempt from the Family Educational Rights and Privacy Act of 1974:

(a) Parent’s confidential statement, financial need analysis report, and the Pell Grant A.D. report.
(b) Confidential letters of recommendation received by the school prior to January 1, 1975. As to such letters received after 1974, the Act permits students to waive their right of access if the letters are related to admissions, employment, or honors.
(c) Records about students made by teachers or administrators that are maintained by and accessible only to the teachers or administrators.
(d) School security records.
(e) Employment records for school employees who are also current or former students.
(f) Records compiled or maintained by physicians, psychiatrists, psychologists, or other recognized professionals or paraprofessionals acting or assisting in such capacities, for treatment purposes, and which are available only to persons providing the treatment.

Student Discipline

■ Inappropriate Conduct

The University subscribes to relevant portions of the California Administrative Code as it applies to the California State University System. Inappropriate conduct by students or by applicants for admission is subject to discipline as provided in portions of Sections 41301 and 41303. The following code applies to all:

41301. Expulsion, Suspension, and Probation of Students

(a) Cheating or plagiarism in connection with an academic program.

(b) Forgery, alteration, or misuse of campus documents, records, or identification, or knowingly furnishing false information to the University.

(c) Violation of copyright laws.

(d) Misrepresentation of oneself or of an organization to be an agent of another school.

(e) Obstruction or disruption of the campus educational process, administrative process, or other campus function, whether on or off campus.

(f) Physical abuse on or off campus of the person or property of any member of the campus community or of members of his or her family, or the threat of such physical abuse.

(g) Theft of, or non-accidental damage to, campus property or property in the possession of, or owned by, a member of the campus community.

(h) Unauthorized entry into, unauthorized use of, or misuse of campus property; unauthorized entry into classes.

(i) On campus property, the sale or knowing possession of dangerous drugs, restricted dangerous drugs, or narcotics as those terms are used in California statutes, except when lawfully prescribed pursuant to medical or dental care, or when lawfully permitted for the purpose of research, instruction, or analysis.

(j) Knowing possession or use of explosives, dangerous chemicals, or deadly weapons on campus property or at a campus function without prior authorization of the President.

(k) Engaging in lewd, indecent, or obscene behavior on campus property or at a campus function, either in person or by correspondence.

(l) Abusive behavior directed toward, or hazing of, a member of the campus community.

(m) Violation of any order of the President of the University, notice of which has been given prior to such violation and during the academic term in which the violation occurs, either by publication, or by posting on an official bulletin board designated for this purpose, and which order is not inconsistent with any of the other provisions of this section.

41303. Conduct by Applicants for Admission

Notwithstanding any provision in this chapter to the contrary, admission or readmission may be denied to any person who, while not enrolled as a student, commits acts which, were he or she enrolled as a student, would be the basis for disciplinary proceedings pursuant to Section 41301. Admission or readmission may be denied to any person who, while a student, commits acts that are subject to disciplinary action pursuant to Section 41301.

■ Appeal of Dismissal

A student has one week from the time of notification of dismissal to file an appeal. He/she may request an appeal of dismissal by writing a letter of response to the dismissal charges and requesting an appeals hearing. If the hearing is granted, based on the student’s reply letter, the individuals involved in the process will convene to hear the appeal. If an appeal is granted, the student may resume course work at NPU. The following process must be followed to appeal disciplinary action/probation served to a student:

1) The appeal is made in writing to NPU's President for presentation of any extenuating circumstances or evidence the student believes applicable.

2) The President then sets up a hearing with an administrative appeals committee to review the appeal. The committee will be comprised
of a minimum of two administrators and one student member. Copies of the appeal shall be distributed to each member of the committee prior to the hearing.

3) The student will meet with the committee to explain the appeal.

4) The committee will make its decision based upon the evidence presented and the interview with the student making the appeal.

5) The decision of the committee will be communicated to the student making the appeal within 48 hours of the final decision.

Student Grievance Procedures

Every student has access to a formal grievance process if so needed. If a student has a problem or concern of any nature regarding any aspect of NPU whether it is with personnel, course of study, or general university policies, s/he has the right to file a grievance. S/he is encouraged to communicate the concern in writing to the Office of Student Affairs. The Office of Student Affairs will act to bring a final resolution to the stated grievance. The following procedure should be observed:

Anyone with a grievance or complaint may request an individual conference with the appropriate instructor or staff member to discuss the problem. If a satisfactory resolution is not reached during step one, the aggrieved party should seek guidance from the Office of Student Affairs. If step two does not resolve the grievance, the aggrieved party should seek guidance from the Office of Academic Affairs. If this is not an academic issue, proceed to step four.

If the previous steps have not solved the grievance within 48 hours of the incident, the aggrieved party must present to the President, in writing, all facts of the grievance. Within 24 hours, upon receipt of the written information, the President (or his designee) will schedule a Grievance Committee hearing. The time of the meeting will be communicated, in writing, to all concerned parties. All persons involved with the incident must be present at the time of the hearing. All parties involved will be given an opportunity to discuss the grievance. The discussion of the Committee will be communicated to those involved within 48 hours of the hearing. The Committee decision will be final.

The Accreditation Council for Independent Colleges and Schools (ACICS) provides procedures for the filing of complaints against accredited institutions. ACICS requires that the complainant has exhausted all complaint and grievance procedures provided under NPU’s policies. Should such a complaint be filed, ACICS will review the matter to determine whether there may have been a violation of its criteria and standards and can take action only if it determines there to have been such a violation. ACICS can be contacted at: 750 First Street, NE, Suite 980, Washington, DC 20002.

POLICIES AND STATEMENTS ADDRESSING THE INVESTIGATION AND TREATMENT OF STUDENTS, STAFF, AND FACULTY REGARDING SEXUAL HARASSMENT AND ASSAULT

It is the policy of the University to provide a work and study environment free of sexual harassment. All students and employees should be aware that the University strongly disapproves of any conduct that constitutes sexual harassment and takes disciplinary measures to ensure compliance. All complaints are investigated and appropriate action taken. Deans, chairs and supervisors have an obligation to maintain a positive and productive work environment for faculty, staff, and students. They are expected to halt any harassment by calling attention to this policy or, if necessary, by taking more direct disciplinary action. When a situation involving sexual harassment is discovered, corrective action must be taken immediately. Unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature constitute sexual harassment when (1) submission to such conduct is made either explicitly or implicitly a term or condition of an individual’s continuation at NPU or a grade in a class or other activity, (2) submission to or rejection of such conduct by an individual is used as the basis for a decision affecting such an individual, or (3) such conduct has the purpose or effect of unreasonably interfering with an individual’s performance or creating an intimidating, hostile or offensive work environment.

It should be noted that sexually harassing behavior is not limited to overt physical aggression towards strangers. It can occur among acquaintances, friends, even lovers. In
some cases it may not be maliciously intended; it may not even be conscious on the part of its perpetrator. Its undesirable consequences include mental and emotional stress or discomfort as well as occasional bodily harm. It is usually felt by its victims to be demeaning, or coercive, or punitive. As the National Advisory Council on Women’s Educational Programs reported to the federal government in 1980, the sexual harassment of postsecondary students is an increasingly visible problem of great dimensions, which is correctly viewed as a form of illegal sex-based discrimination.

In addition to its possible legal consequences and to the more direct form of mental, emotional, or physical anguish caused to its victims, in a community like ours sexual harassment can seriously interfere with freedom of educational or social opportunity. After an experience of sexual harassment by a faculty member, administrator, or fellow student, for example, or even after hearing of another’s experience, a student may be inhibited from electing a particular course, or from seeking a staff member’s assistance, or from attending a social function conducted by the school or the student organization. Thus, not only the student who is victimized, but also the whole social and educational community, is harmed by incidents of sexual harassment.

Although sexual harassment in any situation is reprehensible, it must be a matter of particularly deep concern to an academic community in which students and faculty are related by strong bonds of intellectual dependence and trust. Further, the vulnerability of undergraduates to such harassment is particularly great, and the potential impact on them is particularly severe. Not only does sexual harassment betray the special bond between teacher and student, it also exploits unfairly the power inherent in an instructor’s relationship to a student. We believe that reaffirmation of a firm stand against sexual harassment and the establishment of procedures specifically designed to resolve complaints of sexual harassment are extremely important for the University.

**Treatment of Complaints**

The Administrative Office will call for a special committee to handle harassment complaints. The committee’s treatment of complaints will be guided by the following principles, which are intended to protect the legitimate interest of all persons.

Next, committee members will decide if there is any conflict of interest that requires any of them to withdraw from consideration of the complaint. The committee will then decide on a course of action.

Should the committee decide to take no action, the committee will inform the student and explain what, if any, other course of action the student might take.

Should the committee decide that the complaint requires formal institutional action (i.e. notification of the police) the committee will transmit the complaint directly to the President.

If a less serious complaint is judged to fall under the committee’s mandate, then one or more members of the committee, one of whom is a member of the faculty or the administration, will speak with the person(s) involved in order to obtain further information and report the results to the committee.

The committee will limit its informal investigation to what it deems necessary to resolve the complaint or to make a recommendation to the President. Should it appear necessary for the committee to address any persons other than the parties involved in the complaint, the committee will do so only after informing the involved parties.

After review, the committee may decide (1) that there is no basis on which to pursue the complaint, or (2) that the complaint has been resolved, or (3) that the complaint is to be forwarded with recommendations to the President. The President will inform the committee of the final disposition of complaints forwarded.

One responsible member of the committee will be in communication with the student making the complaint until the complaint is resolved. The student will be informed of general actions taken, although not of specific conversations held with the person named in the complaint.

If either the person making the complaint or the person named in the complaint is not satisfied with the recommendations of the committee, she or he may discuss the matter with the President.
Sexual Assault

An allegation of sexual assault must promptly be reported to the Director of Student Services who will, in turn, report the allegation to the Police Department. The University will not attempt to adjudicate allegations of felonious acts.

Compliance with the Reform Act of 1989

The University intends to comply with the Educational Reform Act of 1989. To this end it will publish the relevant specifications of the act in its student, staff and faculty handbooks and will urge its personnel to become familiar with such provisions of the Act as may apply to them or their duties and responsibilities. Personnel found in willful violation of the Act will face disciplinary action and may, in extreme cases, be permanently separated from the University.

Student Life

Our mission at Northwestern Polytechnic University is to provide a welcoming and supportive environment for students, while maximizing their opportunities for career growth and personal development. We believe that student life is not only an integral part of the campus community but also a fundamental part of the educational process. Student services at the University are designed to meet the needs of our student body. These include both academic and non-academic issues and activities. Many of our students work part- or full-time in local industries and come from a variety of social and ethnic backgrounds. As such, our services are tailored to meeting the needs and concerns of a mature and multicultural student body.

University Orientation

All new students are required to attend the new student orientation program offered before the beginning of each semester. The program includes on-campus assessment test activities, an orientation workshop, and other services provided to the new students. Orientation packages are distributed to the new students prior to the orientation workshop; all administrative staff members and representatives from the faculty and the student body welcome the new students at the workshop; presentation materials cover essential information for the students, including the facility and learning resources information, administrative services provided to the students, and important rules and policies for the students to stay focused on their academic objectives. The staff advisors also assist the new students to register in classes. International students are provided a health insurance plan and information on particular regulations they must observe in compliance with the Federal regulations for international students.

All NPU students are welcome to attend the orientation to welcome the new students and receive current university information.

Housing Assistance

The University provides several types of housing units for the students to choose from. Guaranteed housing is provided to all new students. However, certain housing units are assigned on a first-come-first-served basis. Students reside in the housing units with a full-semester commitment. Residents of student housing must be regularly enrolled, full-time NPU students. Room reservation is effective only after the required rent and deposit have been received by NPU’s Housing Service team.

The NPU Housing Services also provides information on a variety of nearby, well-maintained apartments. The NPU website provides the housing service information and online application form.

New applicants to NPU who require housing assistance should submit their housing applications (online) at least two months before they report to NPU. Current students are also eligible to receive housing services by submitting requests online.

Although applicants are given the opportunity to express preferences and housing officers will
make an effort to meet the applicants’ needs, no guarantee can be given that specific house, room, or roommate preferences can be met. It is recommended that students interested in dormitory living apply early to increase their chances of selecting desired units.

Transportation Service: Public transportation information is included in the Student Handbook posted on the Online Service Center. Airport pick-up service information is posted on the NPU website in the Student Services section under the Housing and Transportation Directory.

Non-academic Counseling

The Student Services Office offers assistance with personal and interpersonal issues such as relationships, cultural differences, assertiveness, and self-esteem. If a student needs a professional counselor, the Student Services Office will help the student find a suitable counselor. Additionally, the Student Services Office helps students with educational/vocational concerns such as coping with university life, academic performance, test anxiety, reentry adjustment, and determining life goals. Students are encouraged to seek assistance from a counselor in dealing with any problems that might affect their success at NPU.

Culture Immersion Workshops

The NPU student body reflects the international flavor of Silicon Valley. It includes both local and international students from more than twenty countries. To help international students adjust to the new environment, culture immersion workshops are conducted every semester, free of charge, and open to all interested students.

Professional Development Seminars

Offering professional development seminars is an integral part of the Student Services. The seminars are intended to enhance the students’ abilities in their professional lives – in cultural, communicative, and technical aspects. The seminar information is posted on the NPU website every semester. The seminar information is also e-mailed to the students each time.

Intercollegiate Activities

To broaden students’ learning experiences and interactions with other institutions, there have been exchange student activities with the School of Business and Information Management of Oulu University of Applied Sciences in Finland. Other international communities which refer students to NPU include universities in Kazakhstan, South Korea, Vietnam, Taiwan, and China.

The NPU table tennis team has also participated in regional intercollegiate table tennis tournaments and won championships in the past. The basketball team members have participated in Bay Area basketball tournaments sponsored by local organizations. Several other student clubs are also making contact with outside institutions and organizations for friendship building activities.

Career Placement Services

As a key component of Student Services, career placement services help the students in the following areas: (1) Prepare resumes and sharpen interview skills, (2) Conduct career seminars and job fairs, (3) Identify the students’ strengths and interests and provide career advice, (4) Provide internship opportunities to the students, and (5) Provide library materials and an online tool (via the NPU Online Service Center) for the students to gain access to various sources of job related information. The Career Center, in collaboration with the library, provides the students with access to a collection of books, articles, magazines, brochures, and videotapes about employment opportunities. The students may also use the computer facility in the Career Center for job searches. Employment information can be found on the online job posting board through the eCareer Center in the NPU Online Service Center.

The service provides career planning and job search assistance prior to and after students’ graduation.

Graduate students are encouraged to work with a Student Services Counselor on their resumes and career development plans in the early stages of their academic study.
* Student Handbooks

The NPU Student Handbook describes important policies and regulations that affect the students’ status at NPU. It also provides relevant information affecting the students’ lives during their studies at NPU.

The Student Handbook and the International Student Handbook are posted on the Online Service Center. In the New Student Orientation Workshop, the students are informed and receive handouts pointing to the online location for these handbooks. The handbooks complement the information contained in the University Catalog. All students are urged to read and refer to the information in the most current editions of both the student handbooks and the University Catalog - all available online.

* The Student Association

The Student Association is the voice of the student body at NPU; it enables students to maximize the social, vocational, and educational aspects of their learning experience. Students automatically become members of the Student Association when they register with NPU. All students are encouraged to support the Association’s activities.

The Association is governed by officers elected from officially registered students on campus. Elections are held annually. Officers elected include President, Vice President, Secretary, Treasurer, and a number of Directors. The officers represent the student body to plan and conduct the student activities and may voice their concerns or requests to the university administration. They ensure the students have a voice in the planning of extra-curricular activities. The Association is responsible for expressing student opinions on issues relevant to the University and for working to improve the educational process and university environment. Student volunteers work with the elected officers to conduct extracurricular activities. A designated administrator serves as the advisor to the Student Association. The Student Association, under the guidance of the advisor, conducts various extracurricular activities for the students every semester, such as field trips/tours, picnics, parties, sporting events, and intercollegiate activities.

* Student Clubs

The following are examples of the active extracurricular organizations on campus. These athletic, artistic, and culture-rich activities are the results of consorted efforts from three parties; namely, the student body, faculty, and the administrative staff members.

- Tennis Club
- Table Tennis Club
- Basketball Club
- Cricket Club
- Soccer Club
- Karate Club
- Swimming Club
- EZ English Club
- Marketing Club
- Volleyball Club
- Hiking Club
- Badminton Club
- Tai Chi Club
- Music Club
- Dance Club
- Photography Club
- Toastmasters Club
- CPA Club

Refer to the Student Association pages of the NPU website for information on the student clubs and special events information.

* Affiliation to Professional Societies

To expand and enrich student life on campus, NPU students are encouraged to get involved in a variety of professional organizations. Such involvement also takes the students a step closer to the professional world. Examples include activities sponsored by the IEEE local chapter and various other professional activities regularly held in Silicon Valley.

* NPU Student Branch of IEEE

The Institute of Electrical and Electronics Engineers, Inc. (IEEE) is the world’s largest technical professional society. A non-profit organization, IEEE promotes the development and application of electro-technology and applied sciences for the benefit of humanity, the advancement of the profession, and the well-being of its members. IEEE members participate in its activities in approximately 150 countries. The technical objectives of the IEEE focus on advancing the theory and practice of electrical, electronics and computer engineering and computer science.

NPU is proud to have a student branch of IEEE on campus and a group of students in the School of Engineering serves as the central committee to encourage participation of all students in IEEE
activities. The participants are able to connect with the latest technical information, research, career opportunities, and a community of innovators who inspire the students to strive for success in their chosen profession. This connection enables the engineering students to have convenient access to valuable IEEE publications and participate in organized IEEE activities, particularly the ones held in Silicon Valley. Several faculty members serve as senior advisors to enroll the students.

Students in the School of Business and Information Technology are encouraged to join at least one of the following professional organizations or others:

- Institute of Management Accountants
- American Institute of CPAs
- California Society of CPAs
- United States Association for Small Business and Entrepreneurship
- Project Management Institute

Refer to the NPU website for more information.

■ Alumni Association

The Alumni Association is made up of all NPU graduates. Playing an important role in the life of the University, the Alumni Association helps to build lasting ties between NPU graduates and the University, as well as broadens communication and mutual support among current and former students, faculty, staff, and the community. Members of the Association provide timely and invaluable input and advice to the University on a variety of topics, including curriculum development, industry trends, student mentoring, and career development. As such, it serves as a crucial link between the academic community and the outside world.

■ International Student Health Insurance

A health insurance plan is mandatory for all international students. An international student must carry a valid health insurance plan while enrolled at NPU. NPU contracts an experienced provider to carry a health insurance plan for international students.

■ Donations to the University

From time to time we receive calls from generous individuals, representing themselves or corporations, wishing to donate funds or items useful to the academic development of the University. We appreciate their consideration and altruistic action. Northwestern Polytechnic University enjoys tax-exempt status with the IRS; therefore, gifts of money and items of value are tax deductible. We encourage individuals to consult their personal or company tax advisors for details on how these gifts may benefit the giver as well as the University.

 Facilities

■ Campus Description

In accordance with the University's curricular emphasis on technology and business, NPU's main campus is located in a high-technology R&D and business development area in southern Fremont, occupying eight modern research and development building complexes and their surrounding areas.

The University is close to highways I-880 and I-680, conveniently accessible from the highways via Mission Boulevard and Warm Springs Boulevard. The fully landscaped and abundant parking areas provide smooth traffic flow and easy building access; the peaceful neighborhood provides an appropriate learning environment for the students. All buildings are also accessible to people using wheelchairs.

The facilities support academic teaching/learning and research and development activities, administrative functions, and students’ recreational activities. The buildings are equipped with central heating/air conditioning systems. The facilities include classrooms, laboratories, library, student study areas, student lunchroom and lounges, a Career Center, a
Student Association office, recreation areas, conference rooms, administrative and faculty offices, and a business park.

Each classroom has a temperature control unit and is equipped with an LCD projector connected to an instructor’s demo computer with access to the campus networks system and the internet, and a projection screen in addition to other standard classroom provisions. Overhead projectors and mobile TV/VCR sets are also available to the instructors. Designated staff prepare the classrooms before the classes start each day.

To expand professional quality sports facility services to the NPU members, the school has contracted with ClubSport - Fremont nearby to allow the NPU members access to its high-quality facilities with minimal cost.

**Health, Security, and Safety**

The University strives to provide students with a secure and safe environment. Classrooms and laboratories comply with the requirements of various government building codes, the Board of Health, and Fire Marshal regulations. Students are responsible for their own security and safety and must be considerate of other school members’ security and safety. Security monitor systems have been installed on campus to increase campus security.

**Teaching and Research Facilities**

NPU’s teaching, research, and laboratory facilities are equipped with state-of-the-art hardware and software tools. In keeping pace with the advancement of information technology, NPU’s IT Department provides a modern digital campus environment to the faculty, students, and administrative staff.

To support teaching activities, classrooms are set up at the beginning of each semester based on the hardware and software requirements for each course. Modern design, simulation, testing, and ERP tools are installed for the instructors to use for teaching. A number of classrooms are also equipped with computer systems and internet facility for the students to use. Practice laboratories are readied for the students to gain hands-on experience after class or in lab sessions.

**Computer Networks:** There are a variety of high-performance computers on campus to support teaching and learning, including high-capacity servers, advanced workstations, and modern PCs. Wireless and wired network connections for high-speed internet access are provided to the students on campus. The campus networks are connected to the internet via multiple T1 lines, allowing faculty and students access to electronic mail, file transfer, and the World Wide Web. Each student and faculty member has an individual computer account for accessing the NPU Online Service Center on or off campus, the intranet resources, and various servers.

**Examples of modern CAD/CAE tools** include the entire Cadence EDA tools suite, Synopsys Design Compilers, Xilinx and Altera design tools, Mentor Graphics tools, Synplicity and Lattice design and simulation tools, Specman tool, Vericity tool, Cilos tool, PSPICE and HSPICE simulators, SystemView, GSM Alliance Developer Program, VxWorks, ARM, MATLAB software packages, and MS Fortran PowerStation. XManager utility is also provided to support the students’ needs.

**Examples of available computer science teaching and learning software tools and packages** include Oracle server/client tools, Microsoft .NET Framework, Microsoft SQL server/client tools, Microsoft Visual Studio, JDK, MS Office, and various popular software QA and testing programs such as TUTOS, RTH, etc. In addition to the MS Windows system, Linux/Unix systems are also provided to the students for their learning needs. The embedded systems labs cover ARM, Windows CE, Linux MBED, Beagleboards, and the Android system.

**In order to provide the business students a real-world enterprise environment** to enhance their learning, SAP software is integrated into the business curriculum and the students gain hands-on experience with the software. The SAP Lab allows the students to practice SAP modules including accounting, financial management, project management, human resource management, marketing management, and operations management. Other accounting, auditing, and management tools are also provided to the students, such as Quicken, QuickBooks, Peachtree, Electronic Auditor, MS Project, SAS, SPSS, etc.
• **Learning Resources and Laboratories**

Designated learning laboratories are open with daily schedules for the students to conduct after-class hands-on practice as well as take laboratory courses. Practice focuses on the following:

- VLSI/SOC design
- DSP/multimedia and interface design
- ASIC/FPGA design
- Embedded systems design
- Computer networking, systems administration, and network security
- Database administration and database design
- e-Business, business logic design, and digital system development and implementation
- SAP (ERP, CRM, HR, PM, FIN/ACC, MKT, OM)
- Digital media and graphics

**Other applications:** The students also use the computer laboratory facility to do homework and projects in areas such as object-oriented design and programming, Unix/Linux system programming, Java programming, .NET web programming, .NET Windows programming, website design, e-business programming, software testing, digital media and graphics, business auditing, computer music, etc.

• **The University Library and Digital Campus**

The NPU administration strives to provide an up-to-date digital campus facility to the students and faculty to increase their learning/teaching effectiveness. The university library not only maintains traditional service functions but also provides commercially available digital libraries easily accessible online by the faculty and students.

The NPU Online Service Center (OSC) is the gateway for the faculty and students to access NPU’s unique online facility which the faculty members use to manage their courses; the students access the OSC for learning resources, personal records, career information, library information, and submitting online requests to the administrative staff. The NPU OSC is maintained by the NPU IT Department.

**Library Services**

The students are encouraged not only to learn from classes but also to pursue independent research by using resources provided by the library services. While NPU’s physical library has collections of books, journals, audio/visual materials, and other library items, its e-library subscribes to digital libraries, such as IEEE Computer Society Digital Library and ProQuest digital databases, which greatly increase the learning resources to its users. The library pages on the NPU website also incorporate sizable relevant information, conveniently provided by the vast World Wide Web, into the library’s online services, including links to the U.C. library system. For gaining access to other controlled online resources requiring membership or licenses, the NPU library seeks solutions in two ways: (1) by directly joining memberships and/or purchasing licenses and (2) by referring the faculty and the students to the Dr. Martin Luther King, Jr. Library in San Jose which is co-managed by the San Jose City government and the San Jose State University. The Dr. Martin Luther King, Jr. Library has been awarded “Library of the Year” by the Library Journal. Several of its librarians offer workshops on research methodology and related subjects to the NPU students. A number of NPU students reside in the San Jose area and can benefit greatly from the wealth of collections at that library.

For the purpose of developing the students’ professional skills, the collections at the NPU library and learning resource facility focus on electronics, computer, and business fields as well as general educational subjects. The NPU library provides the latest in resources for teaching and learning effectiveness. In addition to book items and audio/visual collections, the library subscribes to more than one hundred technical journals, magazines, and newspapers in business, sciences, and the electronics and computer areas.

Students are encouraged to keep abreast of developments in their fields by reading important professional journals. The University’s collections are steadily increasing in order to meet the changing needs of the programs and curricula. Most books circulate for one month.

The book stacks area is stocked with open-shelf books and periodical collections, freely
available to students, faculty, and staff. Library staff, as well as assistants in the library, are prepared to assist the visitors to the library.

The NPU Library welcomes suggestions from the faculty and students on new acquisitions.

In order to have access to more comprehensive collections, all degree-seeking students are encouraged to have library cards from other local major university libraries (e.g., University of California at Berkeley, San Jose State University, Stanford University, University of California at Santa Cruz, California State University at Hayward). Students can access many of these library systems via NPU’s network system. NPU encourages its students to use these libraries in order to broaden their learning and conduct in-depth research.

✦ NPU Online Service Center for Faculty and Students

Faculty members use the NPU Online Service Center as a tool to help them manage their courses online, including posting/updating their course syllabi and handout materials, keeping their students’ academic and attendance records, and posting assignments and instructions to their students. The Teaching Assistants may access the system to post homework related information for individual courses. They also assist the faculty members by searching for useful learning materials or website links and include them in the posted course material for students’ use. Faculty members and the teaching assistants can also send messages to their students through this online facility.

Each current student is assigned a computer account to access the Online Service Center. The system is designed such that the student user can have access to all general information but only his/her own personal data and academic records. Using this facility, a student may obtain his/her course-related information, check his/her own study plan, financial records, and attendance records. The student may also update his/her personal contact data online.

Internet technology has been widely used to not only increase learning resources accessibility to the students and faculty but also help the instructors and the administrators to monitor the students’ learning progress online.

✦ Audio/Visual Aids for American Language Learning

Audio/visual materials for improving American language skills are available for all NPU students who wish to improve their communication skills. Students may use the selected audio and videotapes and software programs and workstations to improve English pronunciation, grammar, spelling, conversation, etc. Scheduled communication workshops and related activities conducted by English language instructors provide additional assistance to the interested students.

◙ Audio/Video Taping

Students wishing to make video and/or audio recordings of lectures presented by NPU faculty members and/or visiting lecturers must obtain the written consent of the faculty members or lecturers. Students do not own any copyrights, etc., to such recordings.

The University’s e-broadcasting system has been developed to provide additional assistance to student learning. Recording of lectures, including voice and electronic data of each course, is filed and available for students to review to increase learning efficiency.
Academic Programs

NPU’s undergraduate and graduate programs are designed to prepare students for the practice of electrical engineering, computer engineering, computer science, and business administration at a professional level. In particular, the degree curricula are designed to keep pace with the development of Silicon Valley’s major industries, including electronics, computer engineering, information technology, enterprise management, and global business development. As Silicon Valley is a dynamic and fast changing high-technology hub where the only constant is fierce competition among the employers, the employers in the Valley are more demanding on workers’ qualifications. Therefore, job seekers in the Valley are required to be well prepared in their background training and have the understanding that continued education is a general requirement in the workplace.

NPU’s program committees in various disciplines hold regular meetings to ensure that the curriculum design and facility support in hardware and software can meet the industry standards. Furthermore, faculty members who teach major and related courses must have had previous or current industry experience and are equipped with up-to-date knowledge and skills in their teaching subjects.

Degree programs are offered by two schools: The School of Engineering and the School of Business and Information Technology. Each School offers degree programs at three levels: bachelor’s, master’s, and doctoral levels. The following are program information divided by School and, within each School, by degree level.

SCHOOL OF ENGINEERING

The School of Engineering offers degree programs in three disciplinary areas: Electrical Engineering, Computer Systems Engineering, and Computer Science. Each discipline is headed by a program chair. The School Dean, program chairs, advisory committees, as well as the faculty members of the School of Engineering are responsible for the School’s academic affairs. Practical applications are emphasized throughout the students’ learning process although theoretical background is taught in each course subject as fundamentals.

Purpose

Degree programs offered by the School of Engineering are designed for students who intend to become professional engineers in the high-technology electronics or computer industry, as well as for those who desire a modern, general education based on the problems and the promises of a technological society. The environment in which students are educated is as important in shaping their future as their classroom experiences. The School of Engineering offers a friendly atmosphere and a variety of academic programs that have made NPU engineering graduates highly valued in high-tech firms and Bay Area communities.

Faculty

All NPU engineering faculty members possess the following qualities: advanced degrees earned in engineering and science disciplines, high-tech work experience, and enthusiasm in teaching and helping the students. Engineering is not a homogeneous discipline; it requires many special talents. Some faculty members in the School are goal-oriented designers, concerned with teaching students how to solve problems - how to synthesize relevant information and ideas and apply them in a creative, feasible design. Other engineering faculty members function more typically as method-oriented scientists, using the techniques of their disciplines in their teaching and research to investigate various natural and artificial phenomena.

Objectives

The course offerings and hands-on experiences offered to the engineering students aim to achieve the following objectives:

- To provide each student a goal-oriented education by tailoring each student’s study plan based on the student’s background and interests.
To provide in-depth professional training with state-of-the-art learning resources to the student.

To provide relevant laboratory experience throughout each program as an integral part of the education.

To provide undergraduate students well-rounded and balanced undergraduate studies.

To nurture a learning environment which leads to professional values recognizing high quality and integrity in a true engineer.

To provide graduate students an opportunity to pursue advanced training and professional development to practice their profession with increased competence.

Undergraduate Programs

The School of Engineering offers three undergraduate degree programs:

- Bachelor of Science in Electrical Engineering (BSEE);
- Bachelor of Science in Computer Systems Engineering (BSCSE);
- Bachelor of Science in Computer Science (BSCS).

 Credential Requirements

The undergraduate programs accept qualified high school graduates and college transfer students.

- Freshmen Applicants: Undergraduate applicants who have not completed at least 30 semester units of college credit are considered freshmen.

 Application Requirements

To apply for admission into a bachelor’s degree program, the applicant is required to submit the following to the NPU Admissions Office: (1) an Application Form (online or hardcopy), (2) a nonrefundable application fee, (3) official transcripts from previously attended colleges; freshman applicant is required to submit his/her official high school transcript and document certifying high school completion, (4) an English proficiency document is required for non-native English speakers: An official transcript with English course records or TOEFL/IELTS score report or equivalent will suffice. NPU’s English assessment exam, when available, can be taken by the applicant to meet this requirement. See English Proficiency Requirement below for detailed information on the English entrance requirement, and (5) Entrance assessment tests: SAT-I for freshman applicants. Applicants have the option to take the on-campus equivalent assessment tests. The scores are for reference purpose and will not affect the admission evaluation for the applicants. (6) Resumes are required for applicants interested in applying for scholarships.

- International Students: In addition to the above general application requirements, an international applicant is also required to submit the following additional documents: (a) a financial support document – either the applicant’s bank statement or a certified affidavit of support (form I-134 or equivalent) from a financial sponsor indicating that a minimum amount of $25,000 is available for the applicant to pursue his/her study in the first academic year at NPU, (b) a transfer student (from a U.S. institution) is required to submit a photocopy of his/her previous I-20 form and request the other school’s international student advisor to complete the International Student Transfer Record form for NPU and conduct the required SEVIS transfer process, and (c) upon reporting to NPU, photocopies of the student’s passport, visa, and I-94 (admission & departure) document. The student will be asked to show an identification document attesting his/her official name, if applicable.

GED: NPU recognizes the General Educational Development (GED) tests and accepts the GED graduates.

 English Proficiency Requirement

Non-native English speakers are considered meeting the entrance English proficiency requirement if they meet any of the following requirements:

- Used English as the official language and completed study in a high school or college degree program,
- Has completed a college English credit course in an English speaking institution,
- Has submitted an official TOEFL or IELTS test score report to NPU and the score meets
the entrance English requirement set by the NPU admissions office.

The TOEFL institution code for NPU is 9626.

Conditional acceptance may be granted to applicants whose TOEFL/IELTS scores or other equivalent records do not meet the above requirement but have reached intermediate level of the American Language classes (ESL) offered by NPU. These students will be required to enroll in ESL classes until they pass the advanced level ESL classes before enrolling in degree courses.

NPU’s English Placement Examination (EPE): An applicant may be offered the option to take NPU’s English Placement Examination in place of the standardized tests. The exam result affects the applicant’s admission status. A fee will be charged for this service.

NPU may accept the English assessment reports from a few U.S. English language institutions recognized by major universities in the U.S.

Entrance Assessment Test

The entrance assessment test, SAT-I, is required for freshmen only and for reference purpose. The score will not affect admission evaluation for the applicants. Freshman students have the option to take the on-campus equivalent test in place of SAT-I before the new semester starts. The cost for taking the on-campus SAT-I equivalent assessment test is $50.

NPU’s Institution Code for reporting the SAT scores is 4335.

Students who are required to enroll in English as a Second Language (ESL) classes will be allowed to take the entrance assessment tests after they have passed the advanced level ESL classes.

General Background Requirements for Pursuing Bachelor’s Degrees

Remedial courses are not offered at NPU except for English as a Second Language classes. Applicants to all programs are required to have completed pre-calculus subjects in algebra, trigonometry, and geometry prior to admission into any program.

Transfer of Credit from Other Institutions

Course credit earned at other institutions of higher education may be transferable. Credit transfer is made by the admission evaluators while conducting the admission evaluation. The following statements apply to all transfer credits:

-- The NPU Admissions Office must receive all official transcripts prior to the student’s joining a degree program. Without preapproval, transcripts received after the student joins NPU cannot be used in transferring credits, except for records from the term immediately preceding the student’s starting semester at NPU.
-- The student was officially enrolled in the course.
-- When evaluating any foreign transcript, the admission evaluators may accept or transfer credit based on their knowledge of the course contents in comparison with similar courses offered in the U.S.
-- Courses for transfer to NPU may not be completed concurrently at another institution while attending NPU.
-- Credits are transferred by the following conversion:

Definition of a Trimester/Semester Unit:

One trimester/semester credit hour equals, at a minimum, 15 classroom hours of lecture, 30 hours of laboratory, and 45 hours of practicum.

Conversion Factor:

1 quarter unit = 0.66 trimester/semester unit

Grades Required for Transfer Credit

In the bachelor's degree programs, courses completed with passing grades are transferable in most cases. However, the Admissions Committee has the authority to make the evaluation on an individual basis and make its decision based on its expertise in credential evaluation.

Transfer of Credit

Undergraduate program courses are numbered from the 100s to 400s. Courses in the 100s and
200s are lower-division courses; courses numbered in the 300s and 400s are upper-division courses.

A. Transfer of Lower-Division Credit

Courses that are considered lower division are courses completed in the freshman or sophomore years of a four-year undergraduate program of study or courses completed at a two-year junior college.

There is no limitation on lower-division transfer credits, but the credit transfer rules must be followed. The following are additional rules for transferring lower-division credit:

- Lower-division courses may not be used to waive upper-division courses.
- College English courses taken at an institution where English is not an official language cannot be transferred for general education credit.

B. Transfer of Upper-Division Credit

In order to transfer as upper division credit, the course must be at the junior or senior level of an accredited or state approved four-year college program of study.

A maximum of 20 upper-division units may be transferred to meet the graduation requirements of the program.

Types of Undergraduate Transfer Credit

NPU accepts undergraduate transfer credit from the following types of courses and schools:

- Junior colleges or courses completed in a 4-year undergraduate program.
- AP course credit earned which is considered to be equivalent to college credit.
- Vocational/Technical Schools
  Courses from U.S. technical/vocational institutions are transferable for lower-division credit only if the school’s curriculum leads to an associate’s degree, and the institution is accredited.
- Credit by Examination - CLEP
  NPU grants credit to those students who pass examinations in English, natural sciences, humanities, and social science subjects offered by the College Level Examination Program (CLEP). Only General Education credits will be granted. Students should consult with the Admissions Office for information on acceptable CLEP scores and units. The CLEP Institution Code for NPU is 7569.
- Transfer of Credit from Defense Activity for Nontraditional Education Support (DANTES) and Military Services
  Credits will be allowed for DANTES Subject Standardized Tests and professional military education evaluated by the American Council on Education (ACE). The maximum transferable lower-division and upper-division credits follow the same policies as specified in the above sections on lower-division and upper-division credit transfers. NPU’s evaluation of an application is made prior to the student’s admission to a program unless otherwise approved by the authorizing VA office. The DANTES Institution Code for NPU is 9670.

Proficiency Exams: A student may be required to demonstrate proficiency in a subject taken more than ten years prior to application with NPU by successful completion of a proficiency examination.

Tuition

Tuition is charged per unit. Tuition for courses taken to fulfill the undergraduate degree requirement is $330.00 per unit.

- Tuition per Unit for Courses Audited
  For courses audited (without earning credit), the tuition is half the regular unit rate. Not all courses can be taken with “audit” status.

- Estimated Semester Cost of Tuition for a Full-Time Student
  The tuition is $4,950 for an undergraduate student taking 15 units per semester.

Graduation Requirements

Each program requires coursework in the following areas:

(1) General education,
(2) Major study, and
(3) Electives.
An overall G.P.A. of 2.0 or better and a D-grade or higher on all courses towards the degree are required. The student must be in good standing with the University and have an approved petition to graduate on file.

1. General Education Requirements

All undergraduate students in the engineering programs must complete at least 39 semester units in general education (GE). GE courses cover subjects in the following areas: English and communications, humanities, engineering mathematics and natural sciences, and social sciences.

Examples of courses that fall under each area of general education are as follows:

- A. English and Communications: Expository Writing, Speech, Communication, Composition, Creative Writing.
- B. Humanities: Foreign Languages (excluding native language), Philosophy, Music Appreciation, Fine Art, Religion.
- C. Mathematics and Natural Sciences: Calculus, Statistics, Physical Sciences, Physics, Biological Science.

2. Major Study Requirements

Each undergraduate program is designed to include a series of major study coursework. The courses provide the student the foundation and training in electronics and circuits, computer technology, and science areas.

Professional Development: The Professional Development course prepares the engineering students for their professional careers.

3. Electives

Electives are built in each program to promote breadth as well as depth in the study program. The student must complete a sufficient number of elective courses to meet the graduation requirements.

The following is a suggested study flow for the first five semesters of any undergraduate engineering program, followed by the description of the objectives and the graduation requirements for each undergraduate engineering degree program.

Course numbers: Courses numbered in the 100s and 200s are lower-division courses; courses numbered in the 300s and 400s are upper-division courses.

■ GE and Lower-Division Courses

Study Flow

(For all three undergraduate engineering programs)

Suggested course sequence in the first five semesters:

<table>
<thead>
<tr>
<th>Course</th>
<th>Description and Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL101</td>
<td>Expository Writing</td>
</tr>
<tr>
<td>IT200</td>
<td>Introduction to Computers and Digital Media</td>
</tr>
<tr>
<td>MATH201</td>
<td>Calculus – I</td>
</tr>
<tr>
<td>MATH208</td>
<td>Statistics</td>
</tr>
<tr>
<td>PHYS101</td>
<td>Introduction to Physical Sciences</td>
</tr>
<tr>
<td>CS200</td>
<td>Discrete Logic: required for BSCS program only</td>
</tr>
<tr>
<td>CS230</td>
<td>Introduction to Unix/Linux, and lab course CS230L</td>
</tr>
<tr>
<td>CS230L</td>
<td></td>
</tr>
<tr>
<td>ENGL102</td>
<td>Critical Thinking</td>
</tr>
<tr>
<td>HU210</td>
<td>Introduction to Philosophy</td>
</tr>
<tr>
<td>MATH202</td>
<td>Calculus – II</td>
</tr>
<tr>
<td>HU280</td>
<td>Principles of Ethics</td>
</tr>
<tr>
<td>MATH205</td>
<td>Differential Equations</td>
</tr>
<tr>
<td>SOC201</td>
<td>California History</td>
</tr>
<tr>
<td>SOC245</td>
<td>Health Psychology</td>
</tr>
<tr>
<td>SOC270</td>
<td>Early American History</td>
</tr>
<tr>
<td>EE205</td>
<td>Fundamentals of Digital Electronics, and lab course EE205L</td>
</tr>
<tr>
<td>HU820</td>
<td>Principles of Ethics</td>
</tr>
<tr>
<td>MATH203</td>
<td>Linear Algebra</td>
</tr>
<tr>
<td>MATH204</td>
<td>Program Design and Analysis in C Language, and lab course CS204L</td>
</tr>
<tr>
<td>HU115</td>
<td>Public Speaking</td>
</tr>
<tr>
<td>PHYS201</td>
<td>Physics – I, and lab course PHYS201L</td>
</tr>
<tr>
<td>SOC201</td>
<td>California History</td>
</tr>
<tr>
<td>SOC245</td>
<td>Health Psychology</td>
</tr>
<tr>
<td>PHYS202</td>
<td>Physics – II, and Lab course PHYS202L</td>
</tr>
<tr>
<td>EE205</td>
<td>Fundamentals of Digital Electronics, and lab course EE205L</td>
</tr>
<tr>
<td>HU280</td>
<td>Principles of Ethics</td>
</tr>
</tbody>
</table>

Begin to take upper-division major courses and electives
The following are descriptions of the undergraduate engineering programs.

**Bachelor of Science in Electrical Engineering (BSEE)**

**Objectives:** The Bachelor of Science in Electrical Engineering program is designed to provide the student with the analytic skills necessary for active problem solving and innovative applications. Analysis is concerned with the formulation and solving of physical and electrical models. The student learns engineering theory and uses industry standard circuit design tools to develop skills in practical approaches to real-world engineering systems and problem solving. After completing the undergraduate degree, a student is also prepared to enter an advanced degree program in an electrical engineering related field if he/she desires.

**Graduation Requirements:** A minimum of 136 units are required for graduation. They include the following:

1) **39 units of general education courses** including 12 units in English and communications, 9 units in humanities, 9 units in mathematics and natural sciences, and 9 units in social sciences,
2) **67 units of major courses,** and
3) **30 units of electives.**

### BSEE Curriculum

(Total of 136 units)

1. **General Education (minimum 39 units)**

The purpose of general education is to give breadth to the student’s education. With a general background in English and communications, humanities, mathematics and natural sciences, and the social sciences, the student will be prepared for his/her roles both in society and at work. Students who have not completed the general education requirements upon entering a degree program at NPU are required to observe the following curriculum to meet the general education requirements.

(a) **English and Communications** (12 units)

(ENGL101 is a required course. Other listed courses are suggested subjects.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL101</td>
<td>Expository Writing (3)</td>
</tr>
<tr>
<td>ENGL102</td>
<td>Critical Thinking (3)</td>
</tr>
<tr>
<td>ENGL115</td>
<td>Public Speaking (3)</td>
</tr>
<tr>
<td>ENGL210</td>
<td>Intercultural Communication (3)</td>
</tr>
</tbody>
</table>

(b) **Humanities** (9 units)

(The following are suggested subjects.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>HU210</td>
<td>Introduction to Philosophy (3)</td>
</tr>
<tr>
<td>HU240</td>
<td>Music Appreciation (3)</td>
</tr>
<tr>
<td>HU280</td>
<td>Principles of Ethics (3)</td>
</tr>
</tbody>
</table>

(c) **Mathematics and Natural Sciences** (9 units)

(MATH201 and MATH208 are required courses. PHYS101 is a suggested subject.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS101</td>
<td>Introduction to Physical Sciences (3)</td>
</tr>
<tr>
<td>MATH201</td>
<td>Calculus – I (3)</td>
</tr>
<tr>
<td>MATH208</td>
<td>Statistics (3)</td>
</tr>
</tbody>
</table>

(d) **Social Sciences** (9 units)

(The following are suggested subjects.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOC201</td>
<td>California History (3)</td>
</tr>
<tr>
<td>SOC245</td>
<td>Health Psychology (3)</td>
</tr>
<tr>
<td>SOC270</td>
<td>Early American History (3)</td>
</tr>
</tbody>
</table>
2. Major Requirements (minimum 67 units)

(Engineering mathematics and sciences, computer science basics, electrical and electronics engineering: a course to prepare students for professional career)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT200</td>
<td>Introduction to Computers and Digital Media</td>
<td>3</td>
</tr>
<tr>
<td>MATH202</td>
<td>Calculus – II</td>
<td>3</td>
</tr>
<tr>
<td>MATH203</td>
<td>Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH205</td>
<td>Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>PHYS201</td>
<td>Physics – I</td>
<td>3</td>
</tr>
<tr>
<td>PHYS201L</td>
<td>Physics Lab – I</td>
<td>1</td>
</tr>
<tr>
<td>PHYS202</td>
<td>Physics – II</td>
<td>3</td>
</tr>
<tr>
<td>PHYS202L</td>
<td>Physics Lab – II</td>
<td>1</td>
</tr>
<tr>
<td>CS204</td>
<td>Program Design and Analysis in C Language</td>
<td>3</td>
</tr>
<tr>
<td>CS204L</td>
<td>C Programming Lab</td>
<td>1</td>
</tr>
<tr>
<td>CS230</td>
<td>Introduction to Unix/Linux</td>
<td>3</td>
</tr>
<tr>
<td>CS230L</td>
<td>Unix/Linux Lab – I</td>
<td>1</td>
</tr>
<tr>
<td>EE205</td>
<td>Fundamentals of Digital Electronics</td>
<td>3</td>
</tr>
<tr>
<td>EE205L</td>
<td>Digital Electronics Lab – I</td>
<td>1</td>
</tr>
<tr>
<td>EE300</td>
<td>Circuit Theory – I</td>
<td>3</td>
</tr>
<tr>
<td>EE301</td>
<td>Circuit Theory – II</td>
<td>3</td>
</tr>
<tr>
<td>EE302</td>
<td>Fundamentals of Analog Electronics</td>
<td>3</td>
</tr>
<tr>
<td>EE302L</td>
<td>Analog Electronics Lab</td>
<td>1</td>
</tr>
<tr>
<td>EE323</td>
<td>Logic Design</td>
<td>3</td>
</tr>
<tr>
<td>EE323L</td>
<td>Digital Electronics Lab – II</td>
<td>1</td>
</tr>
<tr>
<td>PHYS301</td>
<td>Introduction to Device Physics</td>
<td>3</td>
</tr>
<tr>
<td>BUS445</td>
<td>Professional Development</td>
<td>3</td>
</tr>
<tr>
<td>EE450</td>
<td>Systems Analysis and Simulations</td>
<td>3</td>
</tr>
<tr>
<td>EE453</td>
<td>Modern Software Techniques for Electrical Engineering</td>
<td>3</td>
</tr>
<tr>
<td>EE461</td>
<td>Digital Design and HDL</td>
<td>3</td>
</tr>
<tr>
<td>EE468</td>
<td>Microelectronics Circuit Design and Analysis</td>
<td>3</td>
</tr>
<tr>
<td>EE488</td>
<td>Computer Architecture</td>
<td>3</td>
</tr>
</tbody>
</table>

3. Electives (minimum 30 units)

The student may select courses in any discipline to fulfill this requirement to promote breadth as well as depth in their study program. Course prerequisite requirements must be met. When applicable, the student may take curricular practicum courses and engage in practical training to work on company projects which are directly related to the student’s course of study. Students interested in research and development work may select to enroll in the Senior Design Project course series and work under the guidance of a project advisor. Detailed course requirements for the Senior Design Project course series are posted on the Online Service Center.
Bachelor of Science in Computer Systems Engineering (BSCSE)

Objectives: The Bachelor of Science in Computer Systems Engineering program is designed to equip the student with a strong background in computer systems, emphasizing both hardware and software. The student acquires skills in the design and analysis of computer systems as well as develops skills for programming and designing software capable of solving scientific and engineering problems. After completing the undergraduate degree, a student is also prepared to enter an advanced degree program in a computer systems engineering related field if he/she desires.

Graduation Requirements: A minimum of 134 units are required for graduation. They include the following:

1) **39 units of general education courses** including 12 units in English and communications, 9 units in humanities, 9 units in mathematics and natural sciences, and 9 units in social sciences,
2) **62 units of major courses**, and
3) **33 units of electives**.

**BSCSE Curriculum**

(Total of 134 units)

1. **General Education (minimum 39 units)**

The purpose of general education is to give breadth to the student’s education. With a general background in English and communications, humanities, mathematics and natural sciences, and the social sciences, the student will be prepared for his/her roles both in society and at work. Students who have not completed the general education requirements upon entering a degree program at NPU are required to observe the following curriculum to meet the general education requirements.

(a) **English and Communications** (12 units)

(ENGL101 is a required course. Other listed courses are suggested subjects.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL101</td>
<td>Expository Writing</td>
<td>(3)</td>
</tr>
<tr>
<td>ENGL102</td>
<td>Critical Thinking</td>
<td>(3)</td>
</tr>
<tr>
<td>ENGL115</td>
<td>Public Speaking</td>
<td>(3)</td>
</tr>
<tr>
<td>ENGL210</td>
<td>Intercultural Communication</td>
<td>(3)</td>
</tr>
</tbody>
</table>

(b) **Humanities** (9 units)

(The following are suggested subjects.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>HU210</td>
<td>Introduction to Philosophy</td>
<td>(3)</td>
</tr>
<tr>
<td>HU240</td>
<td>Music Appreciation</td>
<td>(3)</td>
</tr>
<tr>
<td>HU280</td>
<td>Principles of Ethics</td>
<td>(3)</td>
</tr>
</tbody>
</table>

(c) **Mathematics and Natural Sciences** (9 units)

(MATH201 and MATH208 are required courses. PHYS101 is a suggested subject.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS101</td>
<td>Introduction to Physical Sciences</td>
<td>(3)</td>
</tr>
<tr>
<td>MATH201</td>
<td>Calculus – I</td>
<td>(3)</td>
</tr>
<tr>
<td>MATH208</td>
<td>Statistics</td>
<td>(3)</td>
</tr>
</tbody>
</table>
(d) **Social Sciences** (9 units)
(The following are suggested subjects.)

SOC201 California History (3)
SOC245 Health Psychology (3)
SOC270 Early American History (3)

2. **Major Requirements (minimum 62 units)**

(Engineering mathematics and sciences, electronics engineering, computer science and computer engineering; a course to prepare the student for professional career)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT200</td>
<td>Introduction to Computers and Digital Media</td>
<td>(3)</td>
</tr>
<tr>
<td>MATH202</td>
<td>Calculus – II</td>
<td>(3)</td>
</tr>
<tr>
<td>MATH203</td>
<td>Linear Algebra</td>
<td>(3)</td>
</tr>
<tr>
<td>MATH205</td>
<td>Differential Equations</td>
<td>(3)</td>
</tr>
<tr>
<td>PHYS201</td>
<td>Physics – I</td>
<td>(3)</td>
</tr>
<tr>
<td>PHYS201L</td>
<td>Physics Lab – I</td>
<td>(1)</td>
</tr>
<tr>
<td>PHYS202</td>
<td>Physics – II</td>
<td>(3)</td>
</tr>
<tr>
<td>PHYS202L</td>
<td>Physics Lab – II</td>
<td>(1)</td>
</tr>
<tr>
<td>CS204</td>
<td>Program Design and Analysis in C Language</td>
<td>(3)</td>
</tr>
<tr>
<td>CS204L</td>
<td>C Programming Lab</td>
<td>(1)</td>
</tr>
<tr>
<td>CS230</td>
<td>Introduction to Unix/Linux</td>
<td>(3)</td>
</tr>
<tr>
<td>CS230L</td>
<td>Unix/Linux Lab – I</td>
<td>(1)</td>
</tr>
<tr>
<td>EE205</td>
<td>Fundamentals of Digital Electronics</td>
<td>(3)</td>
</tr>
<tr>
<td>EE205L</td>
<td>Digital Electronics Lab – I</td>
<td>(1)</td>
</tr>
<tr>
<td>CS350</td>
<td>Data Structures</td>
<td>(3)</td>
</tr>
<tr>
<td>CS350L</td>
<td>Data Structures Lab</td>
<td>(1)</td>
</tr>
<tr>
<td>CS360</td>
<td>Object-oriented Programming in C++</td>
<td>(3)</td>
</tr>
<tr>
<td>CS360L</td>
<td>Object-oriented Programming in C++ Lab</td>
<td>(1)</td>
</tr>
<tr>
<td>CS380</td>
<td>Introduction to Operating Systems</td>
<td>(3)</td>
</tr>
<tr>
<td>EE323</td>
<td>Logic Design</td>
<td>(3)</td>
</tr>
<tr>
<td>EE323L</td>
<td>Digital Electronics Lab – II</td>
<td>(1)</td>
</tr>
<tr>
<td>BUS445</td>
<td>Professional Development</td>
<td>(3)</td>
</tr>
<tr>
<td>CE450</td>
<td>Fundamentals of Embedded Engineering</td>
<td>(3)</td>
</tr>
<tr>
<td>CS470</td>
<td>Network Engineering and Management</td>
<td>(3)</td>
</tr>
<tr>
<td>EE461</td>
<td>Digital Design and HDL</td>
<td>(3)</td>
</tr>
<tr>
<td>EE488</td>
<td>Computer Architecture</td>
<td>(3)</td>
</tr>
</tbody>
</table>

3. **Electives (minimum 33 units)**

The student may select courses in any discipline to fulfill this requirement to promote breadth as well as depth in their study program. Course prerequisite requirements must be met. When applicable, the student may take curricular practicum courses and engage in practical training to work on company projects which are directly related to the student’s course of study. Students interested in research and development work may select to enroll in the Senior Design Project course series and work under the guidance of a project advisor. Detailed course requirements for the Senior Design Project course series are posted on the Online Service Center.
Bachelor of Science in Computer Science (BSCS)

Objectives: The Bachelor of Science in Computer Science curriculum is designed to provide in-depth professional training in a range of current computer science subjects, including structured programming, object-oriented analysis and program design, computer organization principles and industry-wide operating systems, database principles and applications, and principles of computer networks. It is designed to equip the student with both a theoretical background and hands-on experience. The curriculum provides training in software engineering and prepares the students for employment in computer software related areas, such as computer software design and development, and computer software applications in computer networks and internet systems. The computer training will enable the students to work with computers as programmers, program and/or systems analysts, software engineers, computer systems administrators, database developers or administrators, internet application software engineers, and technical program managers. After completing the undergraduate degree, a student is also prepared to enter an advanced degree program in a computer science related field if he/she desires.

Graduation Requirements: A minimum of 129 units are required for graduation. They include the following:

1) **39 units of general education courses** including 12 units in English and communications, 9 units in humanities, 9 units in mathematics and natural sciences, and 9 units in social sciences,
2) **71 units of major courses**, and
3) **19 units of electives**.

BSCS Curriculum
(Total 129 units)

1. General Education (minimum 39 units)

The purpose of general education is to give breadth to the student’s education. With a general background in English and communications, humanities, mathematics, natural sciences, and the social sciences, the student will be prepared for his/her roles both in society and at work. Students who have not completed the general education requirements upon entering a degree program at NPU are required to observe the following curriculum to meet the general education requirements.

(b) **English and Communications** (12 units)

(ENGL101 is a required course. Other listed courses are suggested subjects.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL101</td>
<td>Expository Writing</td>
<td>(3)</td>
</tr>
<tr>
<td>ENGL102</td>
<td>Critical Thinking</td>
<td>(3)</td>
</tr>
<tr>
<td>ENGL115</td>
<td>Public Speaking</td>
<td>(3)</td>
</tr>
<tr>
<td>ENGL210</td>
<td>Intercultural Communication</td>
<td>(3)</td>
</tr>
</tbody>
</table>

(c) **Humanities** (9 units)

(The following are suggested subjects.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>HU210</td>
<td>Introduction to Philosophy</td>
<td>(3)</td>
</tr>
<tr>
<td>HU240</td>
<td>Music Appreciation</td>
<td>(3)</td>
</tr>
<tr>
<td>HU280</td>
<td>Principles of Ethics</td>
<td>(3)</td>
</tr>
</tbody>
</table>

(d) **Mathematics and Natural Sciences** (9 units)

(MATH201 and MATH208 are required courses. PHYS101 is a suggested subject.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS101</td>
<td>Introduction to Physical Sciences</td>
<td>(3)</td>
</tr>
<tr>
<td>MATH201</td>
<td>Calculus – I</td>
<td>(3)</td>
</tr>
<tr>
<td>MATH208</td>
<td>Statistics</td>
<td>(3)</td>
</tr>
</tbody>
</table>
(e) **Social Sciences** (9 units)
(The following are suggested subjects.)
SOC201 California History (3)
SOC245 Health Psychology (3)
SOC270 Early American History (3)

2. **Major Requirements (minimum 71 units)**
[Engineering mathematics, science, digital circuits basics, and computer science; a course to prepare for professional career]

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT200</td>
<td>Introduction to Computers and Digital Media</td>
<td>(3)</td>
</tr>
<tr>
<td>MATH202</td>
<td>Calculus – II</td>
<td>(3)</td>
</tr>
<tr>
<td>MATH203</td>
<td>Linear Algebra</td>
<td>(3)</td>
</tr>
<tr>
<td>MATH205</td>
<td>Differential Equations</td>
<td>(3)</td>
</tr>
<tr>
<td>PHYS201</td>
<td>Physics – I</td>
<td>(3)</td>
</tr>
<tr>
<td>PHYS201L</td>
<td>Physics Lab – I</td>
<td>(1)</td>
</tr>
<tr>
<td>PHYS202</td>
<td>Physics – II</td>
<td>(3)</td>
</tr>
<tr>
<td>PHYS202L</td>
<td>Physics Lab – II</td>
<td>(1)</td>
</tr>
<tr>
<td>CS200</td>
<td>Discrete Logic</td>
<td>(3)</td>
</tr>
<tr>
<td>CS204</td>
<td>Program Design and Analysis in C Language</td>
<td>(3)</td>
</tr>
<tr>
<td>CS204L</td>
<td>C Programming Lab</td>
<td>(1)</td>
</tr>
<tr>
<td>CS230</td>
<td>Introduction to Unix/Linux</td>
<td>(3)</td>
</tr>
<tr>
<td>CS230L</td>
<td>Unix/Linux Lab – I</td>
<td>(1)</td>
</tr>
<tr>
<td>EE205</td>
<td>Fundamentals of Digital Electronics</td>
<td>(3)</td>
</tr>
<tr>
<td>EE205L</td>
<td>Digital Electronics Lab – I</td>
<td>(1)</td>
</tr>
<tr>
<td>CE305</td>
<td>Computer Organization</td>
<td>(3)</td>
</tr>
<tr>
<td>CS350</td>
<td>Data Structures</td>
<td>(3)</td>
</tr>
<tr>
<td>CS350L</td>
<td>Data Structures Lab</td>
<td>(1)</td>
</tr>
<tr>
<td>CS360</td>
<td>Object-oriented Programming in C++</td>
<td>(3)</td>
</tr>
<tr>
<td>CS360L</td>
<td>Object-oriented Programming in C++ Lab</td>
<td>(1)</td>
</tr>
<tr>
<td>CS380</td>
<td>Introduction to Operating Systems</td>
<td>(3)</td>
</tr>
<tr>
<td>CS385</td>
<td>Unix/Linux Shell Scripting</td>
<td>(3)</td>
</tr>
<tr>
<td>CS385L</td>
<td>Unix/Linux Lab – II</td>
<td>(1)</td>
</tr>
<tr>
<td>BUS445</td>
<td>Professional Development</td>
<td>(3)</td>
</tr>
<tr>
<td>CE450</td>
<td>Fundamentals of Embedded Engineering</td>
<td>(3)</td>
</tr>
<tr>
<td>CS453</td>
<td>Compiler Design</td>
<td>(3)</td>
</tr>
<tr>
<td>CS457</td>
<td>Data Modeling and Implementation Techniques</td>
<td>(3)</td>
</tr>
<tr>
<td>CS470</td>
<td>Network Engineering and Management</td>
<td>(3)</td>
</tr>
<tr>
<td>CS480</td>
<td>Java and Internet Applications</td>
<td>(3)</td>
</tr>
</tbody>
</table>

3. **Electives (minimum 19 units)**
The student may select courses in any discipline to fulfill this requirement to promote breadth as well as depth in their study program. Course prerequisite requirements must be met. When applicable, the student may take curricular practicum courses and engage in practical training to work on company projects which are directly related to the student’s course of study. Students interested in research and development work may select to enroll in the Senior Design Project course series and work under the guidance of a project advisor. Detailed course requirements for the Senior Design Project course series are posted on the Online Service Center.
Course Descriptions
Undergraduate Degree Programs, School of Engineering

For undergraduate programs, lower division courses are numbered in the 100s and 200s, and upper division courses are numbered in the 300s and 400s.

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Description</th>
<th>Course No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>100-199</td>
<td>Freshman level courses</td>
<td>200-299</td>
<td>Sophomore level courses</td>
</tr>
<tr>
<td>300-399</td>
<td>Junior level courses</td>
<td>400-499</td>
<td>Senior level courses</td>
</tr>
</tbody>
</table>

Courses are listed by subject: Biological Science and Bioengineering, Business (General), Computer Engineering, Computer Science, Curricular Practicum, Electrical Engineering, English, Humanities, Information Technology, Mathematics, Physics and Physical Sciences, and Social Science.

Each course description is followed by its prerequisite information expressed in course numbers.

Each 1-unit lab course requires at least 2 hours of lab work each week. Each 1 unit of a practicum course requires at least 45 hours of practical experience related to the student’s program curriculum.

Bioengineering

BE450/G Introduction to Bioengineering (3 units)
This course presents an overview of the bioengineering and biotech fields. It is intended to build a solid foundation for students who are interested in exploring emerging bioengineering fields such as bioinformatics and biometrics. Topics include fundamentals of biology, cell biology, genes and proteins, molecular genetics, the impact of modern biology on science and medicine, biosensors, biochips, bioinstrumentation, computer-aided diagnosis and biometrics.
Prerequisite: MATH208

Business (general courses)

BUS400 Business Communication (3 units)
This course instructs and develops business communication skills that are essential for daily business and professional activities. Topics include professional memo writing, e-mail format and filing, business letters and correspondence, and business reports. Attention will also be devoted to improving students’ active listening, speaking and nonverbal communication skills.
Prerequisite: ENGL101

BUS445 Professional Development (3 units)
This course instructs the student to develop his/her professional career. Topics cover personality assessment, professional ethics, understanding the business professional world, recognizing company culture and organizational structure, how to survive office politics, career paths and pitfalls, resume writing and cover letters, and interview techniques.
Prerequisite: ENGL101

Computer Systems Engineering

CE305 Computer Organization (3 units)
This course is designed to provide a fundamental understanding of the issues and challenges involved in designing and implementing modern computer systems. The primary goal is to help students become more skilled in their understanding of computer systems, including how the hardware and software interact with each other. This course will also provide an understanding of where computers came from and where they are going, as well as understanding their strengths and weaknesses, such as why compiled code will always execute faster than JAVA code. Subjects will include: RISC vs. CISC CPU design approach, instruction sets, pipelining, instruction scheduling (branch prediction, speculative and out-of-order execution, etc.), cache, and storage hierarchy design. Additional key focuses will be on modern I/O architectures such as PCI, PCI-X, SATA, SCSI, USB, etc., and their importance on performance and compatibility.
Prerequisite: IT200

CE450 Fundamentals of Embedded Engineering (3 units)
This is the first in a series of embedded systems courses designed for students who are interested in learning real-time embedded systems and practicing real-time programming of embedded systems. Topics include hardware issues including platform, microprocessors commonly used in these systems and how a microprocessor works in such systems, concept of memory, registers, I/O; interrupt generation and handling in an embedded system; the concept of real-time programming, multi-task, concurrency, mutual exclusion; overview of real-time kernel/OS, drivers; system initialization and
startup, and debug issues. Hands-on exercises are required.

Prerequisite: CS380

Computer Science

CS200 Discrete Logic (3 units)
This course is designed to introduce students to discrete logic concepts related to computer science and a broad spectrum of applications. Topics include logic set theory, Boolean matrix algebra, relations, structures, combinatorics, computational methods, elements of logic design, graphs theory and its applications to computer science and telecommunications, and design and analysis of efficient algorithms.

Prerequisite: Pre-calculus subjects.

CS204 Program Design & Analysis in C (3 units)
Language
This course is designed to teach C language syntax rules and the analysis of a structured programming language, with emphasis on practical applications in engineering and business problems. Methods of testing and debugging well-structured programs in C are also covered. Topics include problem specification and analysis, writing-editing-compiling-linking a C program, data types, operators and expressions, selection and repetition, arrays, pointers, functions, text files, dynamic memory allocation, strings, structures and unions, binary files, and bitwise manipulation and preprocessor directives. Hands-on exercises are required and the weekly lab session is an integral part of this course.

Prerequisite: IT200

CS204L C Language Lab (1 unit)
This course is designed to be taken with the course of CS204 Program Design & Analysis in C Language. The students learn to design and program in C language through practical hands-on exercises. They also learn to debug the codes, document programs, and test applications using Visual C++ tools.

Prerequisite: IT200

CS230 Introduction to UNIX/Linux (3 units)
This course is designed to familiarize the students with the UNIX/Linux environment. Topics include concepts of the UNIX/Linux operating system, Shell commands, Visual editor, file manipulation and securities, UNIX utility commands, Shell features and Shell environment, online manual, controlling user processes and managing jobs, introduction of Regular Expression and its usage with grep, sed, and awk UNIX power utilities, basic Shell programming techniques, large file management, and the user programming environment customization. Hands-on exercises are required.

Prerequisite: IT200

CS230L Unix/Linux Lab – I (1 unit)
This course is designed to be taken with the course of CS230 Introduction to Unix/Linux. The students gain hands-on experience with Unix/Linux commands, vi editor, Unix/Linux utility, Shell programming, security issues, and managing long files and customization of user environment.

Prerequisite: IT200

CS350 Data Structures (3 units)
This course is designed to teach efficient use of data structures and algorithms to solve problems. Students study the logical relationship between data structures associated with a problem and the physical representation. Topics include introduction to algorithms and data organization, arrays, stacks, queues, single and double linked lists, trees, graphs, internal sorting, hashing, and heap structures. Hands-on exercises are required.

Prerequisite: CS204

CS350L Data Structures Lab (1 unit)
This course is designed to be taken with the course of CS350 Data Structures. C language - a structured programming language - is further investigated. Topics include pointer structure, structure and union, stack, queue, linked list, sort, binary tree, and heaps.

Prerequisite: CS204

CS360 Object-Oriented Programming in C++ (3 units)
This course is designed to develop the students’ abilities to design, code, and document application programs using object-oriented design and analysis concepts and methodology. Emphasis is on the establishment of design objectives, criteria and specifications, processes of synthesis, analysis, construction, testing, and evaluation of open-ended problems. Topics include an introduction to general object-oriented programming as implemented in C++, data types, expression, statements, functions, program scope, run-time memory allocation, function overloading, template functions, class mechanism, derivation, inheritance, and migration from C to C++. Labs may accompany lectures in partial class meetings during the semester. Hands-on exercises are required.

Prerequisite: CS204

CS360L Object-Oriented Programming in C++ Lab (1 unit)
This course is designed to be taken with the course of CS360 Object-oriented programming in C++ to practice and develop the programming skills in C++.

Prerequisite: CS204
CS380 Introduction to Operating Systems (3 units)  
This course is designed to introduce students to basic concepts of modern operating systems. Topics include processes, threads, micro-kernel, concurrency, memory management, scheduling, distributed systems, and file system. Solaris, UNIX System V, Linux, and Windows2000 are selected for case studies. Hands-on exercises are required.  
Prerequisite: CS204

CS385 UNIX/Linux Shell Scripting  (3 units)  
This course covers the fundamentals of and techniques involved in UNIX/Linux shell programming. Topics include UNIX/Linux shells (Bourne, Korn, C Shell and bash); shell programming and environments, basic UNIX/Linux file system, and resource management. The students will be able to write shell scripts to accomplish routine tasks for software development and testing. Intensive hands-on practice is required.  
Prerequisite: CS230

CS385L Unix/Linux Lab – II  (1 unit)  
This course is designed to be taken with the course of CS385 UNIX/Linux Shell Scripting. The students gain hands-on experience with Shell programming. Topics include Unix/Linux Shells – Bourne, Korn, C Shell, and bash, Shell programming, and network environment.  
Prerequisite: CS230

CS453 Compiler Design  (3 units)  
This course is designed to give students a fundamental knowledge of compilers and interpreters for modern computer languages. Topics include a study of modern computer languages, regular expressions, lexical analysis, parsing techniques, context-free grammars, and syntax-directed translation. Hands-on exercises and trimester projects are required.  
Prerequisite: CS230

CS457 Data Modeling and Implementation Techniques  (3 units)  
This is the first of a series designed to teach relational database concepts, design, and applications. Topics include database architecture, relational model, structured query language (SQL), data manipulation (DML), data definition language (DDL), database design, ER modeling, database normalization, denormalization, and physical database design. Popular database systems, such as Oracle and Microsoft SQL server, are used for hands-on exercises and projects.  
Prerequisite: CS350

CS464 Software Design and Implementations  (3 units)  
This course is designed to use C/C++ to achieve the goal of teaching the students the design methodology for algorithm development. The objective is to develop the students’ programming ability with proper logical and object-oriented thinking processes. The course covers two main topics: (1) Problem specification and analysis - understand the problem, analyze it, and translate the human thinking into a computer program; (2) Object-oriented design and analysis - understand data abstraction, encapsulation, aggregation, and inheritance. These concepts are the foundation for modern object-oriented programming languages such as C, C#, and Java. Hands-on practices are required.  
Prerequisite: CS204

CS470 Network Engineering and Management  (3 units)  
This course is designed to give students a global picture of computer networks. Topics include network layered models (OSI, TCP/IP), data communication basics, circuit switching, packet switching, routing, and internetworking. Hands-on exercises are required.  
Prerequisite: CS204

CS480 Java and Internet Applications  (3 units)  
This course introduces students to the Java language, programming with object-oriented construct, GUI design and graphics programming, and core Java libraries. Students will learn Java language basics such as syntax and classes, inheritance, interfaces, reflection, graphics programming, event handling, user-interface components with Swing, Java applets, exception handling, stream, and files. Hands-on exercises are required.  
Prerequisite: CS360

Curricular Practicum

CPT401 Curricular Practicum  (1 unit)  
Curricular practicum, or curricular practical training, is a supervised practical experience that is the application of previously studied theory. It is defined as alternative work/study, internship, cooperative education, or any other type of required internship or practicum that is offered by sponsoring employers through cooperative agreements with the school and the course is an integral part of an established curriculum. At least three hours of work in a practical setting has the credit equivalency of one hour of classroom lecture (1 unit). To be eligible to take this course, the student must have completed at least two semesters of coursework required in his/her degree program, obtained a written agreement that outlines the arrangement between the institution and the practicum site (including specific learning objectives, course requirements, and evaluation criteria), and received approval by a designated advisor. International students must follow additional rules required by the U.S. Immigration and Customs Enforcement. The student must use NPU’s online tool to submit his/her application for taking this course before meeting with a designated advisor for an assessment of eligibility. Information
and instructions concerning this course are provided in the application form. This is a part-time practicum course taken by the undergraduate student to work no more than twenty hours each week during the approved practicum period. Failure in this course will prevent the student from taking any curricular practicum course afterwards. **Prerequisite:** Refer to the instructions on the application and agreement documents.

**CPT402 Curricular Practicum (2 units)**
Curricular practicum, or curricular practical training, is a supervised practical experience that is the application of previously studied theory. It is defined as alternative work/study, internship, cooperative education, or any other type of required internship or practicum that is offered by sponsoring employers through cooperative agreements with the school and the course is an integral part of an established curriculum. At least three hours of work in a practical setting has the credit equivalency of one hour of classroom lecture (1 unit). To be eligible to take this course, the student must have completed at least two semesters of coursework required in his/her degree program, obtained a written agreement that outlines the arrangement between the institution and the practicum site (including specific learning objectives, course requirements, and evaluation criteria), and received approval by a designated advisor. International students must follow additional rules required by the U.S. Immigration and Customs Enforcement. The student must use NPU’s online tool to submit his/her application for taking this course before meeting with a designated advisor for an assessment of eligibility. Information and instructions concerning this course are provided in the application form. This is a full-time practicum course taken by the undergraduate student to work more than twenty hours each week during the approved practicum period. Failure in this course will prevent the student from taking any curricular practicum course afterwards. **Prerequisite:** Refer to the instructions on the application and agreement documents.

**Electrical Engineering**

**EE205 Fundamentals of Digital Electronics (3 units)**
This course is designed to be the first of the digital circuits series. It provides the fundamentals of digital circuit operations so that students can be ready for practical design considerations in digital electronics, and it includes hands-on experience with digital logic elements and testing and measuring equipment. Topics include number systems and codes, logic gates and Boolean algebra, combinational logic circuits, flip-flops and related devices, digital arithmetic, counters and registers, integrated-circuit logic families, A/D and D/A converters. Laboratory experiments will accompany the class topics. **Prerequisite:** MATH201

**EE205L Digital Electronics Lab – I (1 unit)**
This course is designed to be taken with the course of EE205 Fundamentals of Digital Electronics. Topics include introduction to power and ground, basic IC chips with enable/disable control, implementing a 1-bit adder and connecting two 1-bit adders to create a 2-bit adder, measuring voltage and current and power, connecting multiple outputs; divide by 2, 4 circuit; using the oscilloscope, design an oscillator using the 555, design a programmable mod-8 up/down counter, digital clock, IC UP decade counter with LS7447 and 7-segment display, D/A conversion design, memory writing and reading, and night rider design. **Prerequisite:** MATH201

**EE300 Circuit Theory - I (3 units)**
This course is the first of a 2-part series on the fundamentals of electrical circuits. Topics include analysis of circuits containing resistors, capacitors, inductors, and controlled sources; Kirchoff’s Laws; simple resistive circuits; node-voltage method, mesh-current method; Thévenin’s and Norton’s theorems; operational amplifier and its applications; transient analysis of first and second order circuits, and SPICE simulation. **Prerequisite:** MATH201

**EE301 Circuit Theory - II (3 units)**
This course is the second of a 2-part series on electrical circuits that covers advanced topics, including sinusoidal steady-state circuit analysis using phasors, power calculations in AC circuits, balanced three-phase circuits, Laplace transform and its application in transient circuit analysis, frequency select circuits and filters, Fourier series and transforms, and two-port networks. **Prerequisite:** EE300

**EE302 Fundamentals of Analog Electronics (3 units)**
This course is the first of a series on the basics in analysis and design of analog circuits. Hands-on experimentation will accompany the course to demonstrate and verify the subjects covered and to assist understanding of the design techniques and theories. Topics include a review of circuit analysis techniques, operational amplifier applications, and device models (BJT and CMOS). Laboratory experience includes work on transistor amplifiers with feedback, discrete components, differential amplifier, op-amps and their applications, active filters and oscillators, regulated power supplies, class AB power amplifiers, and AM and FM communications. **Prerequisite:** EE301
EE302L Analog Electronics Lab (1 unit)
The objective of the analog electronics lab is to
develop the student’s ability to analyze and design
analog electronic circuits. This lab covers practices
of device operation, bipolar junction transistor
operation characteristics, computer simulation tools
PSpice, and basic analog circuit design such as
linear circuits and Opamps.
Prerequisite: EE301
EE323 Logic Design (3 units)
This course is a sequel of EE205 Fundamentals of
Digital Electronics. It is intended to provide
the students the opportunity to use the knowledge and
experience acquired in previous digital circuit
courses to further understand the design aspect of
digital integrated circuits and devices. Hands-on
design experience is provided in digital and logic
circuits and their applications. The course focuses
on various logic design techniques to design a
variety of combinatorial and sequential circuits.
Timing considerations are analyzed for
asynchronous and synchronous circuit designs with
emphasis on state machine design approaches.
Students will be introduced to modern design
techniques using HDL languages and concentration
on verification of circuit designs. Simulation tools
include Altera MAX+plus II, Xilinx Foundation,
and Espresso. Students will use HDL tools in labs
to design and verify various projects.
Prerequisite: EE205
EE323L Digital Electronics Lab – II (1 unit)
This course is designed to be taken with the course
of EE323 Logic Design. Topics include
introduction to Altera simulation tool and Verilog,
decoder designs with various In/Out active levels,
creating functional test patterns, BCD-7 Segment
converter design and test in Verilog, download to
PLD H/A and test, 1-bit adder design, 4-bit adder
design, design a 4-bit ALU, design a parallel-in,
serial-out shifter, Up/Dn counter designs, timing
analysis using simulation, data encryption circuit,
simple state machines, pure synchronous state
machine design, clock counter, state-machine
tracing of EE323 Logic Design.
Prerequisite: EE205
EE450 Systems Analysis and Simulations (3 units)
This course is an introduction to the basic concepts
and principles of signals and systems. Both analog
and digital signal processing techniques will be
covered. Topics include analog signals and
digital signals and systems, LTI systems,
Fourier transform, Z-transform, FFT, system
stability, digital filter design, and network. Matlab
software will be used to implement some of the
DSP algorithms.
Prerequisite: MATH205
EE453 Modern Software Techniques for Electrical
Engineering (3 units)
This course is designed to provide the MSEE
students with hands-on experience in the
Unix/Linux environment and necessary skills in
C/C++ programming languages. This course will
cover the essentials of the logic of a structured
computer language, Unix/Linux shell programming,
the basic Matlab script programming, and Hspice
for circuit simulation. This course will be taught
with extensive practical applications in hardware
design.
Prerequisite: EE323
EE461 Digital Design and HDL (3 units)
This course develops the students’ ability to design
commonly used basic building blocks of modern
digital systems and provides them with a
fundamental knowledge of the state-of-the-art
design methodology, design considerations, and
verification strategies for complicated digital
hardware design. Topics include Verilog HDL
basics, Logic modeling, state machine design and
memory modeling using Verilog HDL. Additional
topics on FPGA architectures, device vendors,
FPGA design tools, FPGA applications and latest
trend in the programmable logic industry are also
covered. Students can use Verilog tools such as
Synopsys VCS, Mentor Modelsim, Cadence NC
Verilog, and Silo III Verilog Simulator from
SimuCAD for their homework and design projects.
Hands-on practice is required. Students are
encouraged to take the HDL based sequence of
courses EE461, EE510 and EE512 to gain
knowledge and experience in semi-custom IC
design using industry grade EDA design tools.
Prerequisite: EE323
EE466 Introduction to Nanotechnology (3 units)
This course is an introduction to the science of
nanotechnology, tools, and applications of
nanotechnology to various fields. Topics include:
nano-electronics, spintronics and quantum
computer, novel man-made materials such as
carbon nano-tube, nano-characterization and nano-
fabrication; applications to medicine, health,
defense, security, green energy technology, and
electronics; impact to environment and society,
business, investment, and intellectual property.
Prerequisite: MATH208
EE468 Microelectronics Circuit Design and
Analysis (3 units)
This course provides an in-depth understanding of
electronic circuit design and analysis at the
transistor level. It is in preparation for studying
more advanced analog or digital courses. The
topics include differential and multistage amplifiers,
current source and bias circuits, amplifier frequency
response and feedback, output stages, operational
amplifier, inverter, combinational logic, and
sequential logic. The lab is run in conjunction with
the course material and industry standard CAD
tools are applied.
**Prerequisite:** EE302

**EE488 Computer Architecture (3 units)**
This course is intended to lay a solid foundation for the design of modern computer systems. The topics covered include instruction set design, computer arithmetic, basic ALU functional blocks, control and datapath of a simple CPU, the concept of pipelining and hazards, memory hierarchy and cache design, I/O, and introduction to parallel processing. Several hands-on labs require a background in an HDL language such as Verilog, and the MIPS assembly instruction simulator such as SPIM.

**Prerequisite:** EE461

**English**

*(GE in English and Communication area)*

**ENGL101 Expository Writing (3 units)**
This course, while at the fundamental level of college writing, is based on a systematic approach to address students' needs to acquire knowledge and skills in written communication. It covers a full range of basic concerns in writing, going from its processes to its forms, to the popular techniques writers have used to make their works outstanding. With this course, students will learn to write as well as write to learn. By the end of the semester, the students should be able to use grammar and punctuation correctly and to write effective essays in both academic and professional settings.

**Prerequisite:** ENGL101

**ENGL102 Critical Thinking (3 units)**
This course focuses on learning to be an effective provider and consumer of ideas in our information-saturated society. Students will learn to identify the intent of the message, to judge the soundness of the argument, and to evaluate the validity of the evidence. Rigorous training will help learners go beyond feelings and personal biases to clear, impartial, and accurate problem solving and decision making that are essential to all human communication: speaking, writing, debating, and persuading.

**Prerequisite:** ENGL101

**ENGL115 Public Speaking (3 units)**
This course is designed to develop effective skills in extemporaneous speaking, formal presentations, and listening. Students will learn about nonverbal communication, cultural differences in communication, and research methodology.

**Prerequisite:** ESL401

**ENGL210 Intercultural Communication (3 units)**
This is a course taught with lecture, readings, discussion, video viewing and guest speakers. It will turn you into a better communicator in an increasingly diversified workforce. With globalization becoming such a universal trend, everyone needs to know how to interact and stay in harmony with people of different cultural, ethnic and linguistic origins. Indeed, how to communicate in a "melting pot" like the U.S.A. today is an urgent concern both in theory and in practice. Much of the tension among countries, races and ethnic groups is caused by a lack of mutual understanding. This course will give you the kind of knowledge needed for this understanding. It will cover many interesting theories that will help you establish and maintain good social and work relationships across the borderlines of cultures and nationalities.

**Prerequisite:** ENGL101

**ENGL220 Small Group Communication (3 units)**
This course is designed to accomplish the following learning goals: 1) to help the students understand theories and principles of small group decision making and problem solving, 2) to provide students with hands-on experience working in small groups, the most powerful tool in modern industry, and 3) to offer students opportunities to observe the development and operation of real-life task-oriented groups.

**Prerequisite:** ENGL101

**Humanities**

*(GE in Humanities area)*

**HU210 Introduction to Philosophy (3 units)**
This course is an introduction to the great questions of philosophy, using an historical approach. The class covers Western and non-Western traditions from the pre-Socratic and Confucius to modern times.

**Prerequisite:** ENGL101

**HU240 Music Appreciation (3 units)**
This course is designed for students to explore the fundamentals of music through easy listening examples from all aspects of sound: tone, color, harmony, rhythm, mood, dynamics, tempo, themes, and forms. Students will analyze music in respect to the historical and cultural context as well as to daily life.

**Prerequisite:** ESL401

**HU250 News Reading (3 units)**
This course will give students a skill that they will be able to use and benefit from for the rest of their lives: the ability to read and understand an English-language newspaper, magazine or other journalistic materials. It will enable the students to launch from their general English reading capability into a subject area which is more specialized and yet intimately woven with every-day happenings that concern and motivate every ordinary man and woman -- the news reports.

**Prerequisite:** ENGL101
HU280 Principles of Ethics (3 units)
This course is designed to teach students ethical principles and problems applicable to their lives. Topics include application of ethical principles, background and philosophical principles of ethics, ethical practices, and practical ethical problems and solutions.
Prerequisite: ENGL101

Information Technology

IT200 Introduction to Computers and Digital Media (3 units)
This is an introductory computer literacy course introducing the students to the basics of computer hardware structure, the World Wide Web, and MS Windows software tools. Topics include an introduction to computer components, input/output, data storage, the internet and the WWW, operating systems, data management, and a few Adobe Photoshop software tools. Students also learn to use the latest Microsoft Office tools – Word, Excel, Access, PowerPoint, and the use of the internet and browsers. Hands-on exercises are required.
Prerequisite: ESL401

Mathematics

MATH201 Calculus - I (3 units)
This course is the first of a series in calculus designed for students to build up the fundamental background of calculus and to learn its applications to very basic problems. Topics include functions, limits, continuous functions, derivatives and applications, antiderivatives, composite functions and chain rule, graphing techniques using derivatives, implicit differentiation, finite integrals, and fundamental theorems of calculus.
(GE – in Mathematics area)
Prerequisite: pre-calculus subjects.

MATH202 Calculus - II (3 units)
This course is the second of the calculus series designed for students to understand integration techniques and extend the differentiation notion and methods to functions of multiple variables. Topics include logarithmic and exponential functions and their derivatives, inverse trigonometric functions and derivatives, L'Hopital’s rule, integration techniques and their applications, sequence, series, partial derivatives, and improper integrals.
Prerequisite: MATH201

MATH203 Linear Algebra (3 units)
This course is designed for engineering students to learn linear algebra and its applications. Topics include systems of linear equations, matrices, vector spaces and vector analysis, transformation and representation theories including Laplace transform, Fourier transform, Z-transform etc.; applications in circuit analysis and signal analysis, numerical methods, optimization, probability and random processes, and discrete mathematics.
Prerequisite: MATH201

MATH205 Differential Equations (3 units)
This course is designed for engineering students to learn differential equations and their applications. Topics include ordinary differential equations at first, second, and higher orders; applications of ordinary differential equations in electrical circuits and motions, partial differential equations and boundary problems, eigenvalues and eigenfunctions, Green's function, and applications of partial differential equations in electromagnetic waves and scalar and vector potential problems.
Prerequisite: MATH202

MATH208 Statistics (3 units)
This course is designed for students to understand the concepts, theory, and applications of probability and statistics. Topics include permutation, combination, random variables, distribution, means and variance, normal distribution, random sampling, estimation, confidence interval, hypothesis testing, linear correlation and regression.
(GE – in Mathematics area)
Prerequisite: Pre-calculus subjects

Physics and Physical Sciences

ASTRO450 Hands-on Astronomy (3 units)
This course is designed to introduce students to astronomy using a hands-on approach. Studies will include: evolution of the Universe, dark energy, and dark matter. We will discuss the notion of “wonder” in our perception and observation of the heavens, and nature in the large; connection between nature in the “large”, and nature in the “small”. The course is open to all graduate and undergraduate students. Students will have the opportunity to analyze new astronomy data currently being collected by new astronomical observatories. NASA's Spitzer Observatory is a space-based telescope currently accumulating data on a search for new galaxies. The data is being made available to the public as soon as it is collected. Students will learn how to look for new galaxies, using a personal computer. No previous knowledge of astronomy is assumed. The course will include field trips to planetariums located in the San Francisco Bay Area, where students can view the night sky with local, ground-based telescopes.
(GE- in Sciences area)

PHYS101 Introduction to Physical Sciences (3 units)
This is an introductory course to expose the students to physical science subjects including the basics of astronomy, chemistry, earth science, and physics.
(GE- in Sciences area)
Prerequisite: Pre-calculus subjects
PHYS201 Physics - I (3 units)
This course is designed to be the first of a series in physics for engineering students. Topics include vectors, motion and Newton’s laws, gravitation, work and energy, momentum, mechanics of rigid bodies, oscillations, kinetic theory of gases, waves and sound, and thermodynamics. Laboratory practices are conducted formally each week.
Prerequisite: MATH201

PHYS201L Physics Lab - I (1 unit)
This course is designed to be taken with the course of PHYS201 Physics - I. The student first learns to use the general measuring equipment, the proper experimental procedures, and lab safety issues. The student is expected to gain skills in data analysis and lab report writing throughout the semester. Lab topics include measurements of position and velocity, kinematics, Newton’s laws of motion, energy, momentum, conservation laws of energy and momentum, collisions, torque, rotational dynamics, waves, and thermodynamic behaviors.
Prerequisite: MATH201

PHYS202 Physics - II (3 units)
This course is the second of a series in physics for engineering students. Topics include Coulomb’s law and electric fields, currents and DC circuits, magnetic fields, time-varying EM fields, AC circuits, optics, interference, diffraction, and an introduction to modern physics. Laboratory practices are conducted formally each week.
Prerequisite: PHYS201

PHYS202L Physics Lab – II (1 unit)
This course is designed to be taken with the course of PHYS202 Physics - II. The student learns to use electrical measuring equipment to conduct the first several experiments related to electromagnetism. Lab safety as well as skills in data analysis and lab report writing are stressed. Lab topics include measurement of electric field and potential, simple circuits, resistors, DC circuits, Kirchhoff’s laws, capacitors, RC circuits, magnetic effects, inductors, AC circuits, electromagnetic induction, RLC circuits, geometrical optics, lenses, and light as a wave.
Prerequisite: PHYS201

PHYS301 Introduction to Device Physics (3 units)
This course provides a basis for understanding the characteristics, operation, and limitations of semiconductor devices. The course covers the fundamental concepts of quantum mechanics, the quantum theory of solids, semiconductor material physics and semiconductor device physics. All of these components are vital to the understanding of both the operation of present day devices and future development in the field.
Prerequisite: PHYS202

Social Science (GE – in Social Sciences area)

SOC201 California History (3 units)
This course is designed to expose the students to the uniqueness of California history and its evolution. Topics include the social, economic, and political development of the “Golden State” over the last three centuries, spanning the Native-American, Spanish, Mexican, and American periods. Lectures, case studies, and field trips for research are the forms of study in this course.
Prerequisite: ENGL101

SOC215 Introduction to Sociology (3 units)
This course provides a study of culture, social organization, and social relations. Additional topics include the major social problems in society, with an emphasis on how those problems are interrelated and the role of society in their creation and perpetuation. Issues and problems related to cross culture and diversity will also be addressed.
Prerequisite: ENGL101

SOC235 Multiculturalism in the United States (3 units)
This course looks into various aspects of multiculturalism in American society, exploring issues related to race, ethnicity, gender, sexual orientation, disability, and other social group identities.
Prerequisite: ENGL101

SOC245 Health Psychology (3 units)
This survey course will ask: What is health, how do you know you are well, when should you seek professional services, where do I find the right doctor, why should I take good care of myself, and whom do I go to and for what? Concepts and facts will be given to understand and apply to: the body and its systems, the brain and the mind, physical diseases, chronic pain, mental illnesses, personality disorders, sleep and relaxation, positive thinking, emotional intelligence, behavioral health, nutrition, exercise, health care treatments, alternative and complementary medicine, medications and adverse side effects, medical specialties, national costs, insurance, programs, aging and longevity, quality of life, dying with dignity, and healthcare providers ethics.
Prerequisite: ENGL101

SOC250 Public Administration (3 units)
This course serves as an introduction to public administration. Early key thinkers in the development of public administration will be examined. During the semester, topics such as public policy formation, public management, human resources, reinvention, privatization, e-Government, public finance, performance measurement, and ethics will be reviewed. Students will become familiar with the primary issues and challenges facing public administrators today.
Prerequisite: ENGL101
SOC260 Civilization and Urbanization  (3 units)
This is an introductory course designed to cover the 5,000 year shift from rural to urban throughout the world. The city is civilization’s greatest work of art but has many challenges. The ancient walled cities, utopian writings, urban theories, religious experiments, English Garden Cities and new towns, American Greenbelt Towns, company towns, flight to the suburbs, Neo-traditional planning, the New Urbanism, and current sustainable development, Smart Growth, to the more recent Greening and Healthy Cities will be described and the actual city and regional planning practices are shown.
Prerequisite: ENGL101

SOC270 Early American History  (3 units)
This course is designed to lead the students to examine the early periods of American history that shaped the development of the nation, including America before Columbus, European expansion, the founding era and Revolution, the Constitution and the new republic, and subsequent periods of civic and political growth up to the Civil War.
Prerequisite: ENGL101

SOC275 The American Experience  (3 units)
This course is designed to lead the students to examine the 20th century rise of the United States as a modern multiethnic society with emphasis on the socioeconomic and political forces that have shaped its development.
Prerequisite: ENGL101

Master’s Degree Programs
The School of Engineering offers three master’s degree programs:
- Master of Science in Electrical Engineering (MSEE)
- Master of Science in Computer Systems Engineering (MSCSE)
- Master of Science in Computer Science (MSCS)

Objective
The objective of the master’s degree programs is to provide advanced engineering training to those who wish to practice their profession with increased competence in the high-technology electronics and computer industries. Each program emphasizes both mastery of subject matter and an understanding of related research and research methodology. This emphasis implies development of the student’s ability to integrate and apply the subject matter.

Committee Oversight
The responsibility for developing, modifying, and maintaining each master’s degree program is performed by the Academic Committee for this School. The Academic Committee is lead by a designated group of members who invite inputs from qualified students, faculty, administrators, employers, as well as the Advisory Committee members to conduct their duties.

Credential Requirements
The master’s degree program applicants must hold a valid bachelor’s degree before attending NPU and meet the minimum grade point average requirement for consideration of acceptance.

Application Requirements
To apply for admission into a master’s degree program, the applicant is required to submit the following to the NPU Admissions Office: (1) an Application Form (online or hardcopy), (2) a nonrefundable application fee, (3) official transcripts from previously attended colleges; (4) a document certifying completion of a bachelor’s degree; a transcript printed with degree completion information will suffice (5) an English proficiency document is required for non-native English speakers: An official transcript with English course records or TOEFL/IELTS score report or equivalent will suffice. NPU's English assessment exam, when available, can be taken by the applicant to meet this requirement. See English Proficiency Requirement below for detailed information on the English entrance requirement, and (6) Resumes are required for applicants interested in applying for scholarships.

International Students: In addition to the above general application requirements, an international applicant is also required to submit the following additional documents: (a) a financial support document – either the applicant’s bank statement or a certified affidavit of support (form I-134 or equivalent) from a financial sponsor indicating that a minimum amount of $25,000 is available for the applicant to pursue his/her study in the first academic year at NPU, (b) a transfer student
(from a U.S. institution) is required to submit a photocopy of his/her previous I-20 form and request the other school’s international student advisor to complete the International Student Transfer Record form for NPU and conduct the required SEVIS transfer process, and (c) upon reporting to NPU, photocopies of the student’s passport, visa, and I-94 (admission & departure) document. The student will be asked to show an identification document attesting his/her official name, if applicable.

■ English Proficiency Requirement

Non-native English speakers are considered meeting the entrance English proficiency requirement if they meet any of the following requirements:

- Used English as the official language and completed study in a high school or college degree program,
- Has completed a college English credit course in an English speaking institution,
- Has submitted an official TOEFL or IELTS test score report to NPU and the score meets the entrance English requirement set by the NPU admissions office.

The TOEFL institution code for NPU is 9626.

Conditional acceptance may be granted to applicants whose TOEFL/IELTS scores or other equivalent records do not meet the above requirement but have reached intermediate level of the American Language classes (ESL) offered by NPU. These students will be required to enroll in ESL classes until they pass the advanced level ESL classes before enrolling in degree courses.

NPU’s English Placement Examination (EPE): An applicant may be offered the option to take NPU’s English Placement Examination in place of the standardized tests. The exam result affects the applicant’s admission status. A fee will be charged for this service.

NPU may accept the English assessment reports from a few U.S. English language institutions recognized by major universities in the U.S.

■ General Background Requirements for Pursuing Master’s Degrees

Background Preparation: The background preparation for each graduate program is described at the beginning of each program. Background deficiencies are identified in the admission evaluation report received by each applicant. The student is required to clear the deficiencies early in his/her study at NPU.

How to Clear Deficiencies: The graduate student may clear each background deficiency by taking and passing the subject course (an undergraduate course) at NPU. With advance approval by the Admissions Committee, the student may be allowed to clear a deficiency by taking a proficiency exam on the subject.

Courses taken elsewhere after joining the degree program at NPU will not waive a deficiency requirement. Students may not take the deficiency courses at another institution while attending NPU.

■ Transfer of Credit from Other Institutions

Course credit earned at other institutions of higher education may be transferable. Credit transfer is made by the admission evaluators while conducting the admission evaluation. The following statements apply to all transfer credits:

-- The NPU Admissions Office must receive all official transcripts prior to the student’s joining a degree program. Without preapproval, transcripts received after the student joins NPU cannot be used in transferring credits, except for records from the term immediately preceding the student’s starting semester at NPU.

-- The student was officially enrolled in the course.

-- When evaluating any foreign transcript, the admission evaluators may accept or transfer credit based on their knowledge of the course contents in comparison with similar courses offered in the U.S.

-- Courses for transfer to NPU may not be completed concurrently at another institution while attending NPU.
-- Credits are transferred by the following conversion:

**Definition of a Trimester/Semester Unit:**

One trimester/semester credit hour equals, at a minimum, 15 classroom hours of lecture, 30 hours of laboratory, and 45 hours of practicum.

**Conversion Factor:**

1 quarter unit = 0.66 trimester/semester unit

- **Grades Required for Transfer Credit**

In the master’s degree programs, courses completed with grades "A" and "B" are transferable. Courses completed with a “CREDIT” grade are transferable only if the institution’s grading policy states that “CREDIT” is granted with a letter grade which meets the above condition. This policy must be in writing from the institution (transcript key or letter of verification).

A maximum of 9 units of graduate-level course credits earned from an accredited graduate school or an equivalent foreign institution may be transferred towards the graduation requirements for a master’s degree program.

NPU undergraduate students who take graduate level courses for graduate credits at NPU while completing their undergraduate degrees are allowed a maximum of 12 units to be counted towards a graduate degree. These courses may not count towards the undergraduate degree. These students may apply for admission to a master’s degree program at NPU in the last semester of their undergraduate study. They are required to complete their undergraduate study before being officially admitted into a graduate program.

**Proficiency Exams:** A student may be required to demonstrate proficiency in a subject taken more than ten years prior to application with NPU by successful completion of a proficiency examination.

- **Tuition**

Tuition is charged per unit. Tuition for courses taken to fulfill the master’s degree requirement is $450.00 per unit.

**Tuition per Unit for Courses Audited**

For courses audited (without earning credit), the tuition is half the regular unit rate. Not all courses can be taken with “audit” status.

**Estimated Semester Cost of Tuition for a Full-Time Student**

The tuition is $4,050 for a master’s degree student taking 9 units per semester

- **Graduation Requirements**

A minimum of 36 units of graduate-level coursework are required for each master’s degree program. Additional coursework may be required for a student whose undergraduate degree program was in a different field.

In each master’s degree engineering program, four categories of courses are required:

1. Foundation requirements,
2. Core requirements,
3. Elective requirements, and
4. A capstone course.

The following are required for graduation:

- A graduate student entered with undergraduate deficiencies must clear the deficiencies in early terms. The student may clear a subject by either taking the course and earning a passing grade or passing a proficiency exam on the subject,
- Maintain a grade of C- or better for all courses taken to clear deficiencies or towards the degree requirements,
- Maintain an overall G.P.A. of 3.0 or better,
- Maintain good standing with the University – with clear financial, library, and other school records,
- The student is approved to graduate after filing a petition for graduation.
**Capstone Course**

The capstone course in each engineering master’s degree program is intended to integrate the knowledge and hands-on experience that the student has acquired from the foundation, core, and elective coursework required for the program with the capstone course under the guidance of the course instructor. The instructor determines the course objectives and scope based on the degree curriculum and technology trend. With this learning experience, the student is prepared to pursue his/her career in the high-technology industry.

The student shall take the capstone course near the end of his/her program of study.

**Career Planning**

The students are encouraged to gain real-world experience by engaging in curricular practicum when applicable. For career planning, the students may utilize the online eCareer Center and work with the Career Center staff to prepare their resumes and participate in job search activities when they are ready for such a pursuit.

The following are descriptions of the master’s engineering degree programs, each with a statement of objectives, a description of the background preparation for the program, and the program curriculum.

**Course Numbers**: Courses numbered in the 200s and 300s are undergraduate background courses, and 400Gs and 500s are to meet the graduation requirements.

---

**Master of Science in Electrical Engineering (MSEE)**

**Objectives**: The MSEE degree program intends to provide advanced knowledge and hands-on experience in electronics engineering to the students who are interested in gaining expertise in chip engineering in submicron and nano-domain fields of studies. Through the learning process, the students not only acquire knowledge in modern electronics technologies but also cultivate the ability to design, simulate, and integrate chip engineering as well as learn its wide range of applications. The MSEE curriculum covers topics on digital IC design, analog IC design, mixed signal IC in mobile communications, and other advanced topics. The students also have the opportunity to learn applications in the fields of ubiquitous engineering, nanotechnology, and green technology.

**Background Preparation**

Students admitted into the MSEE degree program are required to have the following background preparation. A student with any deficiency is required to clear it by either (1) taking the course at NPU and earning a grade of at least C- or higher, or (2) taking and passing a proficiency exam on the subject. The student must clear prerequisites before attempting to enroll in graduate level courses.

1. **Engineering Mathematics**: MATH201, MATH202, MATH203, MATH205, and MATH208;
2. **Engineering Sciences**: PHYS201 & Lab, PHYS202 & Lab, PHYS301;
3. **Electrical Engineering Subjects**:
   - Circuit theory and analysis (EE300, EE301);
   - Digital electronics and logic design (EE205 & Lab, EE323 & Lab);
   - Analog electronics (EE302 & Lab).
MSEE Curriculum

A minimum of 36 semester units of graduate study are required for the MSEE program. The student must meet prerequisite requirements when taking any course.

I. Foundation Requirements (12 units)

EE450G Systems Analysis and Simulations
EE453G Modern Software Techniques for Electrical Engineering
EE461G Digital Design and HDL
EE468G Microelectronics Circuit Design and Analysis

II. Core Requirements (18 units)

Level I:

EE504 Advanced Computer Architecture
EE505 Advanced Digital IC Design
EE509 Mobile and Wireless Communication

Level II:

EE511 Advanced Analog IC Design
EE512 Application Specific Integrated Circuit Design (ASIC)
EE520 Advanced FPGA Design and Implementations

III. Elective Requirement (3 units)

The student may take any graduate-level course to meet this requirement. Prerequisite requirements must be met when taking any course. When applicable, the student may take curricular practicum courses and engage in practical training to work on company projects which are directly related to the student’s course of study.

IV. Capstone Course (3 units)

EE595 Electrical Engineering Capstone Course
Master of Science in Computer Systems Engineering (MSCSE)

Objectives: The MSCSE degree program intends to provide advanced knowledge and hands-on experience in computer systems engineering to the students who are interested in gaining expertise in embedded systems and ubiquitous computing fields of studies. Through the learning process, the students acquire not only knowledge in modern computer systems technologies but also the ability to design and develop real-time computer systems in modern networking and digital internet environments.

Background Preparation

Students admitted into the MSCSE degree program are required to have the following background preparation. A student with any deficiency is required to clear it by either (1) taking the course at NPU and earning a grade of at least C- or higher, or (2) taking and passing a proficiency exam on the subject. The student must clear prerequisites before attempting to enroll in graduate level courses.

1. Engineering Mathematics: MATH201, MATH208;
2. Computer Engineering Subject: CE305;
3. Computer Science Subjects:
   - Programming languages and data structures (CS204 & Lab, CS350 & Lab, CS360 & Lab);
   - Linux and Operating systems (CS230 & Lab, CS380).

MSCSE Curriculum

A minimum of 36 semester units of graduate study are required for the MSCSE program.

I. Foundation Requirements (12 units)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE450G</td>
<td>Fundamentals of Embedded Engineering</td>
</tr>
<tr>
<td>CS464G</td>
<td>Software Design and Implementations</td>
</tr>
<tr>
<td>CS470G</td>
<td>Network Engineering and Management</td>
</tr>
<tr>
<td>CS480G</td>
<td>Java and Internet Applications</td>
</tr>
</tbody>
</table>

II. Core Requirements (12 units)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS501</td>
<td>Advanced Structured Programming and Algorithms</td>
</tr>
<tr>
<td>CS503</td>
<td>Advanced Computer Network Design</td>
</tr>
<tr>
<td>CS506</td>
<td>Advanced Operating System Design</td>
</tr>
<tr>
<td>CE521</td>
<td>Real-time Systems and Programming</td>
</tr>
</tbody>
</table>

III. Elective Requirements (9 units)

The student may take any graduate-level courses to meet this requirement. Prerequisite requirements must be met when taking any course.

To gain further understanding and experience in embedded engineering as well as its applications, the student is advised to take the following elective courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE523</td>
<td>Embedded Design in Device Driver Environment</td>
</tr>
<tr>
<td>CE527</td>
<td>Embedded Systems in Windows CE Environment</td>
</tr>
<tr>
<td>CE530</td>
<td>Embedded Software Design in Linux</td>
</tr>
</tbody>
</table>

Practicum: When applicable, the student may take Curricular Practicum courses and engage in practical training to work on company projects which are directly related to the student’s course of study. The student must observe the rules required for taking the practicum courses.
IV. Capstone Course (3 units)

CE595 Computer Systems Engineering Capstone Course

Master of Science in Computer Science (MSCS)

Objectives: The MSCS degree program intends to provide advanced knowledge and hands-on experience in computer science to the students who are interested in gaining expertise in software engineering as well as modern internet technologies and applications. Through the learning process, the students not only acquire knowledge in modern computer technologies but also cultivate the ability in the software design, development, deployment, and integration aspects of professional learning. Specific studies of the program cover database technology, software engineering, internet technology, mobile computing, Unix/Linux programming and administration, and network engineering and security related fields.

Background Preparation

Students admitted into the MSCS degree program are required to have the following background preparation. A student with any deficiency is required to clear it by either (1) taking the course at NPU and earning a grade of at least C- or higher, or (2) taking and passing a proficiency exam on the subject. The student must clear prerequisites before attempting to enroll in graduate level courses.

1. Engineering Mathematics: MATH208;
2. Computer Engineering Subject: CE305;
3. Computer Science Subjects:
   - Programming languages and data structures (CS204 & Lab, CS350 & Lab, CS360 & Lab);
   - Operating systems (CS230 & Lab, CS380).

MSCS Curriculum

A minimum of 36 semester units of graduate study are required for the MSCS program. The student must meet prerequisite requirements when taking any course.

I. Foundation Requirements (12 units)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS457G</td>
<td>Data Modeling and Implementation Techniques</td>
</tr>
<tr>
<td>CS464G</td>
<td>Software Design and Implementations</td>
</tr>
<tr>
<td>CS470G</td>
<td>Network Engineering and Management</td>
</tr>
<tr>
<td>CS480G</td>
<td>Java and Internet Applications</td>
</tr>
</tbody>
</table>

II. Core Requirements (12 units)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS501</td>
<td>Advanced Structured Programming and Algorithms</td>
</tr>
<tr>
<td>CS503</td>
<td>Advanced Computer Network Design</td>
</tr>
<tr>
<td>CS506</td>
<td>Advanced Operating System Design</td>
</tr>
<tr>
<td>CS527</td>
<td>Advanced .NET Windows Programming</td>
</tr>
</tbody>
</table>
III. Elective Requirements (9 units)

The student may take any graduate-level courses to meet this requirement. Prerequisite requirements must be met when taking any course. However, the following are suggested elective courses for focused studies:

a. Database Technology: CS540, CS547, CS550
b. Internet Technology: CS526, CS532, CS548
c. Mobile Computing: CS551, CS555, CS556
d. Linux Programming & Administration: CS510, CS515, CS565
e. Network Engineering & Network Security: CS515, CS535, CS575

Practicum: When applicable, the student may take curricular practicum courses and engage in practical training to work on company projects which are directly related to the student’s course of study. The student must observe the rules required for taking the practicum courses.

IV. Capstone Course (3 units)

CS595  Computer Science Capstone Course
Course Descriptions
Master’s Degree Programs, School of Engineering

Master’s degree courses are numbered in the 500s. Each master’s degree program allows for a limited number of credits for 400 level courses with a “G” suffix.

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>450G-490G</td>
<td>Mezzanine courses for graduates</td>
</tr>
<tr>
<td>500-699</td>
<td>Graduate level courses</td>
</tr>
</tbody>
</table>

For information on prerequisite subjects numbered below 450, refer to the section on Course Descriptions for the Undergraduate Degree Programs, School of Engineering.

Courses are listed by subject: Biological Science and Bioengineering, Computer Engineering, Computer Science, Curricular Practicum, Electrical Engineering.

Each course description is followed by its prerequisite information expressed in course numbers.

Each 1 unit of a practicum course requires at least 45 hours of practical experience related to the student’s program curriculum.

Bioengineering

BE450G Introduction to Bioengineering (3 units)
This course presents an overview of the bioengineering and biotech fields. It is intended to build a solid foundation for students who are interested in exploring emerging bioengineering fields such as bioinformatics and biometrics. Topics include fundamentals of biology, cell biology, genes and proteins, molecular genetics, the impact of modern biology on science and medicine, biosensors, biochips, bioinstrumentation, computer-aided diagnosis and biometrics.

Prerequisite: MATH208

BE505 Fundamentals of Bioinformatics (3 units)
This course introduces the fundamental concepts of how present-day bioinformatics applications are employed to enhance the understanding of biological information encoded in genetic or macromolecular sequences. The emphasis on using easily accessible text to illustrate how computational methods work is invaluable to those who have only basic computational backgrounds. All key topics are covered, including biological databases, sequence alignment, gene prediction, molecular phylogenetics, structural bioinformatics, genomics, and proteomics. To gain hands-on experience, projects using current bioinformatics tools are provided.

Prerequisite: BE450

BE510 Biometrics and Computer-Aided Detection (CAD) Technology (3 units)
The course introduces the concepts and principles of biometrics and CAD. Topics include neural networks, fuzzy logic, genetic algorithms, fingerprint, face recognition, voice recognition, computer-aided diagnosis, and their applications and implementation.

Prerequisite: BE450

BE515 Bioinformatics Methodologies (3 units)
This course provides insights into how computer science procedures and techniques are solving bioinformatics problems. Internal workings of modern bioinformatics applications are discussed in the context of analytical models, computational methodologies, and graph theories. Simple modeling concepts are used to explain how popular bioinformatics tools and databases are developed to extract biological information from DNA, RNA, and protein sequences. To gain better understanding of such technical information, students are also encouraged to work on bioinformatics projects.

Prerequisite: BE450

BE550 Advanced Topics on Bioengineering (3 units)
Advanced topics on bioengineering will be given by faculty members or invited guest speakers to expose the students to emerging bioengineering technology.

Prerequisite: BE450

Computer Systems Engineering

CE450G Fundamentals of Embedded Engineering (3 units)
This is the first in a series of embedded systems courses designed for students who are interested in learning real-time embedded systems and practicing real-time programming of embedded systems. Topics include hardware issues including platform, microprocessors commonly used in these systems and how a microprocessor works in such systems, concept of memory, registers, I/O; interrupt generation and handling in an embedded system;
the concept of real-time programming, multi-task, concurrency, mutual exclusion; overview of real-time kernel/OS, drivers; system initialization and startup, and debug issues. Hands-on exercises are required.

Prerequisite: CS380

CE521 Real-Time Systems and Programming (3 units)
This is the second in the embedded systems series. By examining an off-the-shelf real-time operating system, students will gain hands-on experience in real-time operating system programming and implementations. Specific topics include a review of embedded system design, the concept of real-time systems, real-time specification and design techniques, real-time kernels, system performance analysis, memory management, task management, time management, synchronization of inter-task communication, queuing models, real-time operating system tools for embedded systems, and real-time programming examples. Hands-on exercises are required.

Prerequisite: CE450

CE523 Embedded Design in Device Driver Environment (3 units)
This course investigates the operating system (Windows NT, Linux, or Unix) components that interact with device drivers, the device driver building and debugging process, device driver architecture, functionality and the relevant kernel APIs. Topics include: operating system architecture; I/O API; operating system kernel; building, loading and debugging device drivers; device driver entry points; device driver data structures; I/O request processing; plug, play and power management; interrupts and timers; memory management; direct memory access; and timing. The goal of the course is to present comprehensive coverage of the operating system kernel, HAL, device drivers and the related APIs. Upon completion of the course, the student should be able to develop, build, install and test basic device drivers, as well as to port existing drivers from one operating system to another. Hands-on practice is required.

Prerequisite: CE450

CE527 Embedded Systems in Windows CE Environment (3 units)
This is a project-oriented course emphasizing hands-on practice. Students will learn how to create and develop embedded applications in the Windows CE environment. Through extensive hands-on lab work and programming exercises, students learn how to use Windows CE on a new hardware board, install and develop applications in a cross-platform development environment, load an image on the target system, and verify the applications on the target system.

Prerequisite: CE450

CE530 Embedded Software Design in Linux (3 units)
This course prepares students to enter the challenging world of embedded Linux. It covers the following key topics: comparing Linux and traditional embedded environments, comparing leading embedded Linux processors, understanding the details of the Linux kernel initialization process, learning the basic concepts about Linux drivers, learning about the special role of bootloaders in embedded Linux systems - with specific emphasis on U-Boot, using embedded Linux file systems, understanding the Memory Technology Devices subsystem for flash (and other) memory devices, mastering debugging tools such as gdb, KGDB, learning many tips and techniques for debugging within the Linux kernel, learning how to maximize productivity in cross-development environments, learning to prepare an entire development environment, including TFTP, DHCP, and NFS target servers; and learning to configure, build, and initialize BusyBox to support a set of unique requirements. Hands-on exercises are required.

Prerequisite: CE450

CE589 Special Topics (3 units)
Special topics courses are offered to graduate students in Computer Systems Engineering programs by current faculty members or invited guest speakers to expose the students to emerging technologies related to their studies. These courses are conducted the same way as regular courses.

Prerequisite: CE450

CE595 Computer Systems Engineering Capstone Course (3 units)
The capstone course is intended to integrate the knowledge and hands-on experience that the student has acquired from the foundation, core, and elective coursework required for the program in the course under the guidance of the course instructor. The instructor determines the course objectives and scope based on the computer engineering curriculum and technology trend. The instructor guides the students to develop their integration ability. The student shall take the capstone course near the end of his/her program of study.

Prerequisite: CE521

Computer Science

CS453G Compiler Design (3 units)
This course is designed to give students a fundamental knowledge of compilers and interpreters for modern computer languages. Topics include a study of modern computer languages, regular expressions, lexical analysis, parsing techniques, context-free grammars, and syntax-directed translation. Hands-on exercises and trimester projects are required.

Prerequisite: CS350

CS457G Data Modeling and Implementation Techniques (3 units)
This is the first of a series designed to teach relational database concepts, design, and
applications. Topics include database architecture, relational model, structured query language (SQL), data manipulation (DML), data definition language (DDL), database design, ER modeling, database normalization, denormalization, and physical database design. Popular database systems, such as Oracle and Microsoft SQL server, are used for hands-on exercises and projects.

Prerequisite: CS204

**CS464G Software Design and Implementations (3 units)**

This course is designed to use C/C++ to achieve the goal of teaching the students the design methodology for algorithm development. The objective is to develop the students’ programming ability with proper logical and object-oriented thinking processes. The course covers two main topics: (1) Problem specification and analysis - understand the problem, analyze it, and translate the human thinking into a computer program; (2) Object-oriented design and analysis - understand data abstraction, encapsulation, aggregation, and inheritance. These concepts are the foundation for modern object-oriented programming languages such as C, C#, and Java. Hands-on practices are required.

Prerequisite: CS204

**CS470G Network Engineering and Management (3 units)**

This course is designed to give students a global picture of computer networks. Topics include network layered models (OSI, TCP/IP), data communication basics, circuit switching, packet switching, routing, and internetworking. Hands-on exercises are required.

Prerequisite: CS204

**CS480G Java and Internet Applications (3 units)**

This course introduces students to the Java language, programming with object-oriented construct, GUI design and graphics programming, and core Java libraries. Students will learn Java language basics such as syntax and classes, inheritance, interfaces, reflection, graphics programming, event handling, user-interface components with Swing, Java applets, exception handling, stream, and files. Hands-on exercises are required.

Prerequisite: CS360

**CS501 Advanced Structured Programming and Algorithms (3 units)**

This course provides an in-depth analysis and efficient use of algorithms to solve problems. Well-structured programs are studied; modular, top-down design is emphasized. Topics include the use of data structures techniques to design efficient algorithms and analyze their complexity, efficient implementation of combinatorial algorithms, sorting, searching, and geometric problems, and branch and bound algorithms. Hands-on exercises are required.

Prerequisite: CS464G

**CS503 Advanced Computer Network Design (3 units)**

This is the sequel to CS470, Network Engineering and Management, and is designed for an in-depth study of computer networks. Emphasis is on modern Internet technologies and implementations. Topics include a review of computer networks, OSI reference model, a study of emerging Ethernet technologies (Fast, Gigabit), client and server implementation with socket programming, local and wide area networks, TCP/IP, routing, network protocol and architecture, Internet protocol, and IP addressing. Projects are required.

Prerequisite: CS470G

**CS506 Advanced Operating System Design (3 units)**

This course offers graduate students an in-depth understanding and hands-on experience in modern operating system design and implementation. Topics include process, memory, file system, I/O, deadlocks, case studies of operating system implementations, modern distributed and network system architectures, communication and synchronization in distributed systems, threads and processor allocation, scheduling in distributed operating systems, distributed file systems, and case studies of modern distributed operating system design. Projects are required.

Prerequisite: CS464G

**CS510 Advanced UNIX/Linux Programming (3 units)**

This course is designed for students to gain fundamental knowledge of and hands-on experience with programming in the UNIX/Linux environment. Students will learn to program in C with UNIX/Linux system calls and other advanced topics such as the UNIX file system, process control, signals and inter-process communications. Students are required to do a term project with a substantial amount of programming. Upon completion of this course, students should be able to develop real-world UNIX/Linux applications. Hands-on practice and projects are required.

Prerequisite: CS506

**CS515 UNIX/Linux Network Programming (3 units)**

This course is designed for graduate students to gain hands-on experience in UNIX/Linux network programming. The students will learn to develop UNIX/Linux network applications using a number of UNIX/Linux network programming interface techniques including Sockets, XTI, and RPC. Topics include: an overview of transport layer (TCP/UDP), TCP sockets, UDP sockets, threads and client-server design, XTI, RPC, and Streams. Hands-on exercises and projects are required.

Prerequisite: CS506

**CS526 Advanced .NET Web Programming (3 units)**

This course provides students with the knowledge and skills needed to build websites with ASP.NET 2.0, and gain an understanding of the new architecture behind ASP.NET. Topics cover using system types and collections to help manage data, and create and configure web applications; using
Microsoft ADO.NET, XML, and data-bound controls; creating custom web controls; using ASP.NET state management; caching; customizing and personalizing a web application; implementing authentication and authorization; creating ASP.NET mobile web applications; tracing, configuring, and deploying applications; and web services. Hands-on practice is required.  
**Prerequisite: CS480G**

**CS527 Advanced .NET Windows Programming (3 units)**
The goal of this course is to provide students with the knowledge and skills needed to develop C# applications and components for the Microsoft .NET Platform. Topics cover using system types, collections, and generics to help manage data; developing services, application domains, and multithreaded applications; creating a UI for a Windows forms application by using standard controls; using ADO.NET and XML; implementing printing and reporting functionality; enhancing usability; implementing asynchronous programming techniques to improve the user experience; developing Windows forms controls; and configuring and deploying applications. Hands-on practice is required.  
**Prerequisite: CS480G**

**CS532 Advanced Internet Programming and Design (3 units)**
This course is designed to give the students an in-depth understanding of Java programming techniques. The course focuses on advanced Java language features and packages which are essential for building a variety of application architectures. Topics include Java techniques of XML, JNI, thread, network programming, generic programming concepts of JDK-1.5 and beyond, and internalization. Upon completion of this course, the students should be well prepared to create enterprise-wide, Java-centric solutions to client/server problems involving Java and networks. Each technology topic will cover its uses, implementation, and language issues. Students are required to implement a project for each Java technique. Hands-on exercises are required.  
**Prerequisite: CS480G**

**CS535 Network Security Fundamentals (3 units)**
This course addresses the security issues on the internet and the web. Major topics include issues related to internet infrastructure and applications running on the internet, techniques to reduce security risks, and an introduction to the role of security as an enabling technology for electronic commerce. The course includes an overview of internet and web security, its applications and legal issues, encryption and cryptography, SSL and browsers, web servers, and Java security.  
**Prerequisite: CS503**

**CS536 Modern Internet Technology Design and Applications (3 units)**
This course introduces Java 2 platform Enterprise Edition (J2EE/JEE) of which the Enterprise JavaBean (EJB) component architecture is a vital piece. With J2EE/JEE, one can rapidly construct distributed, scalable, reliable, and portable secure server-side deployments. Although J2EE/JEE is a conglomeration of concepts, programming standards, and innovations, this course will focus on EJB, JNDI, transaction and security aspects of J2EE/JEE with real-world programming examples. Hands-on practice and projects are required.  
**Prerequisite: CS480G**

**CS540 Advanced Database Administration (3 units)**
This course provides an in-depth understanding of the Oracle Database Management System. Emphasis is on the latest Oracle database architecture, database configuration and administration. Topics include logical/physical database layout, database server processes, database creation, various database physical objects; client/server configuration, multi-threaded server configuration, database storage management, database security, database utilities, database monitoring, partitions, and database backup/recovery methods. Hands-on practice is required.  
**Prerequisite: CS457G**

**CS547 Advanced Database Design and Analysis (3 units)**
This course is intended for graduate students to further explore database server development and database tuning. The course specifically details procedural extensions to SQL to develop stored procedures, functions, packages and database triggers. In addition, it covers database performance tuning from an application development point of view by exploring query optimizer, database hints, and various database access methods. Hands-on exercises are required.  
**Prerequisite: CS457G**

**CS548 Advanced Database and Internet Server Programming (3 units)**
This course covers the fundamental concepts of the 3-tier model, internet database access, and major tools and techniques utilized in application development. Topics include N-tier model, JDBC with database applications, Java Servlet, JSP and JavaBean, WML, and XML. In addition, the students will learn the best practice development approach using Sprint Framework to achieve MVC model as well as Hibernate on how to map business domain object model to underline relational database. At the end of this course, the students shall have a fresh view on both the fundamental and advanced skills to implement large scale enterprise systems. Hands-on exercises are an integral part of the course.  
**Prerequisite: CS480G**
CS550 Data Mining and Business Intelligence (3 units)
This course introduces methods and techniques for using stored business data to make business decisions. The student will learn data types including operational or transactional data such as data for sales, cost, and inventory; nonoperational data such as forecast data and macroeconomic data; and meta data, and learn their patterns, associations, or relationships, and how to use these information for decision making. Modern datawarehouse concepts will also be introduced. Specific examples of businesses using data mining techniques will be given in the course. The student is required to work on course projects by using modern data analysis software and referring to cases studied.
Prerequisite: CS457G

CS551 Mobile Computing for Android Mobile Devices (3 units)
Google's Android mobile phone software platform may be the next major opportunity for application software developers. Android has the potential for removing the barriers to successful development and sales of a new generation of mobile phone application software. Just like PCs which have created markets for desktop and server software, Android will create a new market for mobile applications by providing a standard mobile phone application environment. This hands-on course focuses on developing applications for Android, including map-based applications, camera-based applications, SMS, etc. Advanced development topics are also covered, including security, IPC, and certain advanced graphics and user interface techniques.
Prerequisite: CS503

CS555 Developing Applications for Windows Mobile Environment (3 units)
This course focuses on the unique challenges, methods, tools, and technologies for using Windows Mobile to develop software applications for wireless and mobile devices, such as personal digital assistants (PDA) and smart mobile phones. Topics include user interface design for small-screen, multi-channel devices, programming techniques and memory management for devices with limited memory and processing power, data synchronization for mobile databases, and wireless network programming.
Prerequisite: CS503

CS556 Mobile Applications on iPhone Platform (3 units)
This course provides an in-depth study of the design, development and publication of object-oriented applications for the iPhone and iPod Touch platforms using the Apple SDK. Students will learn to utilize Objective-C and the various SDK frameworks to build iPhone & iPod touch applications under Mac OS X.
Prerequisite: CS360

CS565 Advanced Network Management (3 units)
This course is designed to give graduate students an in-depth understanding of and a hands-on experience in the management of network systems and applications. Emphases are on simple network management protocol (SNMP) management, MIB, management tools, system and applications. Current widely-used applications by industry will be used to demonstrate the management concepts. Computer-based training software will be used to check/verify the students' network management skills in order to ensure they are prepared for the industry challenges. Topics include Network Management fundamentals; OSI-MAN, SNMP and TMN standards; RMON and ITU TMN architecture; inside structure and practical applications of SNMP, SNMP2, SNMP3, RMON, RMON2, and MIBs. Hands-on exercises are required.
Prerequisite: CS503

CS575 Network Analysis and Testing (3 units)
This course covers computer network analysis, testing techniques, and experience-based strategies to isolate and solve network problems. Topics include wiring and cable testing issues, transmission encoding techniques, dissecting the IEEE 48-bit MAC address, the impact of different types of broadcast traffic, operational details and analysis considerations for switches, Ethernet and Token Ring operational details and analysis, the IEEE 802.2 LLC protocol, datagrams and routing, IP specifics, protocol analysis and troubleshooting, baselining throughput and latency. Hands-on exercises using protocol analyzer are required to reinforce the topics.
Prerequisite: CS503

CS589 Special Topics (3 units)
Special topics courses are offered to graduate students in the Computer Science program by current faculty members or invited guest speakers to expose the students to emerging technologies related to their studies. These courses are conducted the same way as regular courses.
Prerequisite: CS4546G

CS595 Computer Science Capstone Course (3 units)
The capstone course is intended to integrate the knowledge and hands-on experience that the student has acquired from the foundation, core, and elective coursework required for the program in the course under the guidance of the course instructor. The instructor determines the course objectives and scope based on the computer science curriculum and technology trend. The instructor guides the students to develop their integration ability. The student shall take the capstone course near the end of his/her program of study.
Prerequisite: CS506
Curricular Practicum

CPT501 Curricular Practicum (1 unit)
Curricular practicum, or curricular practical training, is a supervised practical experience that is the application of previously studied theory. It is defined as alternative work/study, internship, cooperative education, or any other type of required internship or practicum that is offered by sponsoring employers through cooperative agreements with the school and the course is an integral part of an established curriculum. At least three hours of work in a practical setting has the credit equivalency of one hour of classroom lecture (1 unit). To be eligible to take this course, the student must have completed at least two semesters of coursework required in his/her degree program, obtained a written agreement that outlines the arrangement between the institution and the practicum site (including specific learning objectives, course requirements, and evaluation criteria), and received approval by a designated advisor. International students must follow additional rules required by the U.S. Immigration and Customs Enforcement. The student must use NPU’s online tool to submit his/her application for taking this course before meeting with a designated advisor for an assessment of eligibility. Information and instructions concerning this course are provided in the application form. This is a full-time practicum course taken by the graduate student to work more than twenty hours each week during the approved practicum period. Failure in this course will prevent the student from taking any curricular practicum course afterwards.
Prerequisite: Refer to the instructions on the application and agreement documents.

CPT502 Curricular Practicum (2 units)
Curricular practicum, or curricular practical training, is a supervised practical experience that is the application of previously studied theory. It is defined as alternative work/study, internship, cooperative education, or any other type of required internship or practicum that is offered by sponsoring employers through cooperative agreements with the school and the course is an integral part of an established curriculum. At least three hours of work in a practical setting has the credit equivalency of one hour of classroom lecture (1 unit). To be eligible to take this course, the student must have completed at least two semesters of coursework required in his/her degree program, obtained a written agreement that outlines the arrangement between the institution and the practicum site (including specific learning objectives, course requirements, and evaluation criteria), and received approval by a designated advisor. International students must follow additional rules required by the U.S. Immigration and Customs Enforcement. The student must use

Electrical Engineering

EE450G Systems Analysis and Simulations (3 units)
This course is an introduction to the basic concepts and principles of signals and systems. Both analog and digital signal processing techniques will be covered. Topics include analog signals and systems, digital signals and systems, LTI systems, Fourier transform, Z-transform, FFT, system stability, digital filter design, and network. Matlab software will be used to implement some of the DSP algorithms.
Prerequisite: MATH205

EE453G Modern Software Techniques for Electrical Engineering (3 units)
This course is designed to provide the MSEE students with hands-on experience in the Unix/Linux environment and necessary skills in C/C++ programming languages. This course will cover the essentials of the logic of a structured computer language, Unix/Linux shell programming, the basic Matlab script programming, and Hspice for circuit simulation. This course will be taught with extensive practical applications in hardware design.
Prerequisite: EE323

EE461G Digital Design and HDL (3 units)
This course develops the students’ ability to design commonly used basic building blocks of modern digital systems and provides them with a fundamental knowledge of the state-of-the-art design methodology, design considerations, and verification strategies for complicated digital hardware design. Topics include Verilog HDL basics, Logic modeling, state machine design and memory modeling using Verilog HDL. Additional topics on FPGA architectures, device vendors, FPGA design tools, FPGA applications and latest trend in the programmable logic industry are also covered. Students can use Verilog tools such as Synopsys VCS, Mentor Modelsim, Cadence NC Verilog, and Silo III Verilog Simulator from SimuCAD for their homework and design projects. Hands-on practice is required. Students are encouraged to take the HDL based sequence of courses EE461, EE510 and EE512 to gain
knowledge and experience in semi-custom IC design using industry grade EDA design tools.  
Prerequisite: EE323

**EE466G Introduction to Nanotechnology (3 units)**
This course is an introduction to the science of nanotechnology, tools, and applications of nanotechnology to various fields. Topics include: nano-electronics, spintronics and quantum computer, novel man-made materials such as carbon nano-tube, nano-characterization and nanofabrication; applications to medicine, health, defense, security, green energy technology, and electronics; impact to environment and society, business, investment, and intellectual property. 
**Prerequisite:** MATH208

**EE468G Microelectronics Circuit Design and Analysis (3 units)**
This course provides an in-depth understanding of electronic circuit design and analysis at the transistor level. It is in preparation for studying more advanced analog or digital courses. The topics include differential and multistage amplifiers, current source and bias circuits, amplifier frequency response and feedback, output stages, operational amplifier, inverter, combinational logic, and sequential logic. The lab is run in conjunction with the course material and industry standard CAD tools are applied.
**Prerequisite:** EE302

**EE488G Computer Architecture (3 units)**
This course is intended to lay a solid foundation for the design of modern computer systems. The topics covered include instruction set design, computer arithmetic, basic ALU functional blocks, control and datapath of a simple CPU, the concept of pipelining and hazards, memory hierarchy and cache design, I/O, and introduction to parallel processing. Several hands-on labs require a background in an HDL language such as Verilog, and the MIPS assembly instruction simulator such as SPIM.
**Prerequisite:** EE461

**EE504 Advanced Computer Architecture (3 units)**
This course is designed to further investigate modern computer design. Topics include an in-depth study of multiprocessor architecture and interconnection networks, pipeline, data flow, algorithm structures, memory system design, cache memory design, and a comparison of the performance and design among various computer architectures. Hands-on project experience is required.
**Prerequisite:** EE450G

**EE505 Advanced Digital IC Design (3 units)**
EE505 is an advanced course in digital circuit design that applies the knowledge of advanced circuit design concepts to Digital IC in state-of-the-art CMOS technologies. It emphasizes the design and optimization of circuit/layout for combinational logic gates, sequential logic circuits, arithmetic building blocks, and memory circuits. The challenges of today's digital integrated circuit design, such as scaling, process variation, signal integrity, timing issues, interconnectivity, and power consumption will be addressed specially. The circuit simulation tool (HSPICE), layout design tool (Virtuoso), and schematic entry tool (Composer) are used for homework assignments and projects.
**Prerequisite:** EE468G

**EE508 VLSI Design - Place and Route (3 units)**
This course is the third in the VLDI Design series and introduces ASIC place and route. The course introduces the students to state-of-the-art physical design automation tools and techniques. Topics include design flow, library review, tool graphical interface, floor planning, power planning, timing driven placement, static time analysis (STA), CT-Gen, special routing, final routing, engineering change order (ECO), and run batch mode jobs. Hands-on exercises and projects are required.
**Prerequisite:** EE461G

**EE509 Mobile and Wireless Communication (3 units)**
This course covers the concept of frequency re-use, wireless communication channel characteristics, modulation and demodulation for wireless communications, equalization and channel coding, speech coding, multiple access techniques such as FDMA, TDMA, CDMA, FDD and TDD, and commercial wireless communication standards such as AMPS, GSM, IS136 (TDMA), IS-95 (CDMA). Hands-on simulations are used to help students gain an in-depth understanding of wireless communication. Familiarity with communication theory and simulation tools such as MATLAB or system view is required. (Note: This is an introductory course on wireless technologies. Any topic, such as GSM, TDMA, or CDMA can be expanded to a full-trimester course under Special Topics offerings.)
**Prerequisite:** EE450G

**EE511 Advanced Analog IC Design (3 units)**
This course offers students extensive exposure to concepts and techniques in analysis and design of analog IC, including device modeling, basic circuit building blocks, feedback system, frequency response and noise. EDA tools may be used in homework assignments and projects.
**Prerequisite:** EE505

**EE512 Application Specific Integrated Circuit Design (ASIC) (3 units)**
In connection with EE461, this course is designed for students who intend to become logic designers using HDL based design methodologies. Topics include ASIC/CPLD/FPGA Library modeling, cell characterization, static timing analysis, place and route algorithms, design for testability, fault modeling, industry standard formats for design information interchange, and a survey of the most popular EDA tools. Industry grade design tools such as Synopsys Design Compiler, Cadence
Verilog-XL, Synopsys DesignTime (under dc_shell), Synopsys Prime Time, Cadence Silicon Ensemble, Mentor Calibre LVS/DRC, and Synplicity Synplify are used for homework assignments and projects.

**Prerequisite:** EE505

**EE520 Advanced FPGA Design and Implementations** (3 units)
Digital design using FPGAs is a very important activity in industries due to reduced cost, compared with ASIC design, and faster time-to-market. In order to design a digital system using FPGA, the designers must understand the architectures of the FPGA as well the accompanying CAD tools. The course will cover two major Xilinx FPGA architectures in detail. The student will learn to build various digital blocks such as combinational logic, sequential logic, finite state machines, RAM and DSP by studying the architectures of the FPGAs. Hands-on practices are required.

**Prerequisite:** EE505

**EE581 Electrons, Photons, and Nanotechnology** (3 units)
Electrons and photons play a key role in nanotechnology. This course introduces the basics of the application of electrons and photons to nanotechnology. Topics include: Rationale - Why are electrons and photons so important in nanotechnology? The electron: basic electron properties, electrons as waves and their description and application. The photon: basic photon properties, particle and wave aspects. Hands-on computer simulation in nanotechnology. Renewable energy: sources of renewable energy, solar cell basics, use of nanotechnology to harvest solar energy. Memristors: new nanotechnology approaches to information storage. Spintronics: basic concepts, application to magnetic memory, characterization and manipulation of magnetic nanostructures. Nano-optics: overcoming the diffraction limit; use of subwavelength light localization to detect, image, and investigate individual nanostructures. Protein crystallography: use of synchrotron photons to probe the structure of biological molecules. Student participation in mini-projects and a final written report will be required. The course will include class visits to nanotechnology companies, and to state-of-the-art nanotechnology centers at the national research laboratories and universities in the San Francisco Bay Area.

**Prerequisite:** EE466G

**EE583 Introduction to Nanoelectromechanical Systems (NEMS)** (3 units)
Nanotechnology plays a vital role in the 21st Century. Nanoparticles and nanostructures represent a scale of matter where radically different phenomena are manifested. The unique mechanical, electronic, magnetic, optical, and chemical properties open the door to an enormous new domain of engineered nanostructures and integrated nanodevices with the prospect of various innovative applications in every aspect of life. The NEMS is a broad field which includes integrated nano-sensors, nano-actuators, nano-instruments, nano-optics, nano-fluidics, etc. Its applications range from automobile airbag deployment systems, ink jet printer heads, and movable mirror array for color projection displays, to atom probes for imaging and transporting atoms. Students will also learn the context of nanomanufacturing: fabrication, analysis and synthesis processes, instrumentation for characterization, and integration of nanodevices and systems.

**Prerequisite:** EE466G

**EE589 Special Topics** (3 units)
Special topics courses are offered to graduate students in the electrical engineering program by current faculty members or invited guest speakers to expose the students to emerging technologies related to their studies. These courses are conducted the same way as regular courses.

**Prerequisite:** EE450G

**EE595 Electrical Engineering Capstone Course** (3 units)
The capstone course is intended to integrate the knowledge and hands-on experience that the student has acquired from the foundation, core, and elective coursework required for the program in the course under the guidance of the course instructor. The instructor determines the course objectives and scope based on the electrical engineering curriculum and technology trend. The instructor guides the students to develop their integration ability. The student shall take the capstone course near the end of his/her program of study.

**Prerequisite:** EE505
**Doctorate Degree Program**

The School of Engineering offers one terminal degree program, Doctor of Computer Engineering (DCE).

The doctorate degree program is designed for the students to attain specialized and practical competence in the field of study in computer engineering and in the workplace. The DCE program is offered with the emphasis on practical and real-world applications in both the coursework and the doctoral dissertation requirements.

- **Objectives**

  The doctorate degree program in computer engineering emphasizes both mastery of subject matter as well as an understanding of related research and research methodology for professional-oriented projects/dissertations. The program aims to develop the student’s ability to integrate knowledge and apply practical research to address problems and issues in the workplace. It is designed for the student to accomplish specified goals and objectives and contribute to competence in the subject area or profession at an advanced level.

- **Doctoral Program Committee**

  The DCE program is governed by its Doctoral Program Committee. The committee is responsible for developing, modifying, and maintaining the doctorate degree program. Committee members include qualified NPU faculty and administrators as well as other qualified professionals or practitioners. The committee is knowledgeable in methods of research and in the subject matter, chaired by a credentialed individual with expertise in the program area. The doctoral students work with the committee members to pursue their doctoral studies.

  The [doctorate degree program](#) also receives advice and guidance from its [Advisory Board](#) comprised of members from similar accredited doctoral programs and past or future employers of the graduates.

- ** Applicant Qualifications**

  1. Earned master’s degree with a cumulative GPA of 3.0 or above from an institution accredited by an agency recognized by the U.S. Department of Education; a previous degree in a related field is preferred.

     A bachelor’s degree in electrical engineering, computer engineering, computer science, or related field is required. A further master’s degree in electrical, electronics, or computer engineering is preferred.

  2. Strong interest in advanced study in the chosen subject area,

  3. Independent research ability,

  4. English proficiency,

  5. Previous work experience related to student’s field of study is preferred. Students with no or little experience in the work environment they will be prepared to enter will be required to conduct curricular practicum before graduation.

- **Application Material**

  1. A completed application form for the doctorate degree program (online application is available),

  2. Application fee,

  3. Official transcripts from all colleges and universities attended and certified degree document(s). All official transcripts must be received before the admission evaluation. Applicants enrolled in courses at another institution at the time of application will have 60 days after the completion of the courses to provide the updated transcript. Any other transcripts submitted after the admission evaluation will not be accepted. Failure to observe this requirement will result in placement of the student in a non-degree status.

  4. **English Requirement**

     (a) International students (holding F1 status) should have English skills to effectively communicate with faculty, staff, and other students. A TOEFL score of 550 on paper-based test, or 213 on computer-based test, or 79 on internet-based test, or an IELTS score of 6.5 is required to enter the doctorate degree program.

     (b) Non-international students (with non-F1 status) whose native language is English or who used English as the official language in their undergraduate studies are considered meeting the English entrance requirement. Others follow the same requirements as that for international students described in (a). Those who are in the U.S. at the time of application for admission have the option to take the on-campus English Placement exam (EPE) in place of TOEFL/IELTS before admission evaluation will be made for them. The EPE passing score
for the doctoral program applicants is higher than that for the other applicants.

5. **Entrance Exam**: Applicants are required to take either the GRE or the on-campus equivalent test before or on the New Student Orientation Day. For taking the GRE administered by the ETS, NPU’s **Institution code for reporting the GRE scores is 5485**. The score is primarily used for reference and analysis purposes.

6. **A professional work history or a professional vita.** Applicants with prior work experience in his/her study field must also submit an employment certification letter issued by the previous employer to certify the following for the applicant: Company name and address, supervisor’s name and contact information, applicant’s previous job title, and a brief job description.

7. Each applicant to the DCE program is required to submit a **Statement of Purpose** (SOP). The SOP must describe the applicant’s background preparation, motivation, and reason why he/she considers him/herself having the qualifications to pursue the DCE degree; it must also describe the applicant’s research interest.

8. An international applicant is also required to submit the following additional documents: a financial support document – either the applicant’s bank statement or a certified affidavit of support (form I-134 or equivalent) from a financial sponsor indicating a minimum amount of $25,000 available for the applicant to pursue his/her study in the first academic year at NPU. A transfer student is required to submit (a) a photocopy of his/her previous I-20 form and request that the previous international student advisor complete the International Student Transfer Record form for NPU and conduct the required SEVIS transfer process, and (b) photocopies of the student’s passport, visa, and I-94 (admission & departure) document upon arrival at NPU.

- **Notification of Admission**

Normally, prospective students may expect to receive notification of admission status within two weeks after filing complete application materials with the Admissions Office.

- **Cancellation of Admission**

If an applicant is accepted into a doctorate degree program for a given semester and does not begin classes in that semester, admission will automatically be canceled. The prospective student’s application records (transcripts from previous colleges, financial support documents for international students, and standardized test scores) are kept on file for a period of six months from the semester start date. If the applicant then wishes to be considered for readmission in a later semester, he/she will be required to resubmit an application form and pay the application fee. A reevaluation of admission will be made for the applicant.

- **Transfer of Credit**

If the applicant’s previous master’s degree is in the field of electrical engineering, computer engineering, or computer science, a maximum of 36 graduate units may be granted as transfer credits. If the previous master’s degree is in a different field, a maximum of eighteen (18) graduate semester units may be transferred towards the doctorate degree. Course credits to be transferred must be earned with a grade of B- or better.

**Definition of a Trimester/Semester Unit:**

One trimester/semester credit hour equals, at a minimum, 15 classroom hours of lecture, 30 hours of laboratory, and 45 hours of practicum.

**Conversion Factor:**

\[
1 \text{ quarter unit} = 0.66 \text{ trimester/semester unit}
\]

- **Admission Evaluation**

The admission committee for the DCE program will conduct an admission evaluation for each applicant based on the official records received from the applicant. An evaluation report will be generated for the applicant; it includes an academic background evaluation and credit transfer information. A layout of the program requirements is also given in the report.

The background requirements for the DCE program are specified in the section of “Background Preparation” near the beginning of the program description.

- **Tuition**

Tuition for courses taken to fulfill the graduation requirements for the Doctor of Computer Engineering program is $450/unit.
Refer to the sections on “Tuition and Fees” and “Refund Policy” in this catalog for other fees and refund information.

- **Academic Information**

Refer to the section on “Academic Information” in this catalog for the academic policies and regulations observed by all students.

- **Graduation Requirements**

1. **A minimum of 96 semester units** beyond the bachelor’s degree are required to complete the study of a doctoral degree program, including **84 units of coursework** plus a minimum of **12 units in doctoral dissertation** or a comprehensive research project. Transferred graduate credits, up to 36 semester units, are included in the total requirements.

2. **Length of Study**: The length of study in a doctorate degree program is at a minimum of three (3) years or nine (9) semesters and a maximum of seven (7) years. The normal length of study for a student with a master’s degree is 3-5 years. Request for an extension of the study period beyond 7 years due to special reasons requires approvals by both the Doctoral Program Committee and the School Dean.

3. The DCE curriculum is presented in a sequence of course categories in the order of the level of study involved, ending with the doctoral dissertation courses. Courses numbered in the 500’s and above are graduate courses. A number of courses numbered in the 400’s with a “G” suffix are scheduled among the required foundation courses and the students may earn graduate credit by taking these courses at NPU.

   The doctoral student is advised to take the required courses following the specified sequence unless the student receives permission from the registration advisor.

   The goal of the dissertation research is to apply technologies, knowledge, or concepts in a new way to a workplace problem.

4. Upon entering the DCE program of study, the student is required to **select a concentration area**.

5. All courses require appropriate usage of research and learning resources.

6. **Checkpoint**: When the DCE student completes the Foundation Requirements and the Concentration Area Requirements (chosen by the student), the DCE program administrator will conduct a review of the student’s academic records. If the student has made satisfactory progress by maintaining at least a 3.0 CGPA, he/she will be notified to take three (3) written **Qualifying Examinations (QE)**. The QE consist of three (3) subject areas: Two subjects are among the Foundation Requirements subjects and the third subject is in the area of the student’s chosen concentration area.

   A DCE student failing the QE the first time may be given a second and last chance to take the exams after six (6) months. The second exam must be taken within one year after the first exam. Failing the QE the second time will disqualify the student from a pursuit of the DCE degree.

7. **Dissertation**: Each doctoral student’s dissertation or comprehensive research project must be reviewed, evaluated, and assessed by the Dissertation Committee (DC) approved by designated members of the Doctoral Program Committee of the DCE program; the DC must include at least one individual who is either from another appropriately accredited institution within the subject area or a professional who has earned a terminal degree. A dissertation advisor closely monitors the student’s dissertation work. The student receives either an “S” or letter grade for satisfactory performance and earns the credits or an “NP” grade for unsatisfactory performance without earning credit in each semester the doctoral dissertation/project course is taken by the student.

8. The doctoral student is required to maintain a minimum of 3.0 CGPA every semester during the entire tenure of study. In addition, a grade of “B” or better is required in all courses. A doctoral student on academic probation status is given one semester to regain the required CGPA. Failure to do so will result in a dismissal of the student from the doctorate degree program.

9. Students enrolled in the doctoral dissertation or project courses must follow the requirements specified in the Doctoral Student Handbook for the DCE program. A student unable to complete the dissertation or project after earning 12 units in the dissertation/project course is required to continue to enroll in the 6-unit doctoral dissertation course part-II as a continuing student and pay at the regular unit tuition rate until completion of the dissertation/project. Extra credits earned for repeatedly taking the dissertation/project cannot substitute other course requirements.

10. Students with no or limited experience in the work environment they are prepared to enter are required to engage in curricular practicum before
graduation. A student may earn a maximum of 6 credit units through practicum.
11. An approved petition for graduation must be on file.
12. The student must maintain good standing with the University.

Student Discipline, Student life, and Facilities

Refer to the sections on “Student Discipline”, “Student Life”, “Facilities”, and others for relevant information unless otherwise stated in this section on “Doctorate Degree Programs”.

Faculty

All faculty members serving as doctoral dissertation/project or academic advisors possess graduate and terminal degrees, have demonstrated proper academic preparation and experience, and hold the same educational philosophy consistent with the University to encourage the best efforts of each learner. Faculty members are encouraged to engage in practical or scholarly research and to publish in professional journals.

Faculty members are to inspire, motivate, and direct student usage of the learning resources.

Library & Instructional Resources

Library and instructional resources are vital to the faculty as well as the doctoral students in their teaching/learning and research activities. The school is equipped with its on-campus learning facilities as well as the online learning resource environment to meet such needs. In this catalog, detailed information is described in the sections on “Teaching and Research Facilities” and “The University Library and Digital Campus”. In addition, the university learning resource facilities provide a specific research tool to support the doctoral students in their coursework and research activities.

Doctor of Computer Engineering (D.C.E.)

Program Administrator: Dr. Henry Chang, D.C.E.

Objectives: The DCE degree program is intended to develop the student’s ability in advanced academic study, practical research, and professional expertise in computer engineering. The learning shall not only lead to an understanding of the complex modern computer engineering technology and systems but also develop the ability of innovative thinking and technology integration. Current research emphases are in the fields of IC design, SOC design and nano-domain system integration, intelligent and ubiquitous embedded system development and applications, and the newly emerging green technology such as cloud computing, virtualization, and mobile technology and applications.

Background Preparation

Students admitted into the DCE degree program are required to have proper computer engineering background preparation for taking the graduate level coursework. The DCE Admissions Committee is responsible for making an evaluation of each applicant’s academic background to determine whether there are any deficiencies the applicant is required to clear.

D.C.E. Curriculum

A minimum of 96 semester units of graduate study beyond a bachelor’s degree are required for the DCE program. Among them, 84 units are required to be graduate coursework and a minimum of 12 units are in doctoral dissertation or comprehensive research project work. Courses at the 4xxG level in the Foundation Requirements must be taken at NPU in order to earn graduate credits. The student must meet prerequisite requirements when taking any of the following courses.
Near the beginning of the student’s study in the DCE program, the student must select a concentration area of study which will lead to his/her future dissertation research effort. The following are the available choices:

- VLSI and Nano-domain Design
- Embedded Systems Design
- Network Engineering
- Internet Technology and Mobile Computing

The Foundation Requirements are the first group of courses that the student is required to take.

I. **Foundation Requirements** (First semester of study - 12 units)

*(Fundamentals of embedded engineering, network engineering fundamentals, engineering software, systems analysis and simulation techniques)*

Courses listed in this section should be completed by the student in the first semester of study in the program.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE450G</td>
<td>Fundamentals of Embedded Engineering</td>
<td>(3)</td>
</tr>
<tr>
<td>CS470G</td>
<td>Network Engineering and Management</td>
<td>(3)</td>
</tr>
<tr>
<td>EE450G</td>
<td>Systems Analysis and Simulations</td>
<td>(3)</td>
</tr>
<tr>
<td>EE453G</td>
<td>Modern Software Techniques for Electrical Engineering</td>
<td>(3)</td>
</tr>
</tbody>
</table>

II. **Area of Concentration** (First year of study - 18 units)

Following the Foundation Requirements, the student must select a concentration area of study and take the required courses in the first year of DCE study. The DCE student must select one of the following concentration areas.

**Area A. VLSI and Nano-domain Design**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE461G</td>
<td>Digital Design and HDL</td>
<td>(3)</td>
</tr>
<tr>
<td>EE466G</td>
<td>Introduction to Nanotechnology</td>
<td>(3)</td>
</tr>
<tr>
<td>EE504</td>
<td>Advanced Computer Architecture</td>
<td>(3)</td>
</tr>
<tr>
<td>EE505</td>
<td>Advanced Digital IC Design</td>
<td>(3)</td>
</tr>
<tr>
<td>EE509</td>
<td>Mobile and Wireless Communication</td>
<td>(3)</td>
</tr>
<tr>
<td>EE511</td>
<td>Advanced Analog IC Design</td>
<td>(3)</td>
</tr>
</tbody>
</table>

**Area B. Embedded Systems Design**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS464G</td>
<td>Software Design and Implementations</td>
<td>(3)</td>
</tr>
<tr>
<td>CS501</td>
<td>Advanced Structured Programming and Algorithms</td>
<td>(3)</td>
</tr>
<tr>
<td>CS503</td>
<td>Advanced Computer Network Design</td>
<td>(3)</td>
</tr>
<tr>
<td>CS506</td>
<td>Advanced Operating System Design</td>
<td>(3)</td>
</tr>
<tr>
<td>CE521</td>
<td>Real-time Systems and Programming</td>
<td>(3)</td>
</tr>
<tr>
<td>CE523</td>
<td>Embedded Design in Device Driver Environment</td>
<td>(3)</td>
</tr>
</tbody>
</table>
Area C. Network Engineering  
(Requires a background in CS506)

- CS503 Advanced Computer Network Design (3)
- CS510 Advanced Unix/Linux Programming (3)
- CS515 Unix/Linux Network Programming (3)
- CS535 Network Security Fundamentals (3)
- CS565 Advanced Network Management (3)
- CS575 Network Analysis and Testing (3)

Area D. Internet Technology and Mobile Computing  
(Requires a background in CS464G)

- CS480G Java and Internet Applications (3)
- CS501 Advanced Structured Programming and Algorithms (3)
- CS503 Advanced Computer Network Design (3)
- CS506 Advanced Operating System Design (3)
- CS527 Advanced .NET Windows Programming (3)
- CS551 Mobile Computing for Android Mobile Devices (3)

Qualifying Examinations (QE): The QE consist of three (3) subject areas: Two subjects are among the Foundation Requirements subjects and the third subject is in the area of the student’s chosen concentration area.

After the student has passed the Qualifying Examinations (QE), he/she is allowed to continue in the DCE program and begins to take courses listed in the following section. The student is now a DCE candidate.

III. Post-Candidacy Requirements (Second year of study - 9 units)  
(Research methodology)

Courses described in this section III should be taken immediately after the student has passed the QE.

<table>
<thead>
<tr>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>DCE601</td>
</tr>
<tr>
<td>DCE602</td>
</tr>
<tr>
<td>LAW670</td>
</tr>
</tbody>
</table>

IV. Advanced Studies (Second to third years of study - 24 units)

The student must take graduate courses, numbered at the 500 level or above, in the computer engineering area (courses with EE, CE, CS designations). The student receives consultation from course advisors when taking these courses. Due to fast-paced technological advancements in the computer hardware and software industries, NPU’s engineering program committees update the engineering courses regularly; new advanced courses have regularly been proposed by the engineering faculty members. Courses approved by the program committees are added to semester course offerings between publications of the school catalog. The student is advised to take a sufficient number of topics at this level to gain knowledge and skills beneficial to the student’s dissertation research work.

V. Electives (Third to fourth years of study - 21 units)

The student is required to take any graduate courses numbered at the 500 level or above to meet the electives requirement.

Practicum: When applicable, the student may take curricular practicum courses and engage in practical training to work on company projects which are directly related to the student’s dissertation research or course of study. The student must observe the rules required for taking the practicum
courses. Students without prior practical experience in related fields are required to engage in curricular practicum.

VI. Doctoral Dissertation (Fourth to fifth years of study - 12 units)

A Dissertation Committee (DC) must be formed and approved by the DCE Program Committee before the student starts his/her doctoral research. The doctoral candidate is required to earn a minimum of **12 units** in work towards completion of the doctoral dissertation to meet the graduation requirement. Dissertation proposal presentation and dissertation defense requirements are described in the DCE Student Handbook.

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Description</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>DCE698</td>
<td>Dissertation – I</td>
<td>6</td>
</tr>
<tr>
<td>DCE699</td>
<td>Dissertation – II</td>
<td>6</td>
</tr>
</tbody>
</table>

Course Descriptions
Doctor of Computer Engineering Program, School of Engineering

Doctorate degree courses are numbered in the 500s and above. The DCE degree program allows for a limited number of credits for 400 level courses with a “G” suffix in the Foundation Requirements.

For information on prerequisite subjects numbered below 450, refer to the section on Course Descriptions for the Undergraduate Degree Programs, School of Engineering.

Courses are listed by subject: Computer Engineering, Computer Science, Curricular Practicum, Electrical Engineering.

Each course description is followed by its prerequisite information expressed in course numbers.

Each 1 unit of a practicum course requires at least 45 hours of practical experience related to the student’s program curriculum.
Computer Systems Engineering

CE450G Fundamentals of Embedded Engineering (3 units)
This is the first in a series of embedded systems courses designed for students who are interested in learning real-time embedded systems and practicing real-time programming of embedded systems. Topics include hardware issues including platform, microprocessors commonly used in these systems and how a microprocessor works in such systems, concept of memory, registers, I/O; interrupt generation and handling in an embedded system; the concept of real-time programming, multi-task, concurrency, mutual exclusion; overview of real-time kernel/OS, drivers; system initialization and startup, and debug issues. Hands-on exercises are required.
Prerequisite: CS380

CE521 Real-Time Systems and Programming (3 units)
This is the second in the embedded systems series. By examining an off-the-shelf real-time operating system, students will gain hands-on experience in real-time operating system programming and implementations. Specific topics include a review of embedded system design, the concept of real-time systems, real-time specification and design techniques, real-time kernels, system performance analysis, memory management, task management, time management, synchronization of inter-task communication, queuing models, real-time operating system tools for embedded systems, and real-time programming examples. Hands-on exercises are required.
Prerequisite: CE450

CE523 Embedded Design in Device Driver Environment (3 units)
This course investigates the operating system (Windows NT, Linux, or Unix) components that interact with device drivers, the device driver building and debugging process, device driver architecture, functionality and the relevant kernel APIs. Topics include: operating system architecture; I/O API; operating system kernel; building, loading and debugging device drivers; device driver entry points; device driver data structures; I/O request processing; plug, play and power management; interrupts and timers; memory management; direct memory access; and timing. The goal of the course is to present comprehensive coverage of the operating system kernel, HAL, device drivers and the related APIs. Upon completion of the course, the student should be able to develop, build, install and test basic device drivers, as well as to port existing drivers from one operating system to another. Hands-on practice is required.
Prerequisite: CE450

CE527 Embedded Systems in Windows CE Environment (3 units)
This is a project-oriented course emphasizing hands-on practice. Students will learn how to create and develop embedded applications in the Windows CE environment. Through extensive hands-on lab work and programming exercises, students learn how to use Windows CE on a new hardware board, install and develop applications in a cross-platform development environment, load an image on the target system, and verify the applications on the target system.
Prerequisite: CE450

CE530 Embedded Software Design in Linux (3 units)
This course prepares students to enter the challenging world of embedded Linux. It covers the following key topics: comparing Linux and traditional embedded environments, comparing leading embedded Linux processors, understanding the details of the Linux kernel initialization process, learning the basic concepts about Linux drivers, learning about the special role of bootloaders in embedded Linux systems - with specific emphasis on U-Boot, using embedded Linux file systems, understanding the Memory Technology Devices subsystem for flash (and other) memory devices, mastering debugging tools such as gdb, KGDB, learning many tips and techniques for debugging within the Linux kernel, learning how to maximize productivity in cross-development environments, learning to prepare an entire development environment, including TFTP, DHCP, and NFS target servers; and learning to configure, build, and initialize BusyBox to support a set of unique requirements. Hands-on exercises are required.
Prerequisite: CE450

CE589 Special Topics (3 units)
Special topics courses are offered to graduate students in Computer Systems Engineering programs by current faculty members or invited guest speakers to expose the students to emerging technologies related to their studies. These courses are conducted the same way as regular courses.
Prerequisite: CE450

Computer Science

CS464G Software Design and Implementations (3 units)
This course is designed to use C/C++ to achieve the goal of teaching the students the design methodology for algorithm development. The objective is to develop the students’ programming ability with proper logical and object-oriented thinking processes. The course covers two main topics: (1) Problem specification and analysis - understand the problem, analyze it, and translate the human thinking into a computer program; (2) Object-oriented design and analysis - understand data abstraction, encapsulation, aggregation, and
inheritance. These concepts are the foundation for modern object-oriented programming languages such as C, C++, and Java. Hands-on practices are required.

Prerequisite: CS204

CS470G Network Engineering and Management (3 units)

This course is designed to give students a global picture of computer networks. Topics include network layered models (OSI, TCP/IP), data communication basics, circuit switching, packet switching, routing, and internetworking. Hands-on exercises are required.

Prerequisite: CS204

CS480G Java and Internet Applications (3 units)

This course introduces students to the Java language, programming with object-oriented construct, GUI design and graphics programming, and core Java libraries. Students will learn Java language basics such as syntax and classes, inheritance, interfaces, reflection, graphics programming, event handling, user-interface components with Swing, Java applets, exception handling, stream, and files. Hands-on exercises are required.

Prerequisite: CS360

CS501 Advanced Structured Programming and Algorithms (3 units)

This course provides an in-depth analysis and efficient use of algorithms to solve problems. Well-structured programs are studied; modular, top-down design is emphasized. Topics include the use of data structures techniques to design efficient algorithms and analyze their complexity, efficient implementation of combinatorial algorithms, sorting, searching, and geometric problems, and branch and bound algorithms. Hands-on exercises are required.

Prerequisite: CS464G

CS503 Advanced Computer Network Design (3 units)

This is the sequel to CS470, Network Engineering and Management, and is designed for an in-depth study of computer networks. Emphasis is on modern Internet technologies and implementations. Topics include a review of computer networks, OSI reference model, a study of emerging Ethernet technologies (Fast, Gigabit), client and server implementation with socket programming, local and wide area networks, TCP/IP, routing, network protocol and architecture, Internet protocol, and IP addressing. Projects are required.

Prerequisite: CS470G

CS506 Advanced Operating System Design (3 units)

This course offers graduate students an in-depth understanding and hands-on experience in modern operating system design and implementation. Topics include process, memory, file system, I/O, deadlocks, case studies of operating system implementations, modern distributed and network system architectures, communication and synchronization in distributed systems, threads and processor allocation, scheduling in distributed operating systems, distributed file systems, and case studies of modern distributed operating system design. Projects are required.

Prerequisite: CS464G

CS510 Advanced UNIX/Linux Programming (3 units)

This course is designed for students to gain fundamental knowledge of and hands-on experience with programming in the UNIX/Linux environment. Students will learn to program in C with UNIX/Linux system calls and other advanced topics such as the UNIX file system, process control, signals and inter-process communications. Students are required to do a term project with a substantial amount of programming. Upon completion of this course, students should be able to develop real-world UNIX/Linux applications. Hands-on practice and projects are required.

Prerequisite: CS506

CS515 UNIX/Linux Network Programming (3 units)

This course is designed for graduate students to gain hands-on experience in UNIX/Linux network programming. The students will learn to develop UNIX/Linux network applications using a number of UNIX/Linux network programming interface techniques including Sockets, XTI, and RPC. Topics include: an overview of transport layer (TCP/UDP), TCP sockets, UDP sockets, threads and client-server design, XTI, RPC, and Streams. Hands-on exercises and projects are required.

Prerequisite: CS506

CS526 Advanced .NET Web Programming (3 units)

This course provides students with the knowledge and skills needed to build websites with ASP.NET 2.0. and gain an understanding of the new architecture behind ASP.NET. Topics cover using system types and collections to help manage data, and create and configure web applications; using Microsoft ADO.NET, XML, and data-bound controls; creating custom web controls; using ASP.NET state management; caching; customizing and personalizing a web application; implementing authentication and authorization; creating ASP.NET mobile web applications; tracing, configuring, and deploying applications; and web services. Hands-on practice is required.

Prerequisite: CS480G

CS527 Advanced .NET Windows Programming (3 units)

The goal of this course is to provide students with the knowledge and skills needed to develop C# applications and components for the Microsoft
CS532 Advanced Internet Programming and Design (3 units)
This course is designed to give the students an in-depth understanding of Java programming techniques. The course focuses on advanced Java language features and packages which are essential for building a variety of application architectures. Topics include Java techniques of XML, JNI, thread, network programming, generic programming concepts of JDK-1.5 and beyond, and internalization. Upon completion of this course, the students should be well prepared to create enterprise-wide, Java-centric solutions to client/server problems involving Java and networks. Each technology topic will cover its uses, implementation, and language issues. Students are required to implement a project for each Java technique. Hands-on exercises are required.
Prerequisite: CS480G

CS535 Network Security Fundamentals (3 units)
This course addresses the security issues on the internet and the web. Major topics include issues related to internet infrastructure and applications running on the internet, techniques to reduce security risks, and an introduction to the role of security as an enabling technology for electronic commerce. The course includes an overview of internet and web security, its applications and legal issues, encryption and cryptography, SSL and browsers, web servers, and Java security.
Prerequisite: CS503

CS536 Modern Internet Technology Design and Applications (3 units)
This course introduces Java 2 platform Enterprise Edition (J2EE/JEE) of which the Enterprise JavaBean (EJB) component architecture is a vital piece. With J2EE/JEE, one can rapidly construct distributed, scalable, reliable, and portable secure server-side deployments. Although J2EE/JEE is a conglomeration of concepts, programming standards, and innovations, this course will focus on EJB, JNDI, transaction and security aspects of J2EE/JEE with real-world programming examples. Hands-on practice and projects are required.
Prerequisite: CS480G

CS540 Advanced Database Administration (3 units)
This course provides an in-depth understanding of the Oracle Database Management System. Emphasis is on the latest Oracle database architecture, database configuration and administration. Topics include logical/physical database layout, database server processes, database creation, various database physical objects; client/server configuration, multi-threaded server configuration, database storage management, database security, database utilities, database monitoring, partitions, and database backup/recovery methods. Hands-on practice is required.
Prerequisite: CS457G

CS547 Advanced Database Design and Analysis (3 units)
This course is intended for graduate students to further explore database server development and database tuning. The course specifically details procedural extensions to SQL to develop stored procedures, functions, packages and database triggers. In addition, it covers database performance tuning from an application development point of view by exploring query optimizer, database hints, and various database access methods. Hands-on exercises are required.
Prerequisite: CS457G

CS548 Advanced Database and Internet Server Programming (3 units)
This course covers the fundamental concepts of the 3-tier model, internet database access, and major tools and techniques utilized in application development. Topics include N-tier model, JDBC with database applications, Java Servlet, JSP and JavaBean, WML, and XML. In addition, the students will learn the best practice development approach using Sprint Framework to achieve MVC model as well as Hibernate on how to map business domain object model to underline relational database. At the end of this course, the students shall have a fresh view on both the fundamental and advanced skills to implement large scale enterprise systems. Hands-on exercises are an integral part of the course.
Prerequisite: CS480G

CS550 Data Mining and Business Intelligence (3 units)
This course introduces methods and techniques for using stored business data to make business decisions. The student will learn data types including operational or transactional data such as data for sales, cost, and inventory; nonoperational data such as forecast data and macroeconomic data; and meta data, and learn their patterns, associations,
or relationships, and how to use these information for decision making. Modern datawarehouse concepts will also be introduced. Specific examples of businesses using data mining techniques will be given in the course. The student is required to work on course projects by using modern data analysis software and referring to cases studied.

**Prerequisite:** CS457G

**CS551 Mobile Computing for Android Mobile Devices** (3 units)

Google's Android mobile phone software platform may be the next major opportunity for application software developers. Android has the potential for removing the barriers to successful development and sales of a new generation of mobile phone application software. Just like PCs which have created markets for desktop and server software, Android will create a new market for mobile applications by providing a standard mobile phone application environment. This hands-on course focuses on developing applications for Android, including on map-based applications, camera-based applications, SMS, etc. Advanced development topics are also covered, including security, IPC, and certain advanced graphics and user interface techniques.

**Prerequisite:** CS503

**CS555 Developing Applications for Windows Mobile Environment** (3 units)

This course focuses on the unique challenges, methods, tools, and technologies for using Windows Mobile to develop software applications for wireless and mobile devices, such as personal digital assistants (PDA) and smart mobile phones. Topics include user interface design for small-screen, multi-channel devices, networking techniques and memory management for devices with limited memory and processing power, data synchronization for mobile databases, and wireless network programming.

**Prerequisite:** CS503

**CS556 Mobile Applications on iPhone Platform** (3 units)

This course provides an in-depth study of the design, development and publication of object-oriented applications for the iPhone and iPod Touch platforms using the Apple SDK. Students will learn to utilize Objective-C and the various SDK frameworks to build iPhone & iPod touch applications under Mac OS X.

**Prerequisite:** CS360

**CS565 Advanced Network Management** (3 units)

This course is designed to give graduate students an in-depth understanding of and a hands-on experience in the management of network systems and applications. Emphases are on simple network management protocol (SNMP) management, MIB, management tools, system and applications. Current widely-used applications by industry will be used to demonstrate the management concepts. Computer-based training software will be used to check/verify the students’ network management skills in order to ensure they are prepared for the industry challenges. Topics include Network Management fundamentals; OSI, SNMP and TMN standards; RMON and ITU TMN architecture; inside structure and practical applications of SNMP, SNMP2, SNMP3, RMON, RMON2, and MIBs. Hands-on exercises are required.

**Prerequisite:** CS503

**CS575 Network Analysis and Testing** (3 units)

This course covers computer network analysis, testing techniques, and experience-based strategies to isolate and solve network problems. Topics include wiring and cable testing issues, transmission encoding techniques, dissecting the IEEE 48-bit MAC address, the impact of different types of broadcast traffic, operational details and analysis considerations for switches, Ethernet and Token Ring operational details and analysis, the IEEE 802.2 LLC protocol, datagrams and routing, IP specifics, protocol analysis and troubleshooting, baselining throughput and latency. Hands-on exercises using protocol analyzer are required to reinforce the topics.

**Prerequisite:** CS503

**CS589 Special Topics** (3 units)

Special topics courses are offered to graduate students in the Computer Science program by current faculty members or invited guest speakers to expose the students to emerging technologies related to their studies. These courses are conducted the same way as regular courses.

**Prerequisite:** CS464G

**CS673 Cryptography and Network Security** (3 units)

This course addresses security risks in computer networks and computer systems and the fundamental techniques used to reduce these risks. It also gives an introduction to the role of security as an enabling technology for electronic commerce. The course is divided into four major parts: (1) Fundamentals of Network Security and System Security, (2) Fundamentals of Cryptography: This is probably the most important part of this course. This part involves basic reasoning and understanding of cryptography. This includes the fundamentals of symmetric and asymmetric key systems, message integrity (hashing functions), digital signature, digital certificate, key management, and familiarity with common standards for these techniques; (3) Cryptography in real world applications: Several security applications will be discussed, including PGP, SSL, IPSec, with SSL being the focus - major
components of SSL protocol and its role in
electronic commerce with be covered. Students
will learn how to set up an https web server and
how to apply and integrate digital certificates with
browsers, web servers, and communication
protocols on the Web; (4) Hands-on Cryptography:
This part is for those who are interested in
implementing security software using cryptography.
Several software libraries will be discussed,
including Open SSL, RSA's libraries, Microsoft's
security libraries, and Java-based security software.
The topics include JCE, JCA, JSSE, JAAS,
Language-Level Security, Java Virtual Machine-
level Security, API-Level Security Features, Using
the Security Packages, Browser-level Security, and
Signing Java Programs.
Prerequisite: C5503.

CS676 Network Security Design and
Implementations (3 units)
This course is designed for students who have an
interest in learning network security technology and
wish to become information security professionals.
The course covers the fundamentals of network
security; for example, firewall, VPN, NIDS, Anti-
Virus, and Content-filtering. It also covers the
cutting-edge technologies, like Phishing and
Malware fighting. In addition, the course also
introduces security trends, strategy, policies, and
security management. Real industry products will
be introduced in this class. Students will gain
hands-on experience in creating and maintaining
internet firewalls as well as exposure to the
integrated security products solution.
Prerequisite: C5503

Curricular Practicum

CPT501 Curricular Practicum (1 unit)
Curricular practicum, or curricular practical
training, is a supervised practical experience that is
the application of previously studied theory. It is
defined as alternative work/study, internship,
cooperative education, or any other type of required
internship or practicum that is offered by
sponsoring employers through cooperative
agreements with the school and the course is an
integral part of an established curriculum. At least
three hours of work in a practical setting has the
credit equivalency of one hour of classroom lecture
(1 unit). To be eligible to take this course, the
student must have completed at least two semesters
of coursework required in his/her degree program,
obtained a written agreement that outlines the
arrangement between the institution and the
practicum site (including specific learning
objectives, course requirements, and evaluation
criteria), and received approval by a designated
advisor. International students must follow
additional rules required by the U.S. Immigration
and Customs Enforcement. The student must use
NPU’s online tool to submit his/her application for
taking this course before meeting with a designated
advisor for an assessment of eligibility. Information
and instructions concerning this course are provided
in the application form. This is a part-time
practicum course taken by the graduate student to
work no more than twenty hours each week during
the approved practicum period. Failure in this
course will prevent the student from taking any
curricular practicum course afterwards.
Prerequisite: Refer to the instructions on the
application and agreement documents.

CPT502 Curricular Practicum (2 units)
Curricular practicum, or curricular practical
training, is a supervised practical experience that is
the application of previously studied theory. It is
defined as alternative work/study, internship,
cooperative education, or any other type of required
internship or practicum that is offered by
sponsoring employers through cooperative
agreements with the school and the course is an
integral part of an established curriculum. At least
three hours of work in a practical setting has the
credit equivalency of one hour of classroom lecture
(1 unit). To be eligible to take this course, the
student must have completed at least two semesters
of coursework required in his/her degree program,
obtained a written agreement that outlines the
arrangement between the institution and the
practicum site (including specific learning
objectives, course requirements, and evaluation
criteria), and received approval by a designated
advisor. International students must follow
additional rules required by the U.S. Immigration
and Customs Enforcement. The student must use
NPU’s online tool to submit his/her application for
taking this course before meeting with a designated
advisor for an assessment of eligibility. Information
and instructions concerning this course are provided
in the application form. This is a full-time
practicum course taken by the graduate student to
work more than twenty hours each week during the
approved practicum period. Failure in this
course will prevent the student from taking any curricular
practicum course afterwards.
Prerequisite: Refer to the instructions on the
application and agreement documents.

DCE

DCE601 Research Methodology - I (3 units)
This course focuses on how to conduct research as
well as how to prepare a research plan or proposal
for a scholarly journal article, dissertation, or thesis.
The course will be conducted through formal
lectures, seminars given by invited speakers, and
the student’s engagement in practical research
work. The student will be required to complete an
applied research project.
Prerequisite: EE450G
DCE602 Research Methodology - II (3 units)
This course focuses on research methods, particularly using advanced statistical analysis methods to prepare research papers for publication as scholarly journal articles or submission as dissertations or theses. The students may be required to submit their research papers for publication in various journals. The course will introduce various statistical analysis methods for testing hypotheses. The course will be conducted with various forms, including formal lectures, seminars given by invited speakers, and each student’s engagement in practical research work. The student will be required to complete an applied research project.
Prerequisite: DCE601

DCE689 Advanced Topics (3 units)
Advanced topics courses are offered to the doctorate program students in the DCE program by current faculty members or invited guest speakers to expose the students to emergent technologies related to their studies. These courses are conducted the same way as regular courses.
Prerequisite: DCE601

DCE698 Dissertation - I (6 units)
(Research/development and lab work)
This is the first of a two-part dissertation course series required for each doctorate student. The research and development and dissertation work are designed for the student to demonstrate his/her ability of independent research and development as well as integrating and applying original and practical research into the subject matter. The student should also demonstrate his/her clear understanding of related research and research methodology for professional-oriented projects/thesis. The Doctor of Computer Engineering student enrolls in this course after completing almost all other required coursework. A doctoral dissertation committee (DC) for monitoring the dissertation must be formed and approved by the Doctoral Program Committee before the student begins his/her dissertation work. The student works with his/her dissertation advisor throughout the project. The project must involve practical research and development effort which provides a first exposure to some fundamental issues in the domain of knowledge relevant to the student’s study fields.
Prerequisite: DCE602

DCE699 Dissertation – II (6 units)
(Research/development and lab work)
This is the second of the two-part dissertation course series required for each doctorate student. The doctorate student who has completed the first part of this course must enroll in this second course to continue his/her R&D work until completing the project. Upon completing the project, the student must submit his/her dissertation for a review by the DC; the student should also give an open forum dissertation defense to the DC members and other invited faculty members and outside guests. The student must receive the DC’s final approval for completing the doctoral dissertation course series. If the student fails to complete the dissertation by the end of the semester in which this course was registered, the student must retake this course.
Prerequisite: DCE698

Electrical Engineering

EE450G Systems Analysis and Simulations (3 units)
This course is an introduction to the basic concepts and principles of signals and systems. Both analog and digital signal processing techniques will be covered. Topics include analog signals and systems, digital signals and systems, Fourier transform, Z-transform, FFT, system stability, digital filter design, and network. Matlab software will be used to implement some of the DSP algorithms.
Prerequisite: MATH205

EE453G Modern Software Techniques for Electrical Engineering (3 units)
This course is designed to provide the MSEE students with hands-on experience in the Unix/Linux environment and necessary skills in C/C++ programming languages. This course will cover the essentials of the logic of a structured computer language, Unix/Linux shell programming, the basic Matlab script programming, and Hspice for circuit simulation. This course will be taught with extensive practical applications in hardware design.
Prerequisite: EE323

EE461G Digital Design and HDL (3 units)
This course develops the students’ ability to design commonly used basic building blocks of modern digital systems and provides them with a fundamental knowledge of the state-of-the-art design methodology, design considerations, and verification strategies for complicated digital hardware design. Topics include Verilog HDL basics, Logic modeling, state machine design and memory modeling using Verilog HDL. Additional topics on FPGA architectures, device vendors, FPGA design tools, FPGA applications and latest trend in the programmable logic industry are also covered. Students can use Verilog tools such as Synopsys VCS, Mentor Modelsim, Cadence NC Verilog, and Silo III Verilog Simulator from SimuCAD for their homework and design projects. Hands-on practice is required. Students are encouraged to take the HDL based sequence of courses EE461, EE510 and EE512 to gain
knowledge and experience in semi-custom IC design using industry grade EDA design tools.

Prerequisite: EE323

EE466G Introduction to Nanotechnology (3 units)
This course is an introduction to the science of nanotechnology, tools, and applications of nanotechnology to various fields. Topics include: nano-electronics, spintronics and quantum computer, novel man-made materials such as carbon nano-tube, nano-characterization and nanofabrication; applications to medicine, health, defense, security, green energy technology, and electronics; impact to environment and society, business, investment, and intellectual property.

Prerequisite: MATH208

EE504 Advanced Computer Architecture (3 units)
This course is designed to further investigate modern computer design. Topics include an in-depth study of multiprocessor architecture and interconnection networks, pipeline, data flow, algorithm structures, memory system design, cache memory design, and a comparison of the performance and design among various computer architectures. Hands-on project experience is required.

Prerequisite: EE450G

EE505 Advanced Digital IC Design (3 units)
EE505 is an advanced course in digital circuit design that applies the knowledge of advanced circuit design concepts to Digital IC in state-of-the-art CMOS technologies. It emphasizes the design and optimization of circuit/layout for combinational logic gates, sequential logic circuits, arithmetic building blocks, and memory circuits. The challenges of today's digital integrated circuit design, such as scaling, process variation, signal integrity, timing issues, interconnectivity, and power consumption will be addressed specially. The circuit simulation tool (HSPICE), layout design tool (Virtuoso), and schematic entry tool (Composer) are used for homework assignments and projects.

Prerequisite: EE468G

EE508 VLSI Design - Place and Route (3 units)
This course is the third in the VLDI Design series and introduces ASIC place and route. The course introduces the students to state-of-the-art physical design automation tools and techniques. Topics include design flow, library review, tool graphical interface, floor planning, power planning, timing driven placement, static time analysis (STA), CT-Gen, special routing, final routing, engineering change order (ECO), and run batch mode jobs. Hands-on exercises and projects are required.

Prerequisite: EE461G

EE509 Mobile and Wireless Communication (3 units)
This course covers the concept of frequency re-use, wireless communication channel characteristics, modulation and demodulation for wireless communications, equalization and channel coding, speech coding, multiple access techniques such as FDMA, TDMA, CDMA, FDD and TDD, and commercial wireless communication standards such as AMPS, GSM, IS136 (TDMA), IS-95 (CDMA). Hands-on simulations are used to help students gain an in-depth understanding of wireless communication. Familiarity with communication theory and simulation tools such as MATLAB or system view is required.
(Note: This is an introductory course on wireless technologies. Any topic, such as GSM, TDMA, or CDMA can be expanded to a full-trimester course under Special Topics offerings.)

Prerequisite: EE450G

EE511 Advanced Analog IC Design (3 units)
This course offers students extensive exposure to concepts and techniques in analysis and design of analog IC, including device modeling, basic circuit building blocks, feedback system, frequency response and noise. EDA tools may be used in homework assignments and projects.

Prerequisite: EE505

EE512 Application Specific Integrated Circuit Design (ASIC) (3 units)
In connection with EE461, this course is designed for students who intend to become logic designers using HDL based design methodologies. Topics include ASIC/CPLD/FPGA Library modeling, cell characterization, static timing analysis, place and route algorithms, design for testability, fault modeling, industry standard formats for design information interchange, and a survey of the most popular EDA tools. Industry grade design tools such as Synopsys Design Compiler, Cadence Verilog-XL, Synopsys DesignTime (under de_shell), Synopsys Prime Time, Cadence Silicon Ensemble, Mentor Calibre LVS/DRC, and Synplicity Synplify are used for homework assignments and projects.

Prerequisite: EE505

EE520 Advanced FPGA Design and Implementations (3 units)
Digital design using FPGAs is a very important activity in industries due to reduced cost, compared with ASIC design, and faster time-to-market. In order to design a digital system using FPGA, the designers must understand the architectures of the FPGA as well the accompanying CAD tools. The course will cover two major Xilinx FPGA architectures in detail. The student will learn to build various digital blocks such as combinational logic, sequential logic, finite state machines, RAM and DSP by studying the architectures of the FPGAs. Hands-on practices are required.
Electrons and photons play a key role in nanotechnology. This course introduces the basics of the application of electrons and photons to nanotechnology. Topics include: Rationale - Why are electrons and photons so important in nanotechnology? The electron: basic electron properties, electrons as waves and their description and application. The photon: basic photon properties, particle and wave aspects. Hands-on computer simulation in nanotechnology. Renewable energy: sources of renewable energy, solar cell basics, use of nanotechnology to harvest solar energy. Memristors: new nanotechnology approaches to information storage. Spintronics: basic concepts, application to magnetic memory, characterization and manipulation of magnetic nanostructures. Nano-optics: overcoming the diffraction limit; use of subwavelength light localization to detect, image, and investigate individual nanostructures. Protein crystallography: use of synchrotron photons to probe the structure of biological molecules. Student participation in mini-projects and a final written report will be required. The course will include class visits to nanotechnology companies, and to state-of-the-art nanotechnology centers at the national research laboratories and universities in the San Francisco Bay Area.

Prerequisite: EE466G

**EE583 Introduction to Nanoelectromechanical Systems (NEMS) (3 units)**

Nanotechnology plays a vital role in the 21st Century. Nanoparticles and nanostructures represent a scale of matter where radically different phenomena are manifested. The unique mechanical, electronic, magnetic, optical, and chemical properties open the door to an enormous new domain of engineered nanostructures and integrated nanodevices with the prospect of various innovative applications in every aspect of life. The NEMS is a broad field which includes integrated nano-sensors, nano-actuators, nano-instruments, nano-optics, nano-fluidics, etc. Its applications range from automobile airbag deployment systems, ink jet printer heads, and movable mirror array for color projection displays, to atom probes for imaging and transporting atoms. Students will also learn the context of nanomanufacturing: fabrication, analysis and synthesis processes, instrumentation for characterization, and integration of nanodevices and systems.

Prerequisite: EE466G

**EE615 System on Chip (SoC) Design (3 units)**

System on Chip (SoC) is composed of many functional modules such as processor, memory, digital IPs, analog/mixed signal modules, RF and interfaces on a single chip. This course will focus on ARM based on-chip bus platform, digital IP verification, and the trend and integration of SoC.

Prerequisite: EE504

**EE616 Design Verification (3 units)**

This course is designed to cover the design verification methodologies commonly used in system-on-chip (SOC) design. Topics include design verification basics, introduction of various verification strategies, verification of soft and hard IP blocks, verification for networking/communication ASIC, verification for audio/video signal processing ASIC, how to build an efficient and effective verification platform, automation of verification flow, test case coverage, how to create design models using PLI routine, and formal verification, etc. The students will also be informed that design verification is becoming the bottleneck in modern ASIC design cycle, especially in system on chip (SOC) design. The verification cycle could take up to 70% of the design cycle.

Prerequisite: EE505

**LAW670 Intellectual Property Law (3 units)**

This course is intended to offer the fundamental knowledge of intellectual property (IP) pertaining to inventors’ rights, patent rights, copyrights, trademark, etc. The importance of IP relevant to technological business development is also introduced. The patent law segment will give an overview of the requisites of patentability, including eligible subject matter, utility, novelty, nonobviousness, and disclosure. Enforcement issues such as claim interpretation, the doctrine of equivalents, and remedies will be covered. Subjects covered in the trademark area include trademark, trade dress, trade secrets, and trade libel law. A brief introduction to trade related aspects of IP (TRIPS) adopted by the WTO will also be made.

Prerequisite: DCE601
The School of Business and Information Technology offers one degree program at each level: bachelor’s, master’s and doctorate degrees. These are educational programs in the business and organizational disciplines intended to prepare individuals to make sustained contributions to organizations and society in a global, diverse, and dynamic environment, focusing on developing an individual’s interdisciplinary problem solving skills, interpersonal and communication skills, ability to adapt to changing information technology and business environments, entrepreneurial innovations, and ethical and professional values. Successful completion requires an understanding of not only the required business subjects but also modern information systems and internet technology pertinent to e-business applications.

The School Dean, program chairs, advisory committees, as well as the faculty members of the School of Business and Information Technology are responsible for the School’s academic affairs.

To help the students gain real-world experience, an enterprise resource-planning tool, such as SAP software, is integrated into the business curriculum. A number of faculty members will guide the students to practice using SAP software and its applications in an enterprise environment.

### Faculty

All the business faculty members possess the following qualities: advanced degrees earned in business disciplines, work experience relevant to their teaching subjects, and enthusiasm in teaching and helping the students. To increase the students’ learning effectiveness, they bring their real-world experience into the classrooms as well as use case studies to stimulate the students’ minds and exemplify various lecture topics.

### Objectives

The objectives of the business programs are:

- To prepare students for professional careers in modern-day businesses.
- To equip the students with not only business knowledge but also the ability to make use of the latest information technology in the business environment.
- To provide a simulated enterprise environment as well as professional development opportunities for those who wish to practice the profession of business administration with increased competence.
- The undergraduate program also develops the students’ communication skills, analytical skills, and understanding of organization and cross-culture issues, and increases their awareness of business and social issues for them to be thoroughly grounded in ethical principles.

### Undergraduate Program

The School of Business Administration and Information Technology offers an undergraduate degree program: Bachelor of Business Administration and Information Sciences degree (BBAIS).

### Credential Requirements

The undergraduate programs accept qualified high school graduates and college transfer students.

- **Freshmen Applicants:** Undergraduate applicants who have not completed at least 30 semester units of college credit are considered freshmen.

### Application Requirements

To apply for admission into a bachelor’s degree program, the applicant is required to submit the following to the NPU Admissions Office: (1) an Application Form (online or hardcopy), (2) a nonrefundable application fee, (3) official transcripts from previously attended colleges; **freshman applicant** is required to submit his/her official high school transcript and document certifying high school completion, (4) an English
proficiency document is required for non-native English speakers: An official transcript with English course records or TOEFL/IELTS score report or equivalent will suffice. NPU’s English assessment exam, when available, can be taken by the applicant to meet this requirement. See English Proficiency Requirement below for detailed information on the English entrance requirement, and (5) Entrance assessment tests: SAT-I for freshman applicants. Applicants have the option to take the on-campus equivalent assessment tests. The scores are for reference purpose and will not affect the admission evaluation for the applicants. (6) Resumes are required for applicants interested in applying for scholarships.

- **International Students:** In addition to the above general application requirements, an international applicant is also required to submit the following additional documents: (a) a financial support document – either the applicant’s bank statement or a certified affidavit of support (form I-134 or equivalent) from a financial sponsor indicating that a minimum amount of $25,000 is available for the applicant to pursue his/her study in the first academic year at NPU, (b) a transfer student (from a U.S. institution) is required to submit a photocopy of his/her previous I-20 form and request the other school’s international student advisor to complete the International Student Transfer Record form for NPU and conduct the required SEVIS transfer process, and (c) upon reporting to NPU, photocopies of the student’s passport, visa, and I-94 (admission & departure) document. The student will be asked to show an identification document attesting his/her official name, if applicable.

GED: NPU recognizes the General Educational Development (GED) tests and accepts the GED graduates.

- **English Proficiency Requirement**

Non-native English speakers are considered meeting the entrance English proficiency requirement if they meet any of the following requirements:

- Used English as the official language and completed study in a high school or college degree program,
- Has completed a college English credit course in an English speaking institution,
- Has submitted an official TOEFL or IELTS test score report to NPU and the score meets the entrance English requirement set by the NPU admissions office.

The TOEFL institution code for NPU is 9626.

**Conditional acceptance** may be granted to applicants whose TOEFL/IELTS scores or other equivalent records do not meet the above requirement but have reached intermediate level of the American Language classes (ESL) offered by NPU. These students will be required to enroll in ESL classes until they pass the advanced level ESL classes before enrolling in degree courses.

NPU’s English Placement Examination (EPE): An applicant may be offered the option to take NPU’s English Placement Examination in place of the standardized tests. The exam result affects the applicant’s admission status. A fee will be charged for this service.

NPU may accept the English assessment reports from a few U.S. English language institutions recognized by major universities in the U.S.

- **Entrance Assessment Examination**

The entrance assessment test, SAT-I, is required for freshmen only and for reference purpose. The score will not affect admission evaluation for the applicants. Freshman students have the option to take the on-campus equivalent test in place of SAT-I before the new semester starts. The cost for taking the on-campus SAT-I-equivalent assessment test is $50.

NPU’s Institution Code for reporting the SAT scores is 4335.

Students who are required to enroll in English as a Second Language (ESL) classes will be allowed to take the entrance assessment tests after they have passed the advanced level ESL classes.

- **General Background Requirements for Pursuing the Bachelor’s Degree**

Remedial courses are not offered at NPU except for English as a Second Language classes. Applicants to all programs are required to have
completed pre-calculus subjects in algebra, trigonometry, and geometry prior to admission into the program.

**Transfer of Credit from Other Institutions**

Course credit earned at other institutions of higher education may be transferable. Credit transfer is made by the admission evaluators while conducting the admission evaluation. The following statements apply to all transfer credits:

- The NPU Admissions Office must receive all official transcripts prior to the student’s joining a degree program. Without preapproval, transcripts received after the student joins NPU cannot be used in transferring credits, except for records from the term immediately preceding the student’s starting semester at NPU.
- The student was officially enrolled in the course.
- When evaluating any foreign transcript, the admission evaluators may accept or transfer credit based on their knowledge of the course contents in comparison with similar courses offered in the U.S.
- Courses for transfer to NPU may not be completed concurrently at another institution while attending NPU.
- Credits are transferred by the following conversion:

**Definition of a Trimester/Semester Unit:**

One trimester/semester credit hour equals, at a minimum, 15 classroom hours of lecture, 30 hours of laboratory, and 45 hours of practicum.

**Conversion Factor:**

1 quarter unit = 0.66 trimester/semester unit

**Grades Required for Transfer Credit**

In the bachelor's degree program, courses completed with passing grades are transferable in most cases. However, the Admissions Committee has the authority to make the evaluation on an individual basis and make its decision based on its expertise in credential evaluation.

**Transfer of Credit**

Undergraduate program courses are numbered from the 100s to 400s. Courses in the 100s and 200s are lower-division courses; courses numbered in the 300s and 400s are upper-division courses.

**A. Transfer of Lower-Division Credit**

Courses that are considered lower division are courses completed in the freshman or sophomore years of a four-year undergraduate program of study or courses completed at a two-year junior college.

There is no limitation on lower-division transfer credits, but the credit transfer rules must be followed. The following are additional rules for transferring lower-division credit:

- Lower-division courses may not be used to waive upper-division courses.
- College English courses taken at an institution where English is not an official language cannot be transferred for general education credit.

**B. Transfer of Upper-Division Credit**

In order to transfer as upper division credit, the course must be at the junior or senior level of an accredited or state approved four-year college program of study.

A maximum of 20 upper-division units may be transferred to meet the graduation requirements of the program.

**Types of Undergraduate Transfer Credit**

NPU accepts undergraduate transfer credit from the following types of courses and schools:

- Junior colleges or courses completed in a 4-year undergraduate program.
- AP course credit earned which is considered to be equivalent to college credit.
- Vocational/Technical Schools

Courses from U.S. technical/vocational institutions are transferable for lower-division credit only if the school’s curriculum leads to an associate’s degree, and the institution is accredited.
Credit by Examination - CLEP
NPU grants credit to those students who pass examinations in English, natural sciences, humanities, and social science subjects offered by the College Level Examination Program (CLEP). Only General Education credits will be granted. Students should consult with the Admissions Office for information on acceptable CLEP scores and units. The CLEP Institution Code for NPU is 7569.

Transfer of Credit from Defense Activity for Nontraditional Education Support (DANTES) and Military Services
Credits will be allowed for DANTES Subject Standardized Tests and professional military education evaluated by the American Council on Education (ACE). The maximum transferable lower-division and upper-division credits follow the same policies as specified in the above sections on lower-division and upper-division credit transfers. NPU’s evaluation of an application is made prior to the student’s admission to a program unless otherwise approved by the authorizing VA office. The DANTES Institution Code for NPU is 9670.

Proficiency Exams: A student may be required to demonstrate proficiency in a subject taken more than ten years prior to application with NPU by successful completion of a proficiency examination.

Tuition
Tuition is charged per unit. Tuition for courses taken to fulfill the undergraduate degree requirement is $330.00 per unit.

Tuition per Unit for Courses Audited
For courses audited (without earning credit), the tuition is half the regular unit rate. Not all courses can be taken with "audit" status.

Estimated Semester Cost of Tuition for a Full-Time Student
The tuition is $4,950 for an undergraduate student taking 15 units per semester.

Graduation Requirements
The BBAIS degree program requires course work in the following areas:

1. General education,
2. Major study, and
3. Electives.

A minimum of 125 units are required for graduation. An overall G.P.A. of 2.0 or better and a D- grade or higher on all courses towards the degree are required for meeting the graduation requirements. The student must be in good standing with the University and have an approved petition for graduation on file.

1. General Education Requirements
All students must complete at least 39 semester units in general education (GE). GE courses cover subjects in the following areas: English and communications, humanities, mathematics and natural sciences, and social sciences.

Examples of courses that fall under the general education area are as follows:

A. English and Communications: Expository Writing, Speech, Communication, Composition, Creative Writing.
B. Humanities: Foreign Languages (excluding native language), Philosophy, Music Appreciation, Fine Art, Religion.

2. Major Study Requirements
The BBAIS curriculum aims to provide the student the foundation and training in business management and information technology. Students are encouraged to utilize the enterprise resource-planning and management tool provided by the school to gain hands-on experience in a simulated enterprise environment.
Professional Development: The Professional Development course prepares the students for their professional careers.

3. Electives

Electives are built into the program to promote breadth as well as depth in the study program. The student must complete a sufficient number of elective courses to meet the graduation requirements in the program.

Bachelor of Business Administration and Information Sciences (BBAIS)

Objectives: The program is to prepare students with the fundamentals of current business practices, management principles, and leadership skills, as well as modern information technology applied in a real-world business environment. The training will enable the students to work with computers and information technology to manage business in the information age and in the global business setting. After completing the undergraduate degree, a student is also prepared to enter a graduate degree program in business administration or related fields, including using up-to-date information technology and enterprise resource-planning tools.

Graduation requirements: A minimum of 125 units are required for graduation. They include the following:

1. 39 units of general education courses including 12 units in English and communications, 9 units in humanities, 9 units in mathematics and natural sciences, and 9 units in social sciences,
2. 62 units of major courses, and
3. 24 units of electives.

Suggested course sequence in the first four semesters:

GE and Lower-Division Courses Study Flow

<table>
<thead>
<tr>
<th>IT200</th>
<th>Introduction to Computers and Digital Media</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL101</td>
<td>Expository Writing</td>
</tr>
<tr>
<td>MATH201</td>
<td>Calculus – I</td>
</tr>
<tr>
<td>MATH208</td>
<td>Statistics</td>
</tr>
<tr>
<td>PHYS101</td>
<td>Introduction to Physical Sciences</td>
</tr>
<tr>
<td>ACC201</td>
<td>Principles of Accounting I, and the Lab course ACC201L</td>
</tr>
<tr>
<td>ECON201</td>
<td>Macroeconomics</td>
</tr>
<tr>
<td>ENGL102</td>
<td>Critical Thinking</td>
</tr>
<tr>
<td>HU210</td>
<td>Introduction to Philosophy</td>
</tr>
<tr>
<td>SOC201</td>
<td>California History</td>
</tr>
<tr>
<td>ACC202</td>
<td>Principles of Accounting II, and the Lab course ACC202L</td>
</tr>
<tr>
<td>ECON202</td>
<td>Microeconomics</td>
</tr>
<tr>
<td>ENGL115</td>
<td>Public Speaking</td>
</tr>
<tr>
<td>HU240</td>
<td>Music Appreciation</td>
</tr>
<tr>
<td>SOC245</td>
<td>Health Psychology</td>
</tr>
<tr>
<td>ENGL210</td>
<td>Intercultural Communication</td>
</tr>
<tr>
<td>HU280</td>
<td>Principles of Ethics</td>
</tr>
<tr>
<td>SOC270</td>
<td>Early American History</td>
</tr>
<tr>
<td>SOC270</td>
<td>Early American History</td>
</tr>
<tr>
<td>Begin to take upper-division major courses and electives</td>
<td></td>
</tr>
</tbody>
</table>

The following is the description of the BBAIS degree program with a statement of the program objectives, a suggested GE and lower-division major courses study flow, and the program curriculum.

Course Numbers: Courses numbered in the 100s and 200s are lower-division courses; courses numbered in the 300s and 400s are upper-division courses.
1. General Education (minimum 39 units)

The purpose of general education is to give breadth to the student’s education. With a general background in English and communications, humanities, mathematics, natural sciences, and the social sciences, the student will be prepared for his/her roles both in society and at work. Students who have not completed the general education requirements upon entering a degree program at NPU are required to observe the following curriculum to meet the general education requirements.

(a) **English and Communications** (12 units)

(ENGL101 is a required course. Other listed courses are suggested subjects.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL101</td>
<td>3</td>
</tr>
<tr>
<td>ENGL102</td>
<td>3</td>
</tr>
<tr>
<td>ENGL115</td>
<td>3</td>
</tr>
<tr>
<td>ENGL210</td>
<td>3</td>
</tr>
</tbody>
</table>

(b) **Humanities** (9 units)

(The following are suggested subjects.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>HU210</td>
<td>3</td>
</tr>
<tr>
<td>HU240</td>
<td>3</td>
</tr>
<tr>
<td>HU280</td>
<td>3</td>
</tr>
</tbody>
</table>

(c) **Mathematics and Natural Sciences** (9 units)

(MATH201 and MATH208 are required courses. PHYS101 is a suggested subject.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS101</td>
<td>3</td>
</tr>
<tr>
<td>MATH201</td>
<td>3</td>
</tr>
<tr>
<td>MATH208</td>
<td>3</td>
</tr>
</tbody>
</table>

(d) **Social Sciences** (9 units)

(The following are suggested subjects.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOC201</td>
<td>3</td>
</tr>
<tr>
<td>SOC245</td>
<td>3</td>
</tr>
<tr>
<td>SOC270</td>
<td>3</td>
</tr>
</tbody>
</table>

2. Major Requirements (minimum 62 units)

*(Business administration and information technology, a professional development course, a major design experience)*

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT200</td>
<td>3</td>
</tr>
<tr>
<td>ACC201</td>
<td>3</td>
</tr>
<tr>
<td>ACC201L</td>
<td>1</td>
</tr>
<tr>
<td>ACC202</td>
<td>3</td>
</tr>
<tr>
<td>ACC202L</td>
<td>1</td>
</tr>
<tr>
<td>ECON201</td>
<td>3</td>
</tr>
<tr>
<td>ECON202</td>
<td>3</td>
</tr>
<tr>
<td>FIN310</td>
<td>3</td>
</tr>
<tr>
<td>IT310</td>
<td>3</td>
</tr>
<tr>
<td>IT370</td>
<td>3</td>
</tr>
<tr>
<td>LAW310</td>
<td>3</td>
</tr>
<tr>
<td>MGT310</td>
<td>3</td>
</tr>
</tbody>
</table>
3. Electives (minimum 24 units)

The student may select courses in any field to fulfill this requirement. Prerequisite requirements must be met when taking any course. The student is encouraged to take SAP lab module courses to gain hands-on experience with a standard enterprise resource planning and management software system. When applicable, the student may take curricular practicum courses and engage in practical training to work on company projects which are directly related to the student’s course of study. The student must observe the rules required for taking the practicum courses. Students interested in research work may select to enroll in the Senior Project course series and work under the guidance of a project advisor. Detailed course requirements for the Senior Project course series are posted on the Online Service Center.

The student also has the option to select a focused study area and take the suggested courses to gain in-depth knowledge in that area. ACC451L is a hands-on SAP lab course. The following are the available study areas and the suggested courses for each area:

a. Accounting focus: ACC451, ACC451L, ACC452
b. Digital Media and Graphics focus: DMG460, DMG480

Course Descriptions
Bachelor’s Degree Program
School of Business Administration and Information Technology

For the undergraduate program, lower division courses are numbered in the 100s and 200s, and upper division courses are numbered in the 300s and 400s.

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Description</th>
<th>Course No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>100-199</td>
<td>Freshman level courses</td>
<td>200-299</td>
<td>Sophomore level courses</td>
</tr>
<tr>
<td>300-399</td>
<td>Junior level courses</td>
<td>400-499</td>
<td>Senior level courses</td>
</tr>
</tbody>
</table>


Each course description is followed by its prerequisite information expressed in course numbers.

Each 1-unit lab course requires at least 2 hours of lab work each week. Each 1 unit of a practicum course requires at least 45 hours of practical experience related to the student’s program curriculum.
Accounting

ACC201 Principles of Accounting - I (3 units)
This course is the first of a 2-part basic accounting principles series. Topics include an introduction to basic elements of financial accounting, recording and analyzing financial transactions, opening and using accounts of various types, setting up and using a general journal, accounting methods for service businesses, and accounting methods for corporations. Students are required to use popular accounting tools, such as QuickBooks, for homework and exercises. Other PC-based accounting software may also be introduced to the students for practice. Lab work is required.
Prerequisite: IT200

ACC201L Basic Accounting Lab - I (1 unit)
This lab course is designed to be taken concurrently with the course of ACC201 Principles of Accounting - I. Topics include an introduction to QuickBooks and using QuickBooks to manage the sales process, tracking revenue, expenses, bank reconciliation, reports and graphs, company file set up, and maintenance. Hands-on practice is required.
Prerequisite: IT200

ACC202 Principles of Accounting - II (3 units)
This course is the second of a 2-part basic accounting principles series. Topics include analysis of accounting information, reporting, cash flows, and financial statements; management accounting and product costing, managerial accounting concepts and principles, manufacturing and job order cost accounting, process cost accounting, cost allocation, performance measurement, cost planning and control, cost-volume-profit analysis, master budgets and planning, and strategic analysis in managerial and cost accounting. Students are required to use popular accounting tools, such as QuickBooks, for homework and exercises. Other PC-based accounting software may also be introduced to the students for practice. Lab work is required.
Prerequisites: (ACC201 or PBUS03) and ACC201L

ACC202L Basic Accounting Lab - II (1 unit)
This lab course is designed to be taken concurrently with the course ACC202 Principles of Accounting-II. Topics include company file setup and maintenance, inventory, sales tax, time and billing, payroll setup, payroll processing, adjustments, and the yearend procedures. Hands-on practice is required.
Prerequisites: (ACC201 or PBUS03) and ACC201L

ACC450 Managerial Accounting (3 units)
This class applies the essentials of financial accounting to the practice of management. Students will understand cost definitions, cost concepts, cost behavior and cost estimation; also, how cost accounting is applied to manufacturing and service organizations, the principles of planning and control for effective cost-related management, capital budgeting, cash flow statements, and how to analyze financial statements.
Prerequisite: ACC201 or PBUS03

ACC451 Intermediate Accounting - I (3 units)
This course is designed for students who are interested in pursuing careers as accounting professionals. This course builds on the knowledge obtained in the Principles of Accounting series. Topics include understanding financial accounting and accounting standards, financial statement preparation, required disclosures, and in-depth study of current assets, revenue recognition and fixed assets.
Prerequisite: ACC202

ACC451L Intermediate Accounting - I SAP Lab
This course is designed for students who are interested in pursuing careers as accounting professionals. This practical lab provides hands-on, step-by-step instructions and real-world examples for the most frequently used FI submodules found in SAP ECC 6.0. The student will be able to apply what he/she has learned to customize his/her system to meet his/her accounting, planning, and reporting needs. In addition, the student will learn skills which he/she will be able to apply to other areas of functionality within the SAP suite. NPU provides educational establishments in the introduction of SAP as well as positions the students for future career enhancement.
Prerequisite: ACC202

ACC452 Intermediate Accounting - II (3 units)
This course is a continuation of Intermediate Accounting - I. Subject matter includes current and long-term liabilities, stockholders’ equity, investments, pension and post-retirement benefits, leases and cash flow statements.
Prerequisite: ACC451

ACC490 Introduction to Taxation (3 units)
This course covers taxation concepts applied to individual’s income, deductions, credits, property transactions, and tax accounting methods. An understanding of the concepts will enable students to prepare quality individual income tax returns as a professional. The course will also cover taxation rules governing financial planning.
Prerequisite: ACC201

Business (general courses)

BUS400 Business Communication (3 units)
This course instructs and develops business communication skills that are essential for daily business and professional activities. Topics include professional memo writing, e-mail format and filing, business letters and correspondence, and business reports. Attention will also be devoted to improving students’ active listening, speaking and nonverbal communication skills.
Prerequisite: ENGL101
BUS445 Professional Development (3 units)
This course instructs the student to develop his/her professional career. Topics cover personality assessment, professional ethics, understanding the business professional world, recognizing company culture and organizational structure, how to survive office politics, career paths and pitfalls, resume writing and cover letters, and interview techniques.  
Prerequisite: ENGL101

Curricular Practicum

CPT401 Curricular Practicum (1 unit)
Curricular practicum, or curricular practical training, is a supervised practical experience that is the application of previously studied theory. It is defined as alternative work/study, internship, cooperative education, or any other type of required internship or practicum that is offered by sponsoring employers through cooperative agreements with the school and the course is an integral part of an established curriculum. At least three hours of work in a practical setting has the credit equivalency of one hour of classroom lecture (1 unit). To be eligible to take this course, the student must have completed at least two semesters of coursework required in his/her degree program, obtained a written agreement that outlines the arrangement between the institution and the practicum site (including specific learning objectives, course requirements, and evaluation criteria), and received approval by a designated advisor. International students must follow additional rules required by the U.S. Immigration and Customs Enforcement. The student must use NPU’s online tool to submit his/her application for taking this course before meeting with a designated advisor for an assessment of eligibility. Information and instructions concerning this course are provided in the application form. This is a full-time practicum course taken by the undergraduate student to work more than twenty hours each week during the approved practicum period. Failure in this course will prevent the student from taking any curricular practicum course afterwards. 
Prerequisite: Refer to the instructions on the application and agreement documents.

Digital Media and Graphics

DMG450 Fundamentals of Digital Media and Graphics (3 units)
In many digital graphics design areas, such as typesetting and logo graphics, vector editing provides smooth and flexible sizing. Adobe Illustrator is a vector graphics editor providing results in the typesetting and logo graphic areas of design. Upon completion of this course, the student will be able to use sophisticated Illustrator tools for drawing, painting, editing, and to efficiently produce artwork for print, the web, digital publication, and business applications. The student will also learn to incorporate Photoshop’s products with Illustrator. Advanced level tools for 3D model design, such as AutoDesk, are explored. Hands-on exercises are required. 
Prerequisite: IT200

DMG460 Introduction to Animation (3 units)
This course focuses on digital animation using Adobe Flash. The student learns to import Photoshop files, build objects with Flash tools, create motion using key frames and tweening with ActionScript. Exploration of other software tools, such as FlipBook, will also be included. Hands-on exercises are required. 
Prerequisite: IT200

DMG480 Introduction to Dreamweaver (3 units)
This course focuses on developing a website using Adobe Dreamweaver. Topics covered include techniques in using Cascading Style Sheets (CSS), creating headings, lists, and block-quotes, creating tables, inserting an image, linking to internal site pages and other external sites, adding interactivity, creating a page layout, use of forms and Flash files, productivity issues, and publishing on the web. Hands-on exercises are required. 
Prerequisite: IT200
Economics

ECON201 Macroeconomics (3 units) This course teaches economic analysis at the level of the entire economic system or macro perspective. Topics include business cycles, unemployment or lack of demand, inflation, national income and expenditure, aggregate demand and fiscal policy, money and monetary policy, trade and balance of payments deficits, the national debt, productivity and economic growth. (Lower Division GE – Social Sciences area for non-business majors) Prerequisite: ENGL101

ECON202 Microeconomics (3 units) This course studies the economic system from the individual decision-maker’s perspective. Topics include demand analysis, economic analysis of production, industry and competition analysis, market and economic analysis of public policies, and labor markets and income redistribution analysis of public policies. (Lower Division GE – Social Sciences area for non-business majors) Prerequisite: ENGL101

English

(GE in English and Communication area)

ENGL101 Expository Writing (3 units) This course, while at the fundamental level of college writing, is based on a systematic approach to address students' needs to acquire knowledge and skills in written communication. It covers a full range of basic concerns in writing, going from its processes to its forms, to the popular techniques writers have used to make their works outstanding. With this course, students will learn to write as well as write to learn. By the end of the semester, the students should be able to use grammar and punctuation correctly and to write effective essays in both academic and professional settings. Prerequisite: ESL401

ENGL102 Critical Thinking (3 units) This course focuses on learning to be an effective provider and consumer of ideas in our information-saturated society. Students will learn to identify the intent of the message, to judge the soundness of the argument, and to evaluate the validity of the evidence. Rigorous training will help learners go beyond feelings and personal biases to clear, impartial, and accurate problem solving and decision making that are essential to all human communication: speaking, writing, debating, and persuading. Prerequisite: ENGL101

ENGL115 Public Speaking (3 units) This course is designed to develop effective skills in extemporaneous speaking, formal presentations, and listening. Students will learn about nonverbal communication, cultural differences in communication, and research methodology. Prerequisite: ESL401

ENGL210 Intercultural Communication (3 units) This is a course taught with lecture, readings, discussion, video viewing and guest speakers. It will turn you into a better communicator in an increasingly diversified workforce. With globalization becoming such a universal trend, everyone needs to know how to interact and stay in harmony with people of different cultural, ethnic and linguistic origins. Indeed, how to communicate in a “melting pot” like the U.S.A. today is an urgent concern both in theory and in practice. Much of the tension among countries, races and ethnic groups is caused by a lack of mutual understanding. This course will give you the kind of knowledge needed for this understanding. It will cover many interesting theories that will help you establish and maintain good social and work relationships across the borderlines of cultures and nationalities. Prerequisite: ENGL101

ENGL220 Small Group Communication (3 units) This course is designed to accomplish the following learning goals: 1) to help the students understand theories and principles of small group decision making and problem solving, 2) to provide students with hands-on experience working in small groups, the most powerful tool in modern industry, and 3) to offer students opportunities to observe the development and operation of real-life task-oriented groups. Prerequisite: ENGL101

Finance

FIN310 Fundamentals of Finance (3 units) This course introduces the student to the world of finance. Financial management is concerned with the efforts of the corporation’s managers to raise and allocate capital in a manner that will maximize and stabilize the firm’s future cash flows. This course examines the concepts and techniques available to financial managers as they address various aspects of the financing and investment questions. Topics include financial background, a review of accounting, financial statements, and taxes; cash flow and financial analysis, the financial system and interest, time value of money, the valuation and characteristics of bonds, the valuation and characteristics of stocks, risk and return, capital budgeting, and international finance. A case study will be applied to assist students’ learning. Prerequisite: ACC201

FIN450L Financial Management SAP Lab (1 unit) This course is designed for students who are interested in pursuing careers as accounting professionals. This lab provides hands-on and step-by-step instructions for the students to practice in a SAP environment. Topics focus on how to create
cost centers and allocate actual cost and planned cost within different cost centers.

Prerequisite: FIN310

**Human Resource Management**

**HRM452L Human Resource Management SAP Lab** (1 unit)
This SAP lab course gives a brief overview of the integrative processes in SAP ERP Human Resource Management. This course is designed to start with a basic overview of the module and end with advanced knowledge of configuration and testing. Students will learn from lab materials and homework assignments to simulate real-life projects. Lab exercises in this class include organizational structure, recruitment and selection, benefits, risk management, compensation management, travel and personnel time management, training and event management, personnel development, and information display and reporting.

Prerequisite: MGT310

**Humanities**
(GE in Humanities area)

**HU210 Introduction to Philosophy** (3 units)
This course is an introduction to the great questions of philosophy, using an historical approach. The class covers Western and non-Western traditions from the pre-Socratic and Confucius to modern times.

Prerequisite: ENGL101

**HU240 Music Appreciation** (3 units)
This course is designed for students to explore the fundamentals of music through easy listening examples from all aspects of sound: tone, color, harmony, rhythm, mood, dynamics, tempo, themes, and forms. Students will analyze music in respect to the historical and cultural context as well as to daily life.

Prerequisite: ESL401

**HU250 News Reading** (3 units)
This course will give students a skill that they will be able to use and benefit from for the rest of their lives: the ability to read and understand an English-language newspaper, magazine or other journalistic materials. It will enable the students to launch from their general English reading capability into a subject area which is more specialized and yet intimately woven with every-day happenings that concern and motivate every ordinary man and woman -- the news reports.

Prerequisite: ENGL101

**HU280 Principles of Ethics** (3 units)
This course is designed to teach students ethical principles and problems applicable to their lives. Topics include application of ethical principles, background and philosophical principles of ethics, ethical practices, and practical ethical problems and solutions.

Prerequisite: ENGL101

**Information Technology**

**IT200 Introduction to Computers and Digital Media** (3 units)
This is an introductory computer literacy course introducing the students to the basics of computer hardware structure, the World Wide Web, and MS Windows software tools. Topics include an introduction to computer components, input/output, data storage, the internet and the WWW, operating systems, data management, and a few Adobe Photoshop software tools. Students also learn to use the latest Microsoft Office tools – Word, Excel, Access, PowerPoint, and the use of the internet and browsers. Hands-on exercises are required.

Prerequisite: ESL401

**IT310 Introduction to Information Technology** (3 units)
This is the first of a sequence of IT courses designed to provide students the fundamental knowledge and training in the following areas: (1) concepts and basic principles of management information systems and current information technology for business, and (2) basic business programming and database concepts. Topics of this course include an introduction to current information technology and a tour of computer systems, the internet, and World Wide Web; electronic spreadsheets, database applications for personal productivity, multimedia presentations, developing single-user systems, fundamentals of programming, multi-user and network computing, shared and distributed data, developing shared IT applications, business information systems and IT in industry, issues in information technology, and the information age: next steps. Students will receive assignments for practice on networked PC systems to learn the covered subjects and programming.

Prerequisite: IT200

**IT370 Database Design and Development For Business** (3 units)
This is the second of the IT sequence and offers a more in-depth study of database systems. Technical concepts are presented within a managerial context. Students will learn the impact of the database environment on the decision-making process. Topics include introduction to database systems, elements of database systems, data modeling, a framework for database systems design, normalized database design, the relational database model, the structured query language, the technical aspects of database design, and database systems for management decision making. Hands-on exercises and projects are required. SAP R/3 will be used as the live example for an IT system.

Prerequisite: IT310
IT450 Enterprise Information System Fundamentals (3 units)
This course provides a general introduction to information systems for electronic enterprise with emphasis on system functions, deployment planning, integration technologies, and administration basics. Topics include enterprise information system categories, Portals, ERP, CRM, application integration, industry standards, and system platforms. In addition, students will also receive an overview of enterprise IS applications such as CMS, ERP, CRM, KM, SCM, and related technologies including Java, XML, etc. Case studies and hands-on practice are required. SAP is introduced to the students.
Prerequisite: IT310

IT453 Web Site Design and Programming with JavaScript (3 units)
This course teaches the fundamentals of client-side programming for Web pages requiring data Collection or other user interaction. Students will create Web pages that execute on the client machine using JavaScript. Students will also learn more details of UNIX Operating System.
Prerequisite: IT310

Law

LAW310 Introduction to Business Law (3 units)
This course is designed as an introductory-level course in U.S. business law. The focus will be on preparing students to spot potential legal issues in the operation of businesses so they can operate legally and know when to consult an attorney before taking action. The course begins with an overview of the U.S. legal system, its fundamental structures and processes. Emphasis is placed on basic tort and contract law principles. Students will also be exposed to several substantive areas of law affecting business, including employment, environmental, corporate, securities, bankruptcy, intellectual property, and antitrust law.
Prerequisite: ENGL101

Management

MGT310 Principles of Management (3 units)
This course is designed for students to learn the basic skills, applications, and foundations of management. Specifically, students will learn organizational structure and environment, and develop skills in planning, organizing, leadership, motivation, decision-making, communication, negotiation, and managing information for decision making. This course serves as a foundation for a more in-depth study of various aspects of management in other courses.
Prerequisite: ENGL101

MGT450 Organizational Behavior and Management (3 units)
This course explores the complex dimension of organizational behavior including examination of experiential and conceptual approaches to communication, self-awareness, perception, motivation, problem solving and culture. Students apply interpersonal and intrapersonal exploration to the management of change, leadership theories and organizational issues. Real case projects are required.
Prerequisite: MGT310

MGT453L Project Management SAP Lab (1 unit)
The goal of the Project Management SAP lab is for the student to not only understand the theoretical background of project management but also be able to plan and control a project. The project manager has the task of ensuring that the project is executed as planned.
Prerequisite: MGT450

MGT460 Production and Operations Management (3 units)
New technologies, competition from emerging industrialized nations outside North America, and the productivity and quality demands from the consumers continue to shape production and operations management. This course is designed as an introductory-level course in production and operations management. Emphasis will be on planning, organizing, controlling, and a balance between the quantitative aspects and behavioral applications in production/operations management; operations strategy will be the guide for topical integration. The students will learn management process, resource conversion, and concepts, models, behavior, and behavioral applications within production/operations. Specific topics include operations management, operations strategies for competitive advantage, forecasting in operations, product and process design choices, facility and layout planning, scheduling, inventory control and quality control. The PP, MM, and QM modules of SAP R/3 may be used as demo software.
Prerequisite: MGT310

MGT460L Production and Operations Management SAP Lab (1 unit)
The Production and Operations Management SAP lab course aims to helping students learn the general configuration methods for the SAP production module. Topics include SAP history and environment, demand management, manufacturing planning and execution, manufacturing planning cycle, lead time, sales and operations planning, material requirements planning, and capacity management.
Prerequisite: MGT310

MGT480 Entrepreneurship (3 units)
This course explores the full range of the entrepreneurial process including the evaluation, development, and creation of a successful business. It will help the potential entrepreneurs and
professionals visualize and experience entrepreneurial development. The course explores the entrepreneurial approach to resources such as the development of an organizational structure, market analysis, financing entrepreneurial ventures, and screening venture opportunities. Individuals will experiment and evaluate what it takes to be an entrepreneur including developing the plan for a new business.  

Prerequisite: MGT310

Marketing

MKT310 Principles of Marketing  (3 units)  
This course introduces the major principles of marketing, marketing’s role within the company, and its role in the global economy. Studies will focus on how to find marketing opportunities with market segmentation, how to get information for marketing decisions, the elements of product planning and new product development, wholesalers and retailers and their strategies, pricing, and promotion.  

Prerequisite: ENGL101

MKT450 Marketing Management  (3 units)  
This course studies marketing management by analyzing real-world cases. Students will learn to implement and execute the marketing process through situation assessment, strategy formulation, marketing planning, marketing implementation and evaluation.  

Prerequisite: MKT310

MKT450L Marketing Management SAP Lab  (1 unit)  
This course is designed for students who are interested in using the CRM system to understand the concepts of various marketing tools. The course provides hands-on sessions using the SAP ERP SD module and the SAP CRM module, which are tightly integrated with the MM and PP functional modules.  

Prerequisite: MKT310

Mathematics

MATH201 Calculus - I  (3 units)  
This course is the first of a series in calculus designed for students to build up the fundamental background of calculus and to learn its applications to very basic problems. Topics include functions, limits, continuous functions, derivatives and applications, antiderivatives, composite functions and chain rule, graphing techniques using derivatives, implicit differentiation, finite integrals, and fundamental theorems of calculus.  

(GE – in Mathematics area)  
Prerequisite: pre-calculus subjects.

MATH208 Statistics  (3 units)  
This course is designed for students to understand the concepts, theory, and applications of probability and statistics. Topics include permutation, combination, random variables, distribution, means and variance, normal distribution, random sampling, estimation, confidence interval, hypothesis testing, linear correlation and regression.  

(GE – in Mathematics area)  
Prerequisite: Pre-calculus subjects

Physical Sciences

PHYS101 Introduction to Physical Sciences  (3 units)  
This is an introductory course to expose the students to physical science subjects including the basics of astronomy, chemistry, earth science, and physics.  

(GE- in Sciences area)  
Prerequisite: Pre-calculus subjects

Social Science

(GE – in Social Sciences area)

SOC201 California History  (3 units)  
This course is designed to expose the students to the uniqueness of California history and its evolution. Topics include the social, economic, and political development of the “Golden State” over the last three centuries, spanning the Native-American, Spanish, Mexican, and American periods. Lectures, case studies, and field trips for research are the forms of study in this course.  

Prerequisite: ENGL101

SOC215 Introduction to Sociology  (3 units)  
This course provides a study of culture, social organization, and social relations. Additional topics include the major social problems in society, with an emphasis on how those problems are interrelated and the role of society in their creation and perpetuation. Issues and problems related to cross culture and diversity will also be addressed.  

Prerequisite: ENGL101

SOC235 Multiculturalism in the United States  (3 units)  
This course looks into various aspects of multiculturalism in American society, exploring issues related to race, ethnicity, gender, sexual orientation, disability, and other social group identities.  

Prerequisite: ENGL101

SOC245 Health Psychology  (3 units)  
This survey course will ask: What is health, how do you know you are well, when should you seek professional services, where do I find the right doctor, why should I take good care of myself, and whom do I go to and for what? Concepts and facts will be given to understand and apply to: the body and its systems, the brain and the mind, physical diseases, chronic pain, mental illnesses, personality disorders, sleep and relaxation, positive thinking, emotional intelligence, behavioral health, nutrition, exercise, health care treatments, alternative and complementary medicine, medications and adverse side effects, medical specialties, national costs,
Prerequisite: ENGL101

**SOC250 Public Administration (3 units)**
This course serves as an introduction to public administration. Early key thinkers in the development of public administration will be examined. During the semester, topics such as public policy formation, public management, human resources, reinvention, privatization, e-Government, public finance, performance measurement, and ethics will be reviewed. Students will become familiar with the primary issues and challenges facing public administrators today.

Prerequisite: ENGL101

**SOC260 Civilization and Urbanization (3 units)**
This is an introductory course designed to cover the 5,000 year shift from rural to urban throughout the world. The city is civilization’s greatest work of art but has many challenges. The ancient walled cities, utopian writings, urban theories, religious experiments, English Garden Cities and new towns, American Greenbelt Towns, company towns, flight to the suburbs, Neo-traditional planning, the New Urbanism, and current sustainable development, Smart Growth, to the more recent Greening and Healthy Cities will be described and the actual city and regional planning practices are shown.

Prerequisite: ENGL101

**SOC270 Early American History (3 units)**
This course is designed to lead the students to examine the early periods of American history that shaped the development of the nation, including America before Columbus, European expansion, the founding era and Revolution, the Constitution and the new republic, and subsequent periods of civic and political growth up to the Civil War.

Prerequisite: ENGL101

**SOC275 The American Experience (3 units)**
This course is designed to lead the students to examine the 20th century rise of the United States as a modern multiethnic society with emphasis on the socioeconomic and political forces that have shaped its development.

Prerequisite: ENGL101

---

**Master’s Degree Program**

The School of Business and Information Technology offers one master’s degree program: Master of Business Administration (MBA).

**Objective**

The objective of the master’s degree programs is to provide advanced training to those who wish to practice their profession with increased competence in the global business industries. The program emphasizes both mastery of subject matter and an understanding of related research and research methodology. This emphasis implies development of the student’s ability to integrate and apply the subject matter.

**Committee Oversight**

The responsibility for developing, modifying, and maintaining the master’s degree program is performed by the Academic Committee for this School. The Academic Committee is lead by a designated group of members who invite inputs from qualified students, faculty, administrators, employers, as well as the Advisory Committee members to conduct their duties.

**Credential Requirements**

The master’s degree program applicants must hold a valid bachelor’s degree before attending NPU and meet the minimum grade point average requirement for consideration of acceptance.

**Application Requirements**

To apply for admission into a master’s degree program, the applicant is required to submit the following to the NPU Admissions Office: (1) an Application Form (online or hardcopy), (2) a nonrefundable application fee, (3) official transcripts from previously attended colleges; (4) a document certifying completion of a bachelor’s degree; a transcript printed with degree completion information will suffice (5) an English proficiency document is required for non-native English speakers: An official transcript with English course records or TOEFL/IELTS score report or equivalent will suffice. NPU’s English assessment exam, when available, can be taken by the applicant to meet this requirement. See English Proficiency Requirement below for detailed information on the English entrance requirement, and (6)
Entrance assessment test: GMAT for the MBA degree applicants. Applicants have the option to take the on-campus equivalent assessment test. The scores are for reference purpose and will not affect the admission evaluation for the applicants. (7) **Resumes** are required for applicants interested in applying for scholarships.

- **International Students:** In addition to the above general application requirements, an international applicant is also required to submit the following additional documents: (a) a financial support document – either the applicant’s bank statement or a certified affidavit of support (form I-134 or equivalent) from a financial sponsor indicating that a minimum amount of $25,000 is available for the applicant to pursue his/her study in the first academic year at NPU, (b) a transfer student (from a U.S. institution) is required to submit a photocopy of his/her previous I-20 form and request the other school’s international student advisor to complete the International Student Transfer Record form for NPU and conduct the required SEVIS transfer process, and (c) upon reporting to NPU, photocopies of the student’s passport, visa, and I-94 (admission & departure) document. The student will be asked to show an identification document attesting his/her official name, if applicable.

**Veteran Students:** Currently the CSAAVE is the state agency responsible for approving veteran education programs.

**English Proficiency Requirement**

Non-native English speakers are considered meeting the entrance English proficiency requirement if they meet any of the following requirements:

- Used English as the official language and completed study in a high school or college degree program,
- Has completed a college English credit course in an English speaking institution,
- Has submitted an official TOEFL or IELTS test score report to NPU and the score meets the entrance English requirement set by the NPU admissions office.

**The TOEFL institution code for NPU is 9626.**

Conditional acceptance may be granted to applicants whose TOEFL/IELTS scores or other equivalent records do not meet the above requirement but have reached intermediate level of the American Language classes (ESL) offered by NPU. These students will be required to enroll in ESL classes until they pass the advanced level ESL classes before enrolling in degree courses.

**NPU’s English Placement Examination (EPE):** An applicant may be offered the option to take NPU’s English Placement Examination in place of the standardized tests. The exam result affects the applicant’s admission status. A fee will be charged for this service.

NPU may accept the English assessment reports from a few U.S. English language institutions recognized by major universities in the U.S.

**General Background Requirements for Pursuing Master’s Degree**

**Background Preparation:** The background preparation for the master’s degree program is described at the beginning of the program. Background deficiencies are identified in the admission evaluation report received by each applicant. The student is required to **clear the deficiencies early in his/her study at NPU.**

**How to Clear Deficiencies:** The graduate student may clear each background deficiency by taking and passing the preparatory module course at NPU. With advance approval by the Admissions Committee, the student may be allowed to clear a deficiency by taking a proficiency exam on the subject.

Courses taken elsewhere after joining the degree program at NPU will not waive a deficiency requirement. **Students may not take the deficiency courses at another institution while attending NPU.**

**Transfer of Credit from Other Institutions**

Course credit earned at other institutions of higher education may be transferable. Credit transfer is made by the admission evaluators while conducting the admission evaluation. The following statements apply to all transfer credits:

---

The NPU Admissions Office must receive all official transcripts prior to the student’s joining a degree program. Without preapproval, transcripts received after the
student joins NPU cannot be used in transferring credits, except for records from the term immediately preceding the student’s starting semester at NPU.

-- The student was officially enrolled in the course.

-- When evaluating any foreign transcript, the admission evaluators may accept or transfer credit based on their knowledge of the course contents in comparison with similar courses offered in the U.S.

-- Courses for transfer to NPU may not be completed concurrently at another institution while attending NPU.

-- Credits are transferred by the following conversion:

**Definition of a Trimester/Semester Unit:**

One trimester/semester credit hour equals, at a minimum, 15 classroom hours of lecture, 30 hours of laboratory, and 45 hours of practicum.

**Conversion Factor:**

\[ 1 \text{ quarter unit} = 0.66 \text{ trimester/semester unit} \]

**Grades Required for Transfer Credit**

In the master’s degree program, courses completed with grades "A" and "B" are transferable. Courses completed with a “CREDIT” grade are transferable only if the institution’s grading policy states that “CREDIT” is granted with a letter grade which meets the above condition. This policy must be in writing from the institution (transcript key or letter of verification).

A maximum of 9 units of graduate-level course credits earned from an accredited graduate school or an equivalent foreign institution may be transferred towards the graduation requirements for a master’s degree program.

NPU undergraduate students who take graduate level courses for graduate credits at NPU while completing their undergraduate degrees are allowed a maximum of 12 units to be counted towards a graduate degree. These courses may not count towards the undergraduate degree. These students may apply for admission to a master’s degree program at NPU in the last semester of their undergraduate study. They are required to complete their undergraduate study before being officially admitted into a graduate program.

**Proficiency Exams:** A student may be required to demonstrate proficiency in a subject taken more than ten years prior to application with NPU by successful completion of a proficiency examination.

**Tuition**

Tuition is charged per unit. Tuition for courses taken to fulfill the master’s degree requirement is $450.00 per unit.

**Tuition per Unit for Courses Audited**

For courses audited (without earning credit), the tuition is half the regular unit rate. Not all courses can be taken with “audit” status.

**Estimated Semester Cost of Tuition for a Full-Time Student**

The tuition is $4,050 for a master’s degree student taking 9 units per semester.

**Graduation Requirements**

The Master of Business Administration degree program requires a minimum of 36 units of graduate-level courses. Additional coursework may be required for a student whose undergraduate degree program was in a discipline other than that of the master’s degree program. The MBA degree program requires course work in the following areas:

1. Foundation requirements,
2. Concentration area of study,
3. Electives, and
4. Capstone course.

The following are required for graduation:

- A graduate student admitted with undergraduate deficiencies must clear the deficiencies in the early terms. The student may clear a subject by either taking the course and earning a passing grade or passing a proficiency exam on the subject,
- Maintain a grade of C- or better for all courses taken to clear deficiencies or towards the degree requirements,
- Maintain an overall G.P.A. of 3.0 or better,
● Maintain good standing with the University – with clear financial, library, and other school records,
● The student is approved to graduate after filing a petition for graduation.

✦ Concentration Area of Study

The MBA program provides an opportunity for the student to choose one from a variety of concentration areas of study to gain in-depth understanding of the chosen field and plan for his/her professional career. Academic counselors are on-hand to assist the student to make his/her study plan and assess the business trend and job market.

✦ Capstone Course

The capstone course is intended to integrate the knowledge and skills that the student has acquired from the foundation, concentration area of study, and elective coursework required for the program in the capstone course under the guidance of the course instructor. The instructor determines the course objectives and scope based on the degree curriculum and business trend.

With this learning experience, the student is prepared to pursue his/her career in the changing global business arena.

The student shall take the capstone course near the end of his/her program of study.

✦ Career Planning

The students are encouraged to utilize the online eCareer Center and work with the Career Center staff to prepare their resumes and participate in job search activities when they are ready for such a pursuit.

The following is the description of the MBA degree program, with a statement of its objectives, the background preparation required, and the program curriculum.

Course Numbers: Courses numbered as PBUSxx are preparatory module courses to clear undergraduate background deficiencies, and 400Gs and 500s are to meet the graduation requirements.

Master of Business Administration (MBA)

Objectives: The primary objectives of the MBA degree program are: (1) to provide a knowledge base of interdisciplinary business theories and techniques to the students, (2) to train and to develop students’ practical skills in a chosen concentrated area for career development, and (3) to develop the students’ decision-making and leadership capabilities to face the challenges of a dynamic business world staged with diverse, multicultural, and global business settings. The emphases are in the fields of modern global business management, digital enterprise system management, as well as green business development. Specific studies cover the fields of accounting, financial management, business knowledge management, green business management, global business and marketing, and project and high-technology and product management.

Background Preparation

Students admitted into the MBA degree program are required to have proper business background preparation for taking the graduate level coursework. A student with any background deficiency is required to take the specifically designed business preparatory model course to clear it. With advance approval by the Academic Review Committee, the student may be allowed to clear the deficiency by taking a proficiency exam. The student must clear prerequisites before taking the degree required courses. In addition, English proficiency is also required. Refer to the section on “English Proficiency Requirement” in the chapter Admission Policies for details.

The following are the business preparatory module courses covering the required background subjects:
Preparatory Module A (PBUS01): Essentials of Management and Business Law
Preparatory Module B (PBUS02): Essentials of Economics and Marketing
Preparatory Module C (PBUS03): Essentials of Accounting and Finance
Preparatory Module D (PBUS04): Essentials of Quantitative Analysis and Information Technology

PBUS03 covers accounting and finance subjects at basic level (ACC201 and FIN310). Students choosing the accounting concentration must also have the background in ACC201L, ACC202, and ACC202L.

**MBA Curriculum**

A minimum of **36 semester units of graduate study** are required for the MBA program. The student must meet prerequisite requirements when taking any of the following courses.

**I. Foundation Requirements** (15 units)

The required courses provide a knowledge base of interdisciplinary business theories and techniques and decision-making methodology.

- BUS501       Quantitative Methods for Business
- FIN501       Financial Management
- GBM500       Green Business Management
- HRM531       Human Resource Management
- MGT530       Logistics and Operations Management

**II. Area of Concentration Requirements** (12-15 units)

The student must select an area of concentration and complete the required coursework. This is to ensure the student’s competence in the selected area.

**Area A: Accounting**

- ACC451G Intermediate Accounting – I
- ACC452G Intermediate Accounting – II
- ACC501       Advanced Accounting
- ACC512       Federal Taxation of Business Enterprises
- ACC530       Auditing

**Area B: Finance**

- FIN510       Investment
- FIN512       Financial Risk Management
- FIN522       International Trade and Investment
- FIN568       Corporate Finance

**Area C: Business Information Management**

- IT450G       Enterprise Information System Fundamentals
- IT453G       Web Site Design and Programming with JavaScript
- IT553        Business Intelligence and CRM
- IT560        Enterprise Resource Planning (ERP)
Area D: Green Business Management

GBM505  Green Economics and Policy
GBM510  Green Business Marketing
GBM520  Green Technologies: Their Operations and Financial Analysis
GBM530  Environmental Management Systems and Regulatory Compliance

Area E: Global Business and Marketing

MKT450  Marketing Management
MKT541  Strategic Marketing
MKT542  Global Marketing
MKT545  Global Trade and Operations

Area F: Project Management

MGT501  Project Management
MGT540  Management of Innovation
MGT542  Technology and Product Management
MGT550  Global Outsourcing Project Management

III. Electives (3-6 units)

The student may elect graduate-level courses (courses numbered 4xxG, 5xx, and higher level courses) in any discipline to meet the electives requirement. With the “Accounting” concentration area, a minimum of 3 units in elective coursework are required. For other concentration areas, a minimum of 6 units in elective coursework are required. Prerequisite requirements must be met when taking any course.

Practicum: When applicable, the student may take curricular practicum courses and engage in practical training to work on company projects which are directly related to the student’s course of study. The student must observe the rules required for taking the practicum courses.

IV. Capstone Course (3 units)

MBA595  Business Administration Capstone Course
Course Descriptions
Master of Business Administration Degree Program
School of Business Administration and Information Technology

Master’s degree courses are numbered in the 500s. The MBA degree program allows for a limited number of credits for 400 level courses with a “G” suffix.

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>450G-490G</td>
<td>Mezzanine courses for graduates</td>
</tr>
<tr>
<td>500-699</td>
<td>Graduate level courses</td>
</tr>
</tbody>
</table>

For information on prerequisite subjects numbered below 450, refer to the section on Course Descriptions for the Bachelor’s Degree Program, School of Business and Information Technology.

Courses are listed by subject: Accounting, Business (general courses), Curricular Practicum, Finance, Green Business Management, Human Resource Management, Information Technology, Law; exclusive MBA courses, Management, Marketing. The course lists are followed by a list of preparatory module courses for business graduate programs and a list of online courses.

Each course description is followed by its prerequisite information expressed in course numbers.

Each 1 unit of a practicum course requires at least 45 hours of practical experience related to the student’s program curriculum.

ACC450G Managerial Accounting (3 units)
This class applies the essentials of financial accounting to the practice of management. Students will understand cost definitions, cost concepts, cost behavior and cost estimation; also, how cost accounting is applied to manufacturing and service organizations, the principles of planning and control for effective cost-related management, capital budgeting, cash flow statements, and how to analyze financial statements.
Prerequisite: ACC201 or PBUS03

ACC451G Intermediate Accounting - I (3 units)
This course is designed for students who are interested in pursuing careers as accounting professionals. This course builds on the knowledge obtained in the Principles of Accounting series. Topics include understanding financial accounting and accounting standards, financial statement preparation, required disclosures, and in-depth study of current assets, revenue recognition and fixed assets.
Prerequisite: ACC202

ACC451LG Intermediate Accounting - I SAP Lab (1 unit)
This course is designed for students who are interested in pursuing careers as accounting professionals. This practical lab provides hands-on, step-by-step instructions and real-world examples for the most frequently used FI submodules found in SAP ECC 6.0. The student will be able to apply what he/she has learned to customize his/her system to meet his/her accounting, planning, and reporting needs. In addition, the student will learn skills which he/she will be able to apply to other areas of functionality within the SAP suite. NPU provides educational establishments in the introduction of SAP as well as positions the students for future career enhancement.
Prerequisite: ACC202

ACC452G Intermediate Accounting - II (3 units)
This course is a continuation of Intermediate Accounting - I. Subject matter includes current and long-term liabilities, stockholders’ equity, investments, pension and post-retirement benefits, leases and cash flow statements.
Prerequisite: ACC451G

ACC490G Introduction to Taxation (3 units)
This course covers taxation concepts applied to individual’s income, deductions, credits, property transactions, and tax accounting methods. An understanding of the concepts will enable students to prepare quality individual income tax returns as a professional. The course will also cover taxation rules governing financial planning.
Prerequisite: ACC201 or PBUS03

ACC501 Advanced Accounting (3 units)
This course is designed for accounting track graduate students who want to have a complete understanding of the concept of consolidation requirements, consolidated financial statements, and accounting techniques relating to particular types of business and non-business entities. The student will also explore various tax aspects of consolidated financial statements and participate in case studies.
Prerequisite: ACC451G

ACC512 Federal Taxation of Business Enterprises (3 units)
This course is designed to give students an understanding of the concepts of federal taxation of corporations, partnerships, estates and trusts. An understanding of the concepts will enable students to prepare corporation and partnership tax returns in a professional environment. Also covered are rules governing estates and trusts.
Prerequisite: ACC451
ACC530 Auditing (3 units)
In this course, students learn auditing techniques with an emphasis on the Electronic Data Processing environment, audit procedures, practice and programs; working paper preparation and report writing. The students will experience using electronic auditing software to work on their homework and projects.
Prerequisite: ACC451

ACC540 Accounting Information Systems (3 units)
This course provides a conceptual framework for contemporary accounting information systems and accounting cycles. It covers database concepts, internal control, transaction cycle and business process, expenditure cycle, conversion cycle, general ledger, and enterprise resource-planning systems. Students may be introduced to SAP R/3 for data manipulation and report generation.
Prerequisite: ACC451

BUS501 Quantitative Methods for Business (3 units)
This course is designed to introduce students to contemporary business decision-making methodologies and develop the students’ ability to analyze complex systems. Quantitative methods of management science and operations research using quantitative analysis are the focus of this course. The students learn to evaluate models from real-world examples as well as techniques to analyze and solve the problems. Students also learn to use quantitative analysis software, critically evaluate the results, and perform sensitivity analysis.
Prerequisite: MATH208 or PBUS04

BUS589 Special Topics (3 units)
Special topics courses are offered to graduate students in business administration programs by current faculty members or invited guest speakers to expose the students to special topics related to their studies. These courses are conducted the same way as regular courses.
Prerequisite: BUS501

Curricular Practicum

CPT501 Curricular Practicum (1 unit)
Curricular practicum, or curricular practical training, is a supervised practical experience that is the application of previously studied theory. It is defined as alternative work/study, internship, cooperative education, or any other type of required internship or practicum that is offered by sponsoring employers through cooperative agreements with the school and the course is an integral part of an established curriculum. At least three hours of work in a practical setting has the credit equivalency of one hour of classroom lecture (1 unit). To be eligible to take this course, the student must have completed at least two semesters of coursework required in his/her degree program, obtained a written agreement that outlines the arrangement between the institution and the practicum site (including specific learning objectives, course requirements, and evaluation criteria), and received approval by a designated advisor. International students must follow additional rules required by the U.S. Immigration and Customs Enforcement. The student must use NPU’s online tool to submit his/her application for taking this course before meeting with a designated advisor for an assessment of eligibility. Information and instructions concerning this course are provided in the application form. This is a part-time practicum course taken by the graduate student to work no more than twenty hours each week during the approved practicum period. Failure in this course will prevent the student from taking any curricular practicum course afterwards. Prerequisite: Refer to the instructions on the application and agreement documents.

CPT502 Curricular Practicum (2 units)
Curricular practicum, or curricular practical training, is a supervised practical experience that is the application of previously studied theory. It is defined as alternative work/study, internship, cooperative education, or any other type of required internship or practicum that is offered by sponsoring employers through cooperative agreements with the school and the course is an integral part of an established curriculum. At least three hours of work in a practical setting has the credit equivalency of one hour of classroom lecture (1 unit). To be eligible to take this course, the student must have completed at least two semesters of coursework required in his/her degree program, obtained a written agreement that outlines the arrangement between the institution and the practicum site (including specific learning objectives, course requirements, and evaluation criteria), and received approval by a designated advisor. International students must follow additional rules required by the U.S. Immigration and Customs Enforcement. The student must use NPU’s online tool to submit his/her application for taking this course before meeting with a designated advisor for an assessment of eligibility. Information and instructions concerning this course are provided in the application form. This is a full-time practicum course taken by the graduate student to work more than twenty hours each week during the approved practicum period. Failure in this course will prevent the student from taking any curricular practicum course afterwards. Prerequisite: Refer to the instructions on the application and agreement documents.

Finance

FIN450LG Financial Management SAP Lab (1 unit)
This course is designed for students who are interested in pursuing careers as accounting professionals. This lab provides hands-on and step-by-step instructions for the students to practice in a SAP environment. Topics focus on how to create cost centers and allocate actual cost and planned cost within different cost centers.
Prerequisite: FIN310 or PBUS03
**FIN501 Financial Management** (3 units)
This course is designed to further introduce modern financial theories, tools, and methods used for the analysis of financial problems. The point of view of corporate financial managers will be taken to interact with efficient capital markets. Therefore, while making the best use of constrained resources is necessary, maximizing shareholders’ equity is also vitally important. The primary focus is on analysis and forecast of internal operations and the use of short-term and long-term capital.

*Prerequisite: FIN310 or PBUS03*

**FIN510 Investments** (3 units)
This course covers the foundations of investment management. Topics include theory and empirical evidence related to portfolio theory, market efficiency, asset pricing models, factor models, and option pricing theory. Students are expected to combine market research results and electronic information sources to create optimal investment strategies.

*Prerequisite: FIN501*

**FIN512 Financial Risk Management** (3 units)
This course is designed to further introduce modern financial theories, tools, and methods in dealing with financial risks. Financial risk management has become an extremely important discipline for corporations, financial institutions, and many government enterprises, particularly in challenging economical times.

*Prerequisite: FIN501*

**FIN522 International Trade and Investment** (3 units)
This course covers the theories of international trade, through comparative advantage and related corporate strategies, the impacts of emerging regional economic blocks, the institutions of the multilateral trading system, and trade barriers. Students will learn the mechanics of international payment, shipping, and distribution.

*Prerequisite: FIN501*

**FIN568 Corporate Finance** (3 units)
This course belongs to the accounting/finance concentration area of study. The first part of the course covers essential corporate finance subjects including executive compensation, corporate governance, and bankruptcy law. Lectures, discussions, and case studies will be the form used for this part of study. The second part of the course consists of discussions of corporate financing such as mergers, acquisitions, valuations; corporate restructuring, LBOs, MBOs, and merchant banking.

*Prerequisite: FIN501*

**FIN580 Portfolio Management** (3 units)
This course teaches advanced portfolio decision making. Topics include index models, portfolio performance measures, bond portfolio management and interest immunization, stock market anomalies and market efficiency.

*Prerequisite: FIN501*

**FIN585 International Finance** (3 units)
This course prepares the students for a career in international finance. The course discusses the financial environment in which the multinational firm and its managers must function. The course focuses on foreign exchange management and financial management in a multinational firm. It points out to the students the basic principles of profit-seeking and risk avoidance practices in the volatile global financial markets.

*Prerequisite: FIN501*

**Green Business Management**

**GBM500 Green Business Management** (3 units)
This course aims to provide the student an understanding of the mounting demand for business management practices to create not just financial value but to effectively respond as well to the environmental sustainability and social responsibility concerns of society. It will provide the student familiarity of the “best practices” of businesses in responding to this demand to create “sustainable value” and an understanding of the basic principles behind these practices. The course will also develop in the student an appreciation and a sense of commitment to practice “greener” business management practices in their future professional careers.

*Prerequisite: MGT310 or PBUS01*

**GBM505 Green Economics and Policy** (3 units)
Green economics represents a transdisciplinary attempt to integrate the social sciences (primarily economics) with the natural sciences (primarily ecology). This course is designed to re-orient the resource allocation decisions of managers in a way that the decision outcome criterion is not simply economic efficiency but sustainability. More specifically, the course seeks to teach students the principles of resource allocation that achieve economic, ecological and social sustainability. While economic efficiency is still a paramount decision objective, it should be pursued after measures are taken to guarantee that human activities do not threaten the viability of life on our planet and that all people can secure and produce the means for leading healthy lives (guarantee of basic human rights). The sustainability problems of unregulated markets are also examined.

*Prerequisite: GBM500*

**GBM510 Green Business Marketing** (3 units)
In this emerging green era, green business marketing faces unique challenges. On the one hand, it involves dealing with a major trend without formulated requirements; on the other hand, it faces a rapidly growing number of conscious green consumers demanding green business practices. As a result, new marketing strategies, vehicles, and tools are needed by businesses. In this course the students learn to develop marketing plans and business practices that seek a balance among economy and environment, as well as social responsibilities. Case studies and group projects will be conducted as part of the coursework requirements.

*Prerequisite: GBM500*
GBM520 Green Technologies: Their Operations and Financial Analysis (3 units)
This course is designed to acquaint students with the green technologies that hold the most promise for solving the unsustainability problems of current business practices (non-renewable resource usages and polluting activities). It will teach the student to evaluate these technologies as to their technical feasibility (will it work) as well as their financial viability (will it pay). After taking the course, the student should be confident in identifying green technology solutions to business problems and evaluating them.
Prerequisite: GBM500

GBM530 Environmental Management Systems and Regulatory Compliance (3 units)
Business managers may sometimes not be aware of the considerable risk exposure they and their firms face of running afoul of environmental laws and regulations. The course acquaints students with the common environmental laws and regulations that municipalities, states and national governments enforce. It also teaches them how businesses establish an environmental management system function to ensure compliance with all environmental laws and regulations to minimize this risk and be pro-active in meeting the firm’s environmental and social sustainability responsibilities.
Prerequisite: GBM500

Human Resource Management

HRM452LG Human Resource Management SAP Lab(1 unit)
This SAP lab course gives a brief overview of the integrative processes in SAP ERP Human Resource Management. This course is designed to start with a basic overview of the module and end with advanced knowledge of configuration and testing. Students will learn from lab materials and homework assignments to simulate real-life projects. Lab exercises in this class include organizational structure, recruitment and selection, benefits, risk management, compensation management, travel and personnel time management, training and event management, personnel development, and information display and reporting.
Prerequisite: MGT310 or PBUS01

HRM531 Human Resource Management (3 units)
This course provides students and practicing managers with a comprehensive overview of essential personnel management concepts and techniques. The focus is on essential topics such as job analysis, candidate screening, interviewing, testing, hiring, evaluating, training, motivating, promoting, compensating and their associated legal constraints. Additional topics covered include global HR, diversity awareness and training, and sexual harassment legal requirements. Practical applications such as how to appraise performance and benefits and handle grievances are explored. Additionally, developing independent work teams that foster creativity and innovation will be discussed.
Prerequisite: MGT310 or PBUS01

HRM603 Strategic Workforce Planning (3 units)
This course begins with the discussion of the need for manpower planning and gives samples of plans developed for various types of organizations such as manufacturing, high-tech, small business, etc. This course would give students an opportunity to learn about and develop a manpower plan which is part of the business plan and also an ongoing dynamic document developed as a part of the strategic planning component of the organization. It also has to do with scheduling, rosters and succession planning which is a process of identifying a long-term plan for the orderly replacement of key employees. The course also explores cases of developing a manpower plan including developing a Gap Analysis to determine manpower needs and budgeting for the manpower needs. Developing new HR manpower configurations such as self-managed teams, telecommuting, outsourcing, temps-to-hire and other methods to make companies more flexible and offer economical solutions to the high cost of knowledge workers. The course includes case studies and actual writing of several manpower plans for various sizes of organizations.
Prerequisite: HRM531

Information Technology

IT450G Enterprise Information System Fundamentals (3 units)
This course provides a general introduction to information systems for electronic enterprise with emphasis on system functions, deployment planning, integration technologies, and administration basics. Topics include enterprise information system categories, Portals, ERP, CRM, application integration, industry standards, and system platforms. In addition, students will also receive an overview of enterprise IS applications such as CMS, ERP, CRM, KM, SCM, and related technologies including Java, XML, etc. Case studies and hands-on practice are required. SAP is introduced to the students.
Prerequisite: IT310 or PBUS04

IT453G Web Site Design and Programming with JavaScript (3 units)
This course teaches the fundamentals of client-side programming for Web pages requiring data Collection or other user interaction. Students will create Web pages that execute on the client machine using JavaScript. Students will also learn more details of UNIX Operating System
Prerequisite: IT310 or PBUS04

IT510 Advanced e-Business Programming and Design (3 units)
This course is designed for the students to learn details of Perl and CGI programming and applications. Topics include client/server concept, Perl programming, mechanism of CGI, Apache web server, and creating CGI applications with Perl, HTML, JavaScript, and
database. Hands-on exercises throughout the course are required.

Prerequisite: IT453G

IT515 Emergent Information Technologies for Business Applications (3 units)

This course is a study of the emergent information technology that will impact future business practices and the business decision making processes. The most recent technology developments and trends will be covered. The course will be conducted through formal lectures, seminars given by invited speakers, as well as the students’ own research findings and reporting.

Prerequisite: IT450G

IT553 Business Intelligence and CRM (3 units)

A major challenge to a business in the information age is to turn mountains of data into useful information that can help business managers analyze sales trend, customer behavior, and other key performance metrics to make the best decisions. This course introduces students to the effective methodology and a wide range of techniques used to generate business intelligence (BI) and applications to customer relationship management (CRM). Topics include: data warehouse and data mart, extraction, transformation, and loading (ETL) process, Ad hoc query and reporting, data mining, and CRM systems. The students will explore new software and tools provided by companies such as Oracle, Teradata, SAS, and Business Objects, and gain hands-on experience in BI and CRM applications. Real case studies in this course will also help the students gain business insight. Taking this course should sharpen the students’ abilities to advance their professional career with this IT trend. The students will explore SAP R3 software and gain hands-on experience in BI and CRM applications.

Prerequisite: IT450G

IT560 Enterprise Resource Planning (ERP) (3 units)

This course teaches the students to use SAP software for enterprise resource planning. Students will learn the mySAP technology and how it applies new web computing and e-business philosophy to help the different market segments solve their business issues and processes. The following will be discussed: cross-industry solution- CRM, e-procurement and business intelligence; Internet Transaction server, mySAP workplace, marketplace, security within mySAP environment, web application server, mySAP.com projects implementation, solution in different industries, and SAP future and challenge. Case studies will also assist the students’ learning in this course.

Prerequisite: IT450G

IT589 Special Topics on Information Technology (3 units)

Special topics courses are offered to graduate students in the MBA program by current faculty members or invited guest speakers to expose the students to emerging information technologies. These courses are conducted the same way as regular courses.

Prerequisite: IT450G

Law

LAW570 Modern Law of Corporation (3 units)

This course teaches legal issues in the formation, operation, and dissolution of corporations, partnerships, and sole proprietorships; emphasis is on the advantages and disadvantages of each in terms of taxation, finance, obligations to third parties, and operating problems.

Prerequisite: LAW310 or PBUS01

MBA

MBA595 Business Administration Capstone Course (3 units)

The capstone course is intended to integrate the knowledge and hands-on experience that the student has acquired from the foundation, concentration, and elective coursework required for the program in the course under the guidance of the course instructor. The instructor determines the course objectives and scope based on the business curriculum and trends. The instructor guides the students to develop their integration ability. The student shall take the capstone course near the end of his/her program of study.

Prerequisite: MGT530

Management

MGT450G Organizational Behavior and Management (3 units)

This course explores the complex dimension of organizational behavior including examination of experiential and conceptual approaches to communication, self-awareness, perception, motivation, problem solving and culture. Students apply interpersonal and intrapersonal exploration to the management of change, leadership theories and organizational issues. Real case projects are required.

Prerequisite: MGT310 or PBUS01

MGT453LG Project Management SAP Lab (1 unit)

The goal of the Project Management SAP lab is for the student to not only understand the theoretical background of project management but also be able to plan and control a project. The project manager has the task of ensuring that the project is executed as planned.

Prerequisite: MGT450G

MGT460G Production and Operations Management (3 units)

New technologies, competition from emerging industrialized nations outside North America, and the productivity and quality demands from the consumers continue to shape production and operations management. This course is designed as an introductory-level course in production and operations management. Emphases will be on planning, organizing, controlling, and a balance between the quantitative
aspects and behavioral applications in production/operations management; operations strategy will be the guide for topical integration. The students will learn management process, resource conversion, and concepts, models, behavior, and behavioral applications within production/operations. Specific topics include operations management, operations strategies for competitive advantage, forecasting in operations, product and process design choices, facility and layout planning, scheduling, inventory control and quality control. The PP, MM, and QM modules of SAP R/3 may be used as demo software.

Prerequisite: MGT310 or PBUS01

MGT460LG Production and Operations Management SAP Lab (1 unit)
The Production and Operations Management SAP lab course aims to helping students learn the general configuration methods for the SAP production module. Topics include SAP history and environment, demand management, manufacturing planning and execution, manufacturing planning cycle, lead time, sales and operations planning, material requirements planning, and capacity management.

Prerequisite: MGT310 or PBUS01

MGT480 Entrepreneurship (3 units)
This course explores the full range of the entrepreneurial process including the evaluation, development, and creation of a successful business. It will help the potential entrepreneurs and professionals visualize and experience entrepreneurial development. The course explores the entrepreneurial approach to resources such as the development of an organizational structure, market analysis, financing entrepreneurial ventures, and screening venture opportunities. Individuals will experiment and evaluate what it takes to be an entrepreneur including developing the plan for a new business.

Prerequisite: MGT310 or PBUS01

MGT501 Project Management (3 units)
This course introduces the principles of project and program management, the roles of project management, matrix organization in both private and public segments, and project management techniques leading to the efficient execution and completion of projects. Proposal development, case studies, and independent projects are required.

Prerequisite: BUS501

MGT530 Logistics and Operations Management (3 units)
This course is designed to prepare students with the ability in logistics and operations management. Topics include how managers plan and control operations to achieve optimum productivity, top quality, and customer satisfaction, qualitative and quantitative methods of managing production and operations, methods of total quality management (TQM) and continuous improvement in the service industries and in production operations. Students will also learn to plan for and operate under changing technologies in international operations and in integrated operations. The instructor may demonstrate SAP R/3 operations module.

Prerequisite: MGT310 or PBUS01

MGT538 International Business Management (3 units)
This class reviews the classic five functions of management: planning, organizing, staffing, leading, and controlling. Students will compare managerial practices of Europe, Asia, and Latin America. The class also covers the importance of quality and continuous improvement for gaining a competitive edge. Students will learn practical aspects of management from actual case studies, the strategic considerations for management in the international environment, and the roles of the latest information technologies, including computer networks, telecommuting, decision support systems, and CAD, CAM, CAE.

Prerequisite: MGT450G

MGT540 Management of Innovation (3 units)
This course is designed to equip the students with the knowledge and management skills to address the needs of new and innovative enterprises in a changing and uncertain environment. Topics include technology forecasting and assessment, program or product selection and control, market development, financial management, and regulations and ethics.

Prerequisite: BUS501

MGT542 Technology and Product Management (3 units)
This course is designed to give students a practical experience in product development, and focuses on the management of engineering and technology activities. Topics include technology product design, planning, production, marketing, sales, and maintenance; technological product life cycle from research and development through new product introduction, marketing requirement documentation (MRD), product positioning, channel inventory management, outbound communications, and the organizational role of the product marketing manager. Case studies and project presentations are required.

Prerequisite: BUS501

MGT550 Global Outsourcing Project Management (3 units)
Global outsourcing management is becoming one of the most important new management fields in this highly competitive 21st century global economy. In this course the students will learn the important issues related to global outsourcing management as well as the actual implementation mechanism for a successful global outsourcing management business. Throughout the course, cross-cultural and cross-boarder considerations and diversity management skills will be heavily emphasized. Case studies will be made on successful and failed global outsourcing projects or businesses. It will be easy for the students to connect to this subject due to Silicon Valley’s business climate.

Prerequisite: BUS501
Marketing

MKT450G Marketing Management (3 units)
This course studies marketing management by analyzing real-world cases. Students will learn to implement and execute the marketing process through situation assessment, strategy formulation, marketing planning, marketing implementation and evaluation.
Prerequisite: MKT310 or PBUS02

MKT450LG Marketing Management SAP Lab (1 unit)
This course is designed for students who are interested in using the CRM system to understand the concepts of various marketing tools. The course provides hands-on sessions using the SAP ERP SD module and the SAP CRM module, which are tightly integrated with the MM and PP functional modules.
Prerequisite: MKT310 or PBUS02

MKT541 Strategic Marketing (3 units)
This course will teach the students fundamental concepts and practices in marketing research and marketing data analysis, and use of the data and financial analysis to set strategic positioning strategies. Emphasis will be on practical marketing research skills development and basic analysis mechanisms leading to strategic marketing. Students will learn both the primary source (such as surveys) as well as secondary sources (internet, publications, etc.) in research techniques. Students will also engage in their own marketing research projects. Although statistical analysis will be covered in the course, quantitative analysis skills will be the main focus. The course also covers an overview of quantitative and qualitative tools for strategic marketing, market segmentation process, strategic positioning, and channel marketing issues. Case studies and marketing requirements reports are required.
Prerequisite: MKT450G

MKT542 Global Marketing (3 units)
This course considers how the culture and environment of different countries affect marketing strategy, how to perform a comprehensive analysis of a country to support marketing plan formulation, the strategic implications of different market groups around the world, and special insights on international marketing from a study of special cases.
Prerequisite: MKT450G

MKT545 Global Trade and Operations (3 units)
The course is designed to develop the knowledge and understanding of the global marketing environment and of the concepts, tools, and theory that will prepare the students to take the responsibility for successful global market penetration for his/her business organization. The perspective of the course is managerial, i.e., the ability to identify opportunity, resolve problems, and implement solutions and programs.
Prerequisite: MKT450G

Preparatory Module Courses for Business Graduate Students
(Non-credit)

PBUS01 Essentials of Management and Business Law (3 hr/wk)
This course is designed as an introductory-level course in management and U.S. business law. Students learn about and apply the most important aspects of current management theories and techniques, together with relevant related business law. Specifically, students learn about the U.S. legal system; the types of business organizations; the types of managers; and the organizational environment. Students explore, discuss, and debate business ethics. They learn and apply the basic rules of contracts, e-commerce, and intellectual property law. Human resources and operations management (including operational regulation and liabilities) are covered.
Prerequisite: ESL401

PBUS02 Essentials of Economics and Marketing (3 hr/wk)
This course provides the student a good understanding of the economic terms and concepts used in the analysis of macro-economic and market conditions as used in a business and marketing plan, the marketing terms and concepts used to analyze consumer and market behavior for creating marketing strategies, the basic marketing strategies described in marketing plans, and a good starting point for creating and developing marketing strategy and business operation ideas.
Prerequisite: ESL401

PBUS03 Essentials of Accounting and Finance (3 hr/wk)
The student is introduced to the world of finance and basic accounting principles in this course. Various topics will be covered such as the basic elements of financial accounting, recording and analyzing financial transactions, internal control and cash, accounting principles, the efforts of the corporation's managers to raise and allocate capital in a manner that will maximize and stabilize the firm's future cash flows. The student will also examine the concepts and techniques available to financial managers.
Prerequisite: ESL401

PBUS04 Essentials of Quantitative Analysis and Information Technology (3 hr/wk)
This MBA/DBA preparatory course is designed to provide the student with fundamental knowledge and training in the following two areas: (1) concepts and basic principles of various information technologies for businesses, and (2) concepts and applications of probability and statistics in business. Topics of this course include, but are not limited to, a perspective view on information technology; an overview of computer systems, the internet and World Wide Web; a review of database technology and its application in the business world; some basic programming techniques; a review of networking systems; an introduction to business information systems and related IT issues in the
information era; an overview of probability and statistics fundamentals such as random variables, distribution, means and variance, normal distribution, random sampling, and estimation in business usage. The student will receive assignments weekly to learn the covered subjects.

*Prerequisite: ESL401*

---

**Online Courses**

The following courses may be offered periodically with an online mode of instruction. Refer to the section on “Taking Online Courses” on page 16 for instructions for taking online courses.

**FIN501-ON Financial Management**  (3 units)
This course is designed to further introduce modern financial theories, tools, and methods used for the analysis of financial problems. The point of view of corporate financial managers will be taken to interact with efficient capital markets. Therefore, while making the best use of constrained resources is necessary, maximizing shareholders’ equity is also vitally important. The primary focus is on analysis and forecast of internal operations and the use of short-term and long-term capital.

*Prerequisite: FIN310 or PUBS03*

**GBM500-ON Green Business Management**  (3 units)
This course aims to provide the student an understanding of the mounting demand for business management practices to create not just financial value but to effectively respond as well to the environmental sustainability and social responsibility concerns of society. It will provide the student familiarity with the “best practices” of businesses in responding to this demand to create “sustainable value” and an understanding of the basic principles behind these practices. The course will also develop in the student an appreciation and a sense of commitment to practice “greener” business management practices in their future professional careers.

*Prerequisite: MGT310 or PUBS01*

**HRM531-ON Human Resources Management**  (3 units)
This course provides students and practicing managers with a comprehensive overview of essential personnel management concepts and techniques. The focus is on essential topics such as job analysis, candidate screening, interviewing, testing, hiring, evaluating, training, motivating, promoting, compensating and their associated legal constraints. Additional topics covered include global HR, diversity awareness and training, and sexual harassment legal requirements. Practical applications such as how to appraise performance and benefits and handle grievances are explored. Additionally, developing independent work teams that foster creativity and innovation will be discussed.

*Prerequisite: MGT310 or PUBS01*

**IT450G-ON Enterprise Information System Fundamentals**  (3 units)
This course provides a general introduction to information systems for electronic enterprise with emphasis on system functions, deployment planning, integration technologies, and administration basics. Topics include enterprise information system categories, Portals, ERP, CRM, application integration, industry standards, and system platforms. In addition, students will also receive an overview of enterprise IS applications such as CMS, ERP, CRM, KM, SCM, and related technologies including Java, XML, etc. Case studies and hands-on practice are required. SAP is introduced to the students.

*Prerequisite: IT310 or PUBS04*

**LAW570-ON Modern Law of Corporation**  (3 units)
This course teaches legal issues in the formation, operation, and dissolution of corporations, partnerships, and sole proprietorships; emphasis is on advantages and disadvantages of each in terms of taxation, finance, obligations to third parties, and operating problems.

*Prerequisite: LAW310 or PUBS01*

**MGT450G-ON Organizational Behavior and Management**  (3 units)
This course explores the complex dimension of organizational behavior including examination of experiential and conceptual approaches to communication, self-awareness, perception, motivation, problem solving and culture. Students apply interpersonal and intrapersonal exploration to management of change, leadership theories and organizational issues. Real case projects are required.

*Prerequisite: MGT310 or PUBS01*

**MGT460G-ON Production and Operations Management**  (3 units)
New technologies, competition from emerging industrialized nations outside North America, and the productivity and quality demands from the consumers continue to shape production and operations management. This course is designed as an introductory-level course in production and operations management. Emphases will be on planning, organizing, controlling, and a balance between the quantitative aspects and behavioral applications in production/operations management; operations strategy will be the guide for topical integration. The students will learn management process, resource conversion, and concepts, models, behavior, and behavioral applications within production/operations. Specific topics include operations management, operations strategies for competitive advantage, forecasting in operations, product and process design choices, facility and layout planning, scheduling, inventory control and quality control. The PP, MM, and QM modules of SAP R/3 may be used as demo software.

*Prerequisite: MGT310 or PUBS01*

**MGT501G-ON Project Management**  (3 units)
This is the first of a sequence of courses designed for graduate students who are interested in pursuing the project management concentration area of study. Principles of project and program management will be introduced, followed by the roles of project management, matrix organization in both private and public segments, and project management techniques leading to the efficient execution and completion of projects. Students also learn to identify and analyze project risks, plan for risk reduction or elimination, control of risk-related factors, and to manage projects under risk conditions. These techniques are useful in project proposal development, in project planning, and in project operational management. Methods for ongoing risk assessment and project performance evaluation are included. Proposal development, case studies, and independent projects are required.
Prerequisite: BUS501

MGT542-ON Technology and Product Management  (3 units)
This course is designed to give students a practical experience in product development, and focuses on the management of engineering and technology activities. Topics include technology product design, planning, production, marketing, sales, and maintenance; technological product life cycle from research and development through new product introduction, marketing requirement documentation (MRD), product positioning, channel inventory management, outbound communications, and the organizational role of the product marketing manager. Case studies and project presentations are required.

Prerequisite: BUS501

MKT541-ON Strategic Marketing  (3 units)
This course will teach the students fundamental concepts and practices in marketing research and marketing data analysis, and use of the data and financial analysis to set strategic positioning strategies. Emphasis will be on practical marketing research skills development and basic analysis mechanisms leading to strategic marketing. Students will learn both the primary source (such as surveys) as well as secondary sources (internet, publications, etc.) in research techniques. Students will also engage in their own marketing research projects. Although statistical analysis will be covered in the course, quantitative analysis skills will be the main focus. The course also covers an overview of quantitative and qualitative tools for strategic marketing, the market segmentation process, strategic positioning, and channel marketing issues. Case studies and marketing requirements reports are required.

Prerequisite: MKT450G

Doctorate Degree Program

The School of Business and Information Technology offers one professionally-oriented doctorate degree program: Doctor of Business Administration (DBA)

The doctorate degree program is designed for the students to attain specialized and practical competence in their field of studies and in the workplace. The DBA program is offered with the emphasis on practical and real-world applications in both the coursework and the doctoral dissertation requirements.

Objectives

The doctorate degree program in business administration emphasizes both mastery of subject matter as well as an understanding of related research and research methodology for professional-oriented projects/dissertations. The program aims to develop the student’s ability to integrate knowledge and apply practical research to address problems and issues in the workplace. It is designed for the student to accomplish specified goals and objectives and contribute to competence in the subject area or profession at an advanced level.

Doctoral Program Committee

The DBA program is governed by its Doctoral Program Committee. The committee is responsible for developing, modifying, and maintaining the doctorate degree program. Committee members include qualified NPU faculty and administrators as well as other qualified professionals or practitioners. The committee is knowledgeable in methods of research and in the subject matter, chaired by a credentialed individual with expertise in the program area. The doctoral students work with the committee members to pursue their doctoral studies.

The doctorate degree program also receives advice and guidance from its Advisory Board comprised of members from similar accredited doctoral programs and past or future employers of the graduates.

Applicant Qualifications

1. Earned master’s degree with a cumulative GPA of 3.0 or above from an institution accredited by an agency recognized by the U.S. Department of Education; a previous degree in a related field is preferred.

A DBA applicant without a previous master’s degree in a related field may be accepted based on the level of degree earned and years of work experience. Acceptable degree qualifications are: (a) a combination of a doctorate degree and at least two years of work experience, or (b) a combination of a master’s degree and at least three years of work experience.

2. Strong interest in advanced study in the chosen subject area,

3. Independent research ability,

4. English proficiency,

5. Previous work experience related to student’s field of study is preferred. Students with no or little experience in the work environment they will be prepared to enter will be required to conduct curricular practicum before graduation.

Application Material

1. A completed application form for the doctorate degree program (online application is available),
2. **Application fee**, 
3. **Official transcripts** from all colleges and universities attended and certified degree document(s). All official transcripts must be received before the admission evaluation. Applicants enrolled in courses at another institution at the time of application will have 60 days after the completion of the courses to provide the updated transcript. Any other transcripts submitted after the admission evaluation will not be accepted. Failure to observe this requirement will result in placement of the student in a non-degree status. 
4. **English Requirement**: 
   (a) International students (holding F1 status) should have English skills to effectively communicate with faculty, staff, and other students. A TOEFL score of 550 on paper-based test, or 213 on computer-based test, or 79 on internet-based test, or an IELTS score of 6.5 is required to enter a doctorate degree program. 
   (b) Non-international students (with non-F1 status) whose native language is English or who used English as the official language in their undergraduate studies are considered meeting the English entrance requirement. Others follow the same requirements as that for international students described in (a). Those who are in the U.S. at the time of application for admission have the option to take the on-campus English Placement exam (EPE) in place of TOEFL/IELTS before admission evaluation will be made for them. The EPE passing score for the doctoral program applicants is higher than that for the other applicants. 
5. **Entrance Exam**: Applicants to the Doctor of Business Administration degree program are required to take either the GMAT or the on-campus equivalent test before or on the New Student Orientation Day. For taking the GMAT administered by the ETS, **NPU’s Institution code for reporting the GMAT scores is 5485**. The score is primarily used for reference and analysis purposes, 
6. A professional work history or a professional vita. Applicants with prior work experience in his/her study field must also submit an employment certification letter issued by the previous employer to certify the following for the applicant: Company name and address, supervisor’s name and contact information, applicant’s previous job title, and a brief job description.
7. Applicants to the DBA program are encouraged to also submit their Statement of Purpose.
8. An international applicant is also required to submit the following additional documents: a financial support document – either the applicant’s bank statement or a certified affidavit of support (form I-134 or equivalent) from a financial sponsor indicating a minimum amount of $25,000 available for the applicant to pursue his/her study in the first academic year at NPU. A transfer student is required to submit (a) a photocopy of his/her previous I-20 form and request that the previous international student advisor complete the International Student Transfer Record form for NPU and conduct the required SEVIS transfer process, and (b) photocopies of the student’s passport, visa, and I-94 (admission & departure) document upon arrival at NPU.

- **Notification of Admission**

  Normally, prospective students may expect to receive notification of admission status within two weeks after filing complete application materials with the Admissions Office.

- **Cancellation of Admission**

  If an applicant is accepted into a doctorate degree program for a given semester and does not begin classes in that semester, admission will automatically be canceled. The prospective student’s application records (transcripts from previous colleges, financial support documents for international students, and standardized test scores) are kept on file for a period of six months from the semester start date. If the applicant then wishes to be considered for readmission in a later semester, he/she will be required to resubmit an application form and pay the application fee. A reevaluation of admission will be made for the applicant.

- **Transfer of Credit**

  If the applicant’s previous master’s degree is in the field of business administration, a maximum of 36 graduate units may be granted as transfer credits. If the previous master’s degree is in a different field, a maximum of eighteen (18) graduate semester units may be transferred towards the doctorate degree. Course credits to be transferred must be earned with a grade of B- or better.

  **Life/Work Experience**: No credit will be awarded for life or work experience.
Definition of a Trimester/Semester Unit:

One trimester/semester credit hour equals, at a minimum, 15 classroom hours of lecture, 30 hours of laboratory, and 45 hours of practicum.

Conversion Factor:

1 quarter unit = 0.66 trimester/semester unit

Admission Evaluation

The admission committee for the DBA degree program will conduct an admission evaluation for each applicant based on the official records received from the applicant. An evaluation report will be generated for the applicant; it includes an academic background evaluation and credit transfer information. A layout of the program requirements is also given in the report.

The background requirements for each doctoral degree program are specified in the section of “Background Preparation” near the beginning of the program description.

Tuition

Tuition for courses taken to fulfill the graduation requirements for the Doctor of Business Administration program is $450/unit.

Refer to the sections on “Tuition and Fees” and “Refund Policy” in this catalog for other fees and refund information.

Academic Information

Refer to the section on “Academic Information” in this catalog for the academic policies and regulations observed by all students.

Graduation Requirements

1. A minimum of 96 semester units beyond the bachelor’s degree are required to complete the study of a doctoral degree program, including 84 units of coursework plus a minimum of 12 units in doctoral dissertation or a comprehensive research project. Transferred graduate credits, up to 36 (or 18) semester units, are included in the total requirements.
2. Length of Study: The length of study in a doctoral degree program is at a minimum of three (3) years or nine (9) semesters and a maximum of seven (7) years. The normal length of study for a student with a master’s degree is 3-5 years. Request for an extension of the study period beyond 7 years due to special reasons requires approvals by both the Doctoral Program Committee and the School Dean.
3. The doctoral program curriculum is presented in a sequence of course categories in the order of the level of study involved, ending with the doctoral dissertation courses. Courses numbered in the 500’s and above are graduate courses. A number of courses numbered in the 400’s with a “G” suffix are scheduled among the required foundation courses and the students may earn graduate credit by taking these courses at NPU.

The doctoral student is advised to take the required courses following the specified sequence unless the student receives permission from the registration advisor.

The goal of the dissertation research is to apply technologies, knowledge, or concepts in a new way to a workplace problem.
4. All courses require appropriate usage of research and learning resources.
5. Checkpoint:
   Upon completing 54-63 units towards the graduation requirements, including the foundation requirements, the Research Methodology courses as well as part of the core courses, the student is required to form a Dissertation Committee (DC), submit a Preliminary Proposal, and give an oral presentation to his/her DC. The proposal requirements are specified in the DBA Student Handbook. The student’s proposal and presentation will be evaluated by his/her DC. Students unable to make a satisfactory proposal presentation will be given a second and last chance to repeat the process. Failure the second time will prohibit the student from continuing his/her study in the DBA program.
6. Each doctoral student’s dissertation or comprehensive research project must be reviewed, evaluated, and assessed by the Dissertation Committee (DC) approved by designated members of the the DBA Doctoral Program Committee; the DC must include at least one individual who is either from another appropriately accredited institution within the subject area or a professional who has earned a terminal degree. A dissertation advisor closely monitors the student’s dissertation work. The student receives either an “S” or letter grade for satisfactory performance and earns the credits or an “NP” grade for unsatisfactory performance without earning credit in each semester the
The doctoral student is required to maintain a minimum of 3.0 CGPA every semester during the entire tenure of study. In addition, a grade of “B” or better is required in all courses. A doctoral student on academic probation status is given one semester to regain the required CGPA. Failure to do so will result in a dismissal of the student from the doctorate degree program.

8. Students enrolled in the doctoral dissertation or project courses must follow the requirements specified in the Doctoral Student Handbook for the program that the students are pursuing. A student unable to complete the dissertation or project after earning 12 units in the dissertation/project course is required to continue to enroll in the 6-unit doctoral dissertation course part-II as a continuing student and pay at the regular unit tuition rate until completion of the dissertation/project. Extra credits earned for repeatedly taking the dissertation/project cannot substitute other course requirements.

9. Students with no or limited experience in the work environment they are prepared to enter are required to engage in curricular practicum before graduation. A student may earn a maximum of 6 credit units through practicum.

10. An approved petition for graduation must be on file.

11. The student must maintain good standing with the University.

Doctor of Business Administration (D.B.A.)

**Program Administrator:** Dr. James Wu, *D.B.A.*

**Objectives:** The DBA degree program is intended to develop the student’s ability in advanced academic study, practical research, and professional expertise in business administration. The program aims to cultivate leadership in modern global and green business development and management. Research emphases are in the fields of global economy, finance, business decision making, green business policy and strategy, as well as broad digital business intelligence and e-business applications.

**Background Preparation**

Students admitted into the DBA degree program are required to have proper business background preparation for taking the graduate level coursework. The student must clear all deficiencies before taking the degree required courses. A student with deficiency in any required background subject is required to clear it by taking and passing the appropriate preparatory module course. With advance approval by the academic review committee, the student
may be allowed to take a proficiency exam to clear any deficiency subject. The student must also follow the English requirement described in the chapter on Admission Policies.

The following are the four business preparatory modules covering all the required background subjects:

- Preparatory Module A (PBUS01): Essentials of Management and Business Law
- Preparatory Module B (PBUS02): Essentials of Economics and Marketing
- Preparatory Module C (PBUS03): Essentials of Accounting and Finance
- Preparatory Module D (PBUS04): Essentials of Quantitative Analysis and Information Technology

**D.B.A. Curriculum**

A minimum of 96 semester units of graduate study beyond the bachelor’s degree are required for the DBA program. Among them, 84 units are required to be graduate coursework and a minimum of 12 units are in doctoral dissertation or comprehensive research project work. Courses at the 4xxG level must be taken at NPU in order to earn graduate credits. The student must meet prerequisite requirements when taking any of the following courses.

**I. Foundation Requirements** (First two years of study - 36 units)

*(Foundation in enterprise management and information systems, quantitative analysis)*

Courses listed in this section should be completed by the student in the first 1-2 years of study in the program.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT450G</td>
<td>Enterprise Information System Fundamentals</td>
<td>(3)</td>
</tr>
<tr>
<td>MGT450G</td>
<td>Organizational Behavior and Management</td>
<td>(3)</td>
</tr>
<tr>
<td>MGT460G</td>
<td>Production and Operations Management</td>
<td>(3)</td>
</tr>
<tr>
<td>MGT480G</td>
<td>Entrepreneurship</td>
<td>(3)</td>
</tr>
<tr>
<td>MKT450G</td>
<td>Marketing Management</td>
<td>(3)</td>
</tr>
<tr>
<td>BUS501</td>
<td>Quantitative Methods for Business</td>
<td>(3)</td>
</tr>
<tr>
<td>FIN501</td>
<td>Financial Management</td>
<td>(3)</td>
</tr>
<tr>
<td>GBM500</td>
<td>Green Business Management</td>
<td>(3)</td>
</tr>
<tr>
<td>HRM531</td>
<td>Human Resource Management</td>
<td>(3)</td>
</tr>
<tr>
<td>MGT530</td>
<td>Logistics and Operations Management</td>
<td>(3)</td>
</tr>
<tr>
<td>MGT540</td>
<td>Management of Innovation</td>
<td>(3)</td>
</tr>
<tr>
<td>MGT542</td>
<td>Technology and Product Management</td>
<td>(3)</td>
</tr>
</tbody>
</table>

**II. Core Requirements** (Second to third years of study - 24 units)

Following the foundation coursework, the student must take advanced level graduate courses, a series of two research methodology courses, as well as courses to prepare breadth of study for further mastery of the subjects of interest and in-depth understanding of related research. Courses described in this section, especially the Research Methodology courses, should be taken by the student immediately following the required foundation courses described in section I.

The student must also submit and present his/her Preliminary Proposal to his/her Dissertation Committee and receive the committee’s approval to proceed in the DBA program.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>DBA601</td>
<td>Research Methodology - I</td>
<td>(3)</td>
</tr>
<tr>
<td>DBA602</td>
<td>Research Methodology - II</td>
<td>(3)</td>
</tr>
<tr>
<td>FIN568</td>
<td>Corporate Finance</td>
<td>(3)</td>
</tr>
<tr>
<td>GBM505</td>
<td>Green Economics and Policy</td>
<td>(3)</td>
</tr>
<tr>
<td>IT560</td>
<td>Enterprise Resource Planning (ERP)</td>
<td>(3)</td>
</tr>
<tr>
<td>LAW570</td>
<td>Modern Law of Corporations</td>
<td>(3)</td>
</tr>
<tr>
<td>MGT501</td>
<td>Project Management</td>
<td>(3)</td>
</tr>
<tr>
<td>MKT541</td>
<td>Strategic Marketing</td>
<td>(3)</td>
</tr>
</tbody>
</table>

112
III. Electives (Third to fourth years of study - 24 units)

The student may take any advanced graduate courses to meet the elective requirements. However, doctoral candidates are encouraged to take concentrated coursework to address their career development plan or research interests. With the assistance and approval by an adviser, the student takes a minimum of 24 units of coursework at the 500 level or above to fulfill this requirement.

Practicum: When applicable, the student may take curricular practicum courses and engage in practical training to work on company projects which are directly related to the student’s dissertation research or course of study. The student must observe the rules required for taking the practicum courses. Students without prior practical experience in related fields are required to engage in curricular practicum.

IV. Doctoral Dissertation (Fourth to fifth years of study - 12 units)

A Dissertation Committee (DC) must be formed and approved by the DBA Program Committee before the student starts his/her doctoral research. The doctoral candidate is required to earn a minimum of 12 units in the work towards completion of doctoral dissertation to meet the graduation requirement. Dissertation proposal presentation and dissertation defense requirements are described in the DBA Student Handbook.

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Description</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>DBA698</td>
<td>Dissertation – I</td>
<td>(6)</td>
</tr>
<tr>
<td>DBA699</td>
<td>Dissertation – II</td>
<td>(6)</td>
</tr>
</tbody>
</table>

Course Descriptions
Doctor of Business Administration Program
School of Business Administration and Information Technology

Doctor’s degree courses are numbered in the 500s and 600s. The DBA program curriculum allows for a limited number of credits for 400 level courses with a “G” suffix in its foundation requirements.

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>450G-490G</td>
<td>Mezzanine courses for graduates</td>
</tr>
<tr>
<td>500-699</td>
<td>Graduate level courses</td>
</tr>
</tbody>
</table>
For information on prerequisite subjects numbered below 450, refer to the section on Course Descriptions for the Bachelor’s Degree Program, School of Business and Information Technology.

Courses are listed by subject: Business (general courses), Curricular Practicum, exclusive DBA courses, Finance, Green Business Management, Human Resource Management, Information Technology, Law, Management, Marketing. The course lists are followed by a list of preparatory module courses for business graduate programs and a list of online courses.

Each course description is followed by its prerequisite information expressed in course numbers.

Each 1 unit of a practicum course requires at least 45 hours of practical experience related to the student’s program curriculum.

---

**Business (general courses)**

**BUS501 Quantitative Methods for Business (3 units)**

This course is designed to introduce students to contemporary business decision-making methodologies and develop the students’ ability to analyze complex systems. Quantitative methods of management science and operations research using quantitative analysis are the focus of this course. The students learn to evaluate models from real-world examples as well as techniques to analyze and solve the problems. Students also learn to use quantitative analysis software, critically evaluate the results, and perform sensitivity analysis.

*Prerequisite:* MATH208 or PBUS04

**BUS589 Special Topics (3 units)**

Special topics courses are offered to graduate students in business administration programs by current faculty members or invited guest speakers to expose the students to special topics related to their studies. These courses are conducted the same way as regular courses.

*Prerequisite:* BUS501

---

**Curricular Practicum**

**CPT501 Curricular Practicum (1 unit)**

Curricular practicum, or curricular practical training, is a supervised practical experience that is the application of previously studied theory. It is defined as alternative work/study, internship, cooperative education, or any other type of required internship or practicum that is offered by sponsoring employers through cooperative agreements with the school and the course is an integral part of an established curriculum. At least three hours of work in a practical setting has the credit equivalency of one hour of classroom lecture (1 unit). To be eligible to take this course, the student must have completed at least two semesters of coursework required in his/her degree program, obtained a written agreement that outlines the arrangement between the institution and the practicum site (including specific learning objectives, course requirements, and evaluation criteria), and received approval by a designated advisor. International students must follow additional rules required by the U.S. Immigration and Customs Enforcement. The student must use NPU’s online tool to submit his/her application for taking this course before meeting with a designated advisor for an assessment of eligibility. Information and instructions concerning this course are provided in the application form. This is a part-time practicum course taken by the graduate student to work no more than twenty hours each week during the approved practicum period. Failure in this course will prevent the student from taking any curricular practicum course afterwards.

*Prerequisite:* Refer to the instructions on the application and agreement documents.

**CPT502 Curricular Practicum (2 units)**

Curricular practicum, or curricular practical training, is a supervised practical experience that is the application of previously studied theory. It is defined as alternative work/study, internship, cooperative education, or any other type of required internship or practicum that is offered by sponsoring employers through cooperative agreements with the school and the course is an integral part of an established curriculum. At least three hours of work in a practical setting has the credit equivalency of one hour of classroom lecture (1 unit). To be eligible to take this course, the student must have completed at least two semesters of coursework required in his/her degree program, obtained a written agreement that outlines the arrangement between the institution and the practicum site (including specific learning objectives, course requirements, and evaluation criteria), and received approval by a designated advisor. International students must follow additional rules required by the U.S. Immigration and Customs Enforcement. The student must use NPU’s online tool to submit his/her application for taking this course before meeting with a designated advisor for an assessment of eligibility. Information and instructions concerning this course are provided in the application form. This is a full-time practicum course taken by the graduate student to work more than twenty hours each week during the approved practicum period. Failure in this course will prevent the student from taking any curricular practicum course afterwards.

*Prerequisite:* Refer to the instructions on the application and agreement documents.
**DBA**

**DBA601 Research Methodology - I (3 units)**
This course focuses on how to conduct research as well as how to prepare a research plan or proposal for a scholarly journal article, dissertation, or thesis. The course will be conducted through formal lectures, seminars given by invited speakers, and the student’s engagement in practical research work. The student will be required to complete an applied research project.
*Prerequisite: BUS501*

**DBA602 Research Methodology - II (3 units)**
This course focuses on research methods, particularly using advanced statistical analysis methods to prepare research papers for publication as scholarly journal articles or submission as dissertations or theses. The students may be required to submit their research papers for publication in various journals. The course will introduce various statistical analysis methods for testing hypotheses. The course will be conducted with various forms, including formal lectures, seminars given by invited speakers, and each student’s engagement in practical research work. The student will be required to complete an applied research project.
*Prerequisite: DBA601*

**DBA689 Advanced Topics (3 units)**
Advanced topics courses are offered to the doctorate program students in the DBA program by current faculty members or invited guest speakers to expose the students to new subjects related to their studies. These courses are conducted the same way as regular courses.
*Prerequisite: DBA601*

**DBA698 Dissertation - I (6 units)**
This is the first of a two-part dissertation course series required for each doctorate student. The research and dissertation work are designed for the student to demonstrate his/her ability of independent research as well as integrating and applying original and practical research in the subject matter. The student should also demonstrate his/her clear understanding of related research and research methodology for professional-oriented projects/thesis. The Doctor of Business Administration student enrolls in this course after completing almost all other required coursework. A dissertation committee (DC) for monitoring the dissertation must be formed and approved by the Doctoral Program Committee before the student begins his/her dissertation work. The student works with his/her dissertation advisor throughout the project. Effort must involve practical research which provides a first exposure to some fundamental issues in the domain of knowledge relevant to the student’s study fields.
*Prerequisite: DBA602*

**DBA699 Dissertation – II (6 units)**
This is the second of the two-part dissertation course series required for each doctorate student. The doctorate student who has completed the first part of this course must enroll in this second course to continue his/her dissertation work until completion. Upon completing the project, the student must submit his/her dissertation for a review by the DC; the student should also give an open forum dissertation defense to the DC members and other invited faculty members and outside guests. The student must receive the DC’s final approval for completing the dissertation course series. If the student fails to complete the dissertation by the end of the semester in which this course was registered, the student must retake this course.
*Prerequisite: DBA698*

**Finance**

**FIN501 Financial Management (3 units)**
This course is designed to further introduce modern financial theories, tools, and methods used for the analysis of financial problems. The point of view of corporate financial managers will be taken to interact with efficient capital markets. Therefore, while making the best use of constrained resources is necessary, maximizing shareholders’ equity is also vitally important. The primary focus is on analysis and forecast of internal operations and the use of short-term and long-term capital.
*Prerequisite: FIN310 or PBUS03*

**FIN510 Investments (3 units)**
This course covers the foundations of investment management. Topics include theory and empirical evidence related to portfolio theory, market efficiency, asset pricing models, factor models, and option pricing theory. Students are expected to combine market research results and electronic information sources to create optimal investment strategies.
*Prerequisite: FIN501*

**FIN512 Financial Risk Management (3 units)**
This course is designed to further introduce modern financial theories, tools, and methods in dealing with financial risks. Financial risk management has become an extremely important discipline for corporations, financial institutions, and many government enterprises, particularly in challenging economical times.
*Prerequisite: FIN501*

**FIN522 International Trade and Investment (3 units)**
This course covers the theories of international trade, through comparative advantage and related corporate strategies, the impacts of emerging regional economic blocks, the institutions of the multilateral trading system, and trade barriers.
Students will learn the mechanics of international payment, shipping, and distribution.

Prerequisite: FIN501

FIN568 Corporate Finance (3 units)
This course belongs to the accounting/finance concentration area of study. The first part of the course covers essential corporate finance subjects including executive compensation, corporate governance, and bankruptcy law. Lectures, discussions, and case studies will be the form used for this part of study. The second part of the course consists of discussions of corporate financing such as mergers, acquisitions, valuations; corporate restructuring, LBOs’, MBOs’, and merchant banking.

Prerequisite: FIN501

FIN580 Portfolio Management (3 units)
This course teaches advanced portfolio decision making. Topics include index models, portfolio performance measures, bond portfolio management and interest immunization, stock market anomalies and market efficiency.

Prerequisite: FIN501

FIN585 International Finance (3 units)
This course prepares the students for a career in international finance. The course discusses the financial environment in which the multinational firm and its managers must function. The course focuses on foreign exchange management and financial management in a multinational firm. It points out to the students the basic principles of profit-seeking and risk avoidance practices in the volatile global financial markets.

Prerequisite: FIN501

Green Business Management

GBM500 Green Business Management (3 units)
This course aims to provide the student an understanding of the mounting demand for business management practices to create not just financial value but to effectively respond as well to the environmental sustainability and social responsibility concerns of society. It will provide the student familiarity of the “best practices” of businesses in responding to this demand to create “sustainable value” and an understanding of the basic principles behind these practices. The course will also develop in the student an appreciation and a sense of commitment to practice “greener” business management practices in their future professional careers.

Prerequisite: MGT310 or PBUS01

GBM505 Green Economics and Policy (3 units)
Green economics represents a transdisciplinary attempt to integrate the social sciences (primarily economics) with the natural sciences (primarily ecology). This course is designed to re-orient the resource allocation decisions of managers in a way that the decision outcome criterion is not simply economic efficiency but sustainability. More specifically, the course seeks to teach students the principles of resource allocation that achieve economic, ecological and social sustainability. While economic efficiency is still a paramount decision objective, it should be pursued after measures are taken to guarantee that human activities do not threaten the viability of life on our planet and that all people can secure and produce the means for leading healthy lives (guarantee of basic human rights). The sustainability problems of unregulated markets are also examined.

Prerequisite: GBM500

GBM510 Green Business Marketing (3 units)
In this emerging green era, green business marketing faces unique challenges. On the one hand, it involves dealing with a major trend without formulated requirements; on the other hand, it faces a rapidly growing number of conscious green consumers demanding green business practices. As a result, new marketing strategies, vehicles, and tools are needed by businesses. In this course the students learn to develop marketing plans and business practices that seek a balance among economy and environment, as well as social responsibilities. Case studies and group projects will be conducted as part of the coursework requirements.

Prerequisite: GBM500

GBM520 Green Technologies: Their Operations and Financial Analysis (3 units)
This course is designed to acquaint students with the green technologies that hold the most promise for solving the unsustainability problems of current business practices (non-renewable resource usages and polluting activities). It will teach the student to evaluate these technologies as to their technical feasibility (will it work) as well as their financial viability (will it pay). After taking the course, the student should be confident in identifying green technology solutions to business problems and evaluating them.

Prerequisite: GBM500

GBM530 Environmental Management Systems and Regulatory Compliance (3 units)
Business managers may sometimes not be aware of the considerable risk exposure they and their firms face of running afoul of environmental laws and regulations. The course acquaints students with the common environmental laws and regulations that municipalities, states and national governments enforce. It also teaches them how businesses establish an environmental management system function to ensure compliance with all environmental laws and regulations to minimize this risk and be pro-active in meeting the firm’s environmental and social sustainability responsibilities.

Prerequisite: GBM500
Human Resource Management

HRM531 Human Resource Management (3 units)
This course provides students and practicing managers with a comprehensive overview of essential personnel management concepts and techniques. The focus is on essential topics such as job analysis, candidate screening, interviewing, testing, hiring, evaluating, training, motivating, promoting, compensating and their associated legal constraints. Additional topics covered include global HR, diversity awareness and training, and sexual harassment legal requirements. Practical applications such as how to appraise performance and benefits and handle grievances are explored. Additionally, developing independent work teams that foster creativity and innovation will be discussed.
Prerequisite: MGT310 or PBUS01

HRM603 Strategic Workforce Planning (3 units)
This course begins with the discussion of the need for manpower planning and gives samples of plans developed for various types of organizations such as manufacturing, high-tech, small business, etc. This course would give students an opportunity to learn about and develop a manpower plan which is part of the business plan and also an ongoing dynamic document developed as a part of the strategic planning component of the organization. It also has to do with scheduling, rosters and succession planning which is a process of identifying a long-term plan for the orderly replacement of key employees. The course also explores cases of developing a manpower plan including developing a Gap Analysis to determine manpower needs and budgeting for the manpower needs. Developing new HR manpower configurations such as self-managed teams, telecommuting, outsourcing, temps-to-hire and other methods to make companies more flexible and offer economical solutions to the high cost of knowledge workers. The course includes case studies and actual writing of several manpower plans for various sizes of organizations.
Prerequisite: HRM531

Information Technology

IT450G Enterprise Information System Fundamentals (3 units)
This course provides a general introduction to information systems for electronic enterprise with emphasis on system functions, deployment planning, integration technologies, and administration basics. Topics include enterprise information system categories, Portals, ERP, CRM, application integration, industry standards, and system platforms. In addition, students will also receive an overview of enterprise IS applications such as CMS, ERP, CRM, KM, SCM, and related technologies including Java, XML, etc. Case studies and hands-on practice are required. SAP is introduced to the students.
Prerequisite: IT310 or PBUS04

IT510 Advanced e-Business Programming (3 units) and Design
This course is designed for the students to learn details of Perl and CGI programming and applications. Topics include client/server concept, Perl programming, mechanism of CGI, Apache web server, and creating CGI applications with Perl, HTML, JavaScript, and database. Hands-on exercises throughout the course are required.
Prerequisite: IT453G

IT515 Emergent Information Technologies for Business (3 units)
This course is a study of the emergent information technology that will impact future business practices and the business decision making processes. The most recent technology developments and trends will be covered. The course will be conducted through formal lectures, seminars given by invited speakers, as well as the students' own research findings and reporting.
Prerequisite: IT450G

IT553 Business Intelligence and CRM (3 units)
A major challenge to a business in the information age is to turn mountains of data into useful information that can help business managers analyze sales trend, customer behavior, and other key performance metrics to make the best decisions. This course introduces students to the effective methodology and a wide range of techniques used to generate business intelligence (BI) and applications to customer relationship management (CRM). Topics include: data warehouse and data mart, extraction, transformation, and loading (ETL) process, Ad hoc query and reporting, data mining, and CRM systems. The students will explore new software and tools provided by companies such as Oracle, Teradata, SAS, and Business Objects, and gain hands-on experience in BI and CRM applications. Real case studies in this course will also help the students gain business insight. Taking this course should sharpen the students’ abilities to advance their professional career with this IT trend. The students will explore SAP R3 software and gain hands-on experience in BI and CRM applications.
Prerequisite: IT450G

IT560 Enterprise Resource Planning (3 units) (ERP)
This course teaches the students to use SAP software for enterprise resource planning. Students will learn the mySAP technology and how it applies new web computing and e-business philosophy to help the different market segments solve their business issues and processes. The following will be discussed: cross-industry solution- CRM, e-procurement and business intelligence; Internet Transaction server, mySAP workplace,
marketplace, security within mySAP environment, web application server, mySAP.com projects implementation, solution in different industries, and SAP future and challenge. Case studies will also assist the students' learning in this course.

Prerequisite: IT450G

IT589 Special Topics on Information Technology (3 units)
Special topics courses are offered to graduate students in the MBA program by current faculty members or invited guest speakers to expose the students to emerging information technologies. These courses are conducted the same way as regular courses.

Prerequisite: IT450G

Law

LAW570 Modern Law of Corporation (3 units)
This course teaches legal issues in the formation, operation, and dissolution of corporations, partnerships, and sole proprietorships; emphasis is on the advantages and disadvantages of each in terms of taxation, finance, obligations to third parties, and operating problems.

Prerequisite: LAW310 or PBUS01

Management

MGT450G Organizational Behavior and Management (3 units)
This course explores the complex dimension of organizational behavior including examination of experiential and conceptual approaches to communication, self-awareness, perception, motivation, problem solving and culture. Students apply interpersonal and intrapersonal exploration to the management of change, leadership theories and organizational issues. Real case projects are required.

Prerequisite: MGT310 or PBUS01

MGT460G Production and Operations Management (3 units)
New technologies, competition from emerging industrialized nations outside North America, and the productivity and quality demands from the consumers continue to shape production and operations management. This course is designed as an introductory-level course in production and operations management. Emphases will be on planning, organizing, controlling, and a balance between the quantitative aspects and behavioral applications in production/operations management; operations strategy will be the guide for topical integration. The students will learn management process, resource conversion, and concepts, models, behavior, and behavioral applications within production/operations. Specific topics include operations management, operations strategies for competitive advantage, forecasting in operations, product and process design choices, facility and layout planning, scheduling, inventory control and quality control. The PP, MM, and QM modules of SAP R/3 may be used as demo software.

Prerequisite: MGT310 or PBUS01

MGT480G Entrepreneurship (3 units)
This course explores the full range of the entrepreneurial process including the evaluation, development, and creation of a successful business. It will help the potential entrepreneurs and professionals visualize and experience entrepreneurial development. The course explores the entrepreneurial approach to resources such as the development of an organizational structure, market analysis, financing entrepreneurial ventures, and screening venture opportunities. Individuals will experiment and evaluate what it takes to be an entrepreneur including developing the plan for a new business.

Prerequisite: MGT310 or PBUS01

MGT501 Project Management (3 units)
This course introduces the principles of project and program management, the roles of project management, matrix organization in both private and public segments, and project management techniques leading to the efficient execution and completion of projects. Proposal development, case studies, and independent projects are required.

Prerequisite: BUS501

MGT530 Logistics and Operations Management (3 units)
This course is designed to prepare students with the ability in logistics and operations management. Topics include how managers plan and control operations to achieve optimum productivity, top quality, and customer satisfaction, qualitative and quantitative methods of managing production and operations, methods of total quality management (TQM) and continuous improvement in the service industries and in production operations. Students will also learn to plan for and operate under changing technologies in international operations and in integrated operations. The instructor may demonstrate SAP R/3 operations module.

Prerequisite: MGT310 or PBUS01

MGT538 International Business Management (3 units)
This class reviews the classic five functions of management: planning, organizing, staffing, leading, and controlling. Students will compare managerial practices of Europe, Asia, and Latin America. The class also covers the importance of quality and continuous improvement for gaining a competitive edge. Students will learn practical aspects of management from actual case studies, the strategic considerations for management in the
international environment, and the roles of the latest information technologies, including computer networks, telecommuting, decision support systems, and CAD, CAM, CAE.

Prerequisite: MKT450G

MGT540 Management of Innovation (3 units)
This course is designed to equip the students with the knowledge and management skills to address the needs of new and innovative enterprises in a changing and uncertain environment. Topics include technology forecasting and assessment, program or product selection and control, market development, financial management, and regulations and ethics.
Prerequisite: BUS501

MGT542 Technology and Product Management (3 units)
This course is designed to give students a practical experience in product development, and focuses on the management of engineering and technology activities. Topics include technology product design, planning, production, marketing, sales, and maintenance; technological product life cycle from research and development through new product introduction, marketing requirement documentation (MRD), product positioning, channel inventory management, outbound communications, and the organizational role of the product marketing manager. Case studies and project presentations are required.
Prerequisite: BUS501

MKT545 Global Trade and Operations (3 units)
This course considers how the culture and environment of different countries affect marketing strategy, how to perform a comprehensive analysis of a country to support marketing plan formulation, the strategic implications of different market groups around the world, and special insights on international marketing from a study of special cases.
Prerequisite: MKT450G

MKT542 Global Marketing (3 units)
This course studies marketing management by analyzing real-world cases. Students will learn to implement and execute the marketing process through situation assessment, strategy formulation, marketing planning, marketing implementation and evaluation.
Prerequisite: MKT310 or PBUS02

Marketing

MKT450G Marketing Management (3 units)
This course studies marketing management by analyzing real-world cases. Students will learn to implement and execute the marketing process through situation assessment, strategy formulation, marketing planning, marketing implementation and evaluation.
Prerequisite: MKT310 or PBUS02

MKT541 Strategic Marketing (3 units)
This course will teach the students fundamental concepts and practices in marketing research and marketing data analysis, and use of the data and financial analysis to set strategic positioning strategies. Emphasis will be on practical marketing research skills development and basic analysis mechanisms leading to strategic marketing. Students will learn both the primary source (such as surveys) as well as secondary sources (internet, publications, etc.) in research techniques. Students will also engage in their own marketing research projects. Although statistical analysis will be covered in the course, quantitative analysis skills will be the main focus. The course also covers an overview of quantitative and qualitative tools for strategic marketing, market segmentation process, strategic positioning, and channel marketing issues. Case studies and marketing requirements reports are required.
Prerequisite: MKT450G

MKT545 Global Trade and Operations (3 units)
The course is designed to develop the knowledge and understanding of the global marketing environment and of the concepts, tools, and theory that will prepare the students to take the responsibility for successful global market penetration for his/her business organization. The perspective of the course is managerial, i.e., the ability to identify opportunity, resolve problems, and implement solutions and programs.
Prerequisite: MKT450G

Preparatory Module Courses for Business Graduate Students
(Non-credit)

PBUS01 Essentials of Management and Business Law (3 hr/wk)
This course is designed as an introductory-level course in management and U.S. business law. Students learn about and apply the most important aspects of current management theories and techniques, together with relevant related business law. Specifically, students learn about the U.S. legal system; the types of business organizations; the types of managers; and the organizational environment. Students explore, discuss, and debate business ethics. They learn and apply the basic rules of contracts, e-commerce, and intellectual
property law. Human resources and operations management (including operational regulation and liabilities) are covered.

**Prerequisite:** ESL401

**PBUS02 Essentials of Economics and Marketing (3 hr/wk)**

This course provides the student a good understanding of the economic terms and concepts used in the analysis of macro-economic and market conditions as used in a business and marketing plan, the marketing terms and concepts used to analyze consumer and market behavior for creating marketing strategies, the basic marketing strategies described in marketing plans, and a good starting point for creating and developing marketing strategy and business operation ideas.

**Prerequisite:** ESL401

**PBUS03 Essentials of Accounting and Finance (3 hr/wk)**

The student is introduced to the world of finance and basic accounting principles in this course. Various topics will be covered such as the basic elements of financial accounting, recording and analyzing financial transactions, internal control and cash, accounting principles, the efforts of the corporation's managers to raise and allocate capital in a manner that will maximize and stabilize the firm's future cash flows. The student will also examine the concepts and techniques available to financial managers.

**Prerequisite:** ESL401

**PBUS04 Essentials of Quantitative Analysis and Information Technology (3 hr/wk)**

This MBA/DBA preparatory course is designed to provide the student with fundamental knowledge and training in the following two areas: (1) concepts and basic principles of various information technologies for businesses, and (2) concepts and applications of probability and statistics in business. Topics of this course include, but are not limited to, a perspective view on information technology; an overview of computer systems, the internet and World Wide Web; a review of database technology and its application in the business world; some basic programming techniques; a review of networking systems; an introduction to business information systems and related IT issues in the information era; an overview of probability and statistics fundamentals such as random variables, distribution, means and variance, normal distribution, random sampling, and estimation in business usage. The student will receive assignments weekly to learn the covered subjects.

**Prerequisite:** ESL401

---

**Online Courses**

The following courses may be offered periodically with an online mode of instruction. Refer to the section on “Taking Online Courses” on page 16 for instructions for taking online courses.

**FIN501-ON Financial Management (3 units)**

This course is designed to further introduce modern financial theories, tools, and methods used for the analysis of financial problems. The point of view of corporate financial managers will be taken to interact with efficient capital markets. Therefore, while making the best use of constrained resources is necessary, maximizing shareholders' equity is also vitally important. The primary focus is on analysis and forecast of internal operations and the use of short-term and long-term capital.

**Prerequisite:** FIN310 or PBUS03

**GBM500-ON Green Business Management (3 units)**

This course aims to provide the student an understanding of the mounting demand for business management practices to create not just financial value but to effectively respond as well to the environmental sustainability and social responsibility concerns of society. It will provide the student familiarity with the “best practices” of businesses in responding to this demand to create “sustainable value” and an understanding of the basic principles behind these practices. The course will also develop in the student an appreciation and a sense of commitment to practice “greener” business management practices in their future professional careers.

**Prerequisite:** MGT310 or PBUS01

**HRM531-ON Human Resources Management (3 units)**

This course provides students and practicing managers with a comprehensive overview of essential personnel management concepts and techniques. The focus is on essential topics such as job analysis, candidate screening, interviewing, testing, hiring, evaluating, training, motivating, promoting, compensating and their associated legal constraints. Additional topics covered include global HR, diversity awareness and training, and sexual harassment legal requirements. Practical applications such as how to appraise performance and benefits and handle grievances are explored. Additionally, developing independent work teams that foster creativity and innovation will be discussed.

**Prerequisite:** MGT310 or PBUS01

**IT450G-ON Enterprise Information System Fundamentals (3 units)**

This course provides a general introduction to information systems for electronic enterprise with emphasis on system functions, deployment planning, integration technologies, and administration basics. Topics include enterprise information system categories, Portals, ERP, CRM, application integration, industry standards, and system platforms. In addition, students will also receive an overview of enterprise IS applications such as CMS, ERP, CRM, KM, SCM, and related technologies including Java, XML, etc. Case studies and hands-on practice are required. SAP is introduced to the students.
Prerequisite: IT310 or PBUS04

LAW570-ON Modern Law of Corporation (3 units)
This course teaches legal issues in the formation, operation, and dissolution of corporations, partnerships, and sole proprietorships; emphasis is on advantages and disadvantages of each in terms of taxation, finance, obligations to third parties, and operating problems. Prerequisite: LAW310 or PBUS01

MGT450G-ON Organizational Behavior and Management (3 units)
This course explores the complex dimension of organizational behavior including examination of experiential and conceptual approaches to communication, self-awareness, perception, motivation, problem solving and culture. Students apply interpersonal and intrapersonal exploration to management of change, leadership theories and organizational issues. Real case projects are required. Prerequisite: MGT310 or PBUS01

MGT460G-ON Production and Operations Management (3 units)
New technologies, competition from emerging industrialized nations outside North America, and the productivity and quality demands from the consumers continue to shape production and operations management. This course is designed as an introductory-level course in production and operations management. Emphasis will be on planning, organizing, controlling, and a balance between the quantitative aspects and behavioral applications in production/operations management; operations strategy will be the guide for topical integration. The students will learn management process, resource conversion, and concepts, models, behavior, and behavioral applications within production/operations. Specific topics include operations management, operations strategies for competitive advantage, forecasting in operations, product and process design choices, facility and layout planning, scheduling, inventory control and quality control. The PP, MM, and QM modules of SAP R/3 may be used as demo software. Prerequisite: MGT310 or PBUS01

MGT501-ON Project Management (3 units)
This is the first of a sequence of courses designed for graduate students who are interested in pursuing the project management concentration area of study. Principles of project and program management will be introduced, followed by the roles of project management, matrix organization in both private and public segments, and project management techniques leading to the efficient execution and completion of projects. Students also learn to identify and analyze project risks, plan for risk reduction or elimination, control of risk-related factors, and to manage projects under risk conditions. These techniques are useful in project proposal development, in project planning, and in project operational management. Methods for ongoing risk assessment and project performance evaluation are included. Proposal development, case studies, and independent projects are required. Prerequisite: BUS501

MGT542-ON Technology and Product Management (3 units)
This course is designed to give students a practical experience in product development, and focuses on the management of engineering and technology activities. Topics include technology product design, planning, production, marketing, sales, and maintenance; technological product life cycle from research and development through new product introduction; marketing requirement documentation (MRD), product positioning, channel inventory management, outbound communications, and the organizational role of the product marketing manager. Case studies and project presentations are required. Prerequisite: BUS501

MKT541-ON Strategic Marketing (3 units)
This course will teach the students fundamental concepts and practices in marketing research and marketing data analysis, and use of the data and financial analysis to set strategic positioning strategies. Emphasis will be on practical marketing research skills development and basic analysis mechanisms leading to strategic marketing. Students will learn both the primary source (such as surveys) as well as secondary sources (internet, publications, etc.) in research techniques. Students will also engage in their own marketing research projects. Although statistical analysis will be covered in the course, quantitative analysis skills will be the main focus. The course also covers an overview of quantitative and qualitative tools for strategic marketing, the market segmentation process, strategic positioning, and channel marketing issues. Case studies and marketing requirements reports are required. Prerequisite: MKT450G

Although the writing, editing, and publishing of this catalog have been guided by an effort to attain total accuracy, no responsibility can be assumed for editorial, clerical, or typographical errors or an error occasioned by an honest mistake. All information contained in this catalog is subject to change, without prior notice, by the officials of the University, and does not constitute an agreement between the University and the student.
University Milestones

Northwestern Polytechnic University (NPU) was founded on January 2, 1984 and incorporated as a California nonprofit, public-benefit institution. Because of the strong demand in Silicon Valley for qualified engineers, the School of Engineering began granting Bachelor of Science degrees in Electrical Engineering in November 1984, followed by the Master of Science in Electrical Engineering in 1985. NPU opened the Computer Systems Engineering programs at both the bachelor’s and master’s levels in 1987. Under high-spirited teamwork, NPU grew quickly from a budding school of a few students and faculty in 1984 to a well-established school by 1989. February 23, 1989 marked a milestone for the University as NPU attained full institutional approval from the California Department of Education. When the entrepreneurial spirit in Silicon Valley demanded students with business training, NPU established the School of Business and began to offer the Master of Business Administration and Bachelor of Business Administration and Information Sciences degrees in 1995. At the same time, the School of Engineering continued to expand its programs by offering bachelor's and master's degrees in computer science with curricula emphasizing computer software applications in various fields based on the industry trends. In January 1998, the Accrediting Council for Independent Colleges and Schools (ACICS) accredited NPU to award bachelor’s and master’s degrees. In April 2005, ACICS accredited NPU to award two doctorate degree programs: Doctor of Business Administration and Doctor of Computer Engineering.

Modern information technology has greatly impacted the administrative and instructional environment of higher education over the last 20 years and has steadily been providing ever-increasing benefits to the campus operational management and program instructions. Incorporating information technology in campus infrastructure has become a clear and vital operational goal for many institutions of higher education as they move steadily towards the digital campus of tomorrow. As an institution with its research and educational focus primarily on the instruction of business and technology, NPU has taken the vision of the digital campus as one of its primary development goals. NPU formulated its digital campus initiatives in the late nineties. Four phases of development activities were defined then and have been pursued. In April 2005, the school reached its goal of a digital campus as the last phase of web-based operation tools was successfully launched. The NPU IT team has been maintaining this platform and its tools to satisfy the needs of faculty, students, and administrative staff.

Board of Trustees

Dr. Jay Thompson (Chair)
Professor/Dean Emeritus, UC-Davis
Sacramento, CA

Professor Paul Jensen (Vice Chair)
Life Sr. Member, IEEE
Former Dean, School of Business & Information Technology, NPU
Pleasanton, CA

Dr. Pochang Hsu
Sr. Member, IEEE
Dean of Academic Affairs, NPU
Fremont, CA

Dr. Bill Wu
Sr. Administrator, NPU
Fremont, CA

Dr. George Hsieh
President, NPU
Fremont, CA
Advisory Board

Mr. Jose Esteves (chair)
Mayor, City of Milpitas
Milpitas, CA

Mr. Donald Bradley
Behavior Health Officer
El Camino Hospital Psychiatry
Mountain View, CA

Dr. Tri Caohuu
Assoc. Dean, Department of EE
San Jose State University
San Jose, CA

Dr. Asayehgn Desta
Professor, Dominican University
San Rafael, CA

Mr. David Logan
Former V.P., HP
Palo Alto, CA

Academic Advisory Committees

School of Business & Information Technology

Dr. Blaine Garfolo (Chair)
Professor, SFSU

Dr. Chiayin Chung
Chief Marketing Officer

Dr. David Paul
Chairman, The Cameron Group

Dr. James Wu
Professor, NPU

Dr. Tsu-Hong Yen
Professor, SJSU

School of Engineering

Mr. Bruce Pettyjohn (Chair)
President, Octomize, Inc.

Dr. Henry Chang
Professor, NPU

Dr. Marcus Lee
Sr. Applications Engineer

Dr. David Li
Staff Systems Engineer

Dr. Timour Paltashev
Sr. Manager, AMD

Administration

Dr. George Hsieh, President

Academic Affairs

Dr. Pochang Hsu, Dean
School of Business & Information Technology
Dr. James Wu, Dean
Chair, Business Programs

School of Engineering

Dr. Jahan Ghofraniha, Dean &
Chair, Electrical Engineering Programs
Dr. Tai Hsu, Chair, Computer Science Programs

Dr. Henry Chang, Chair, Computer Systems
Engineering Programs

General Studies

Dr. Ben Liu, Dean

Business Office

Dr. Bill Wu, Director
Jessie Dhamrait, Manager

Legal Affairs

Gerald Wong, Legal Counsel

Administrative Affairs

Linda Ren, Director
Lily Hsiao, Registrar
Monica Sinha, Director, Admissions
Michael Tang, Director, Placement

Student Services & Information Affairs

Kevin Oskovich, Director
Peijun Zheng, Assoc. Director; Librarian
Mariam Ghazvini, Dean- Counseling

Operations & IT Affairs

Dennis Yu, Director
Elton Li, Director, Systems & Computing

Yan He, Manager, Engineering R&D
NPU Faculty

School of Engineering

Henry Chang (1991)
D.C.E., Northwestern Polytechnic University, CA 2008
M.B.A., Northwestern Polytechnic University, CA 2010
M.A.C.S., University of Texas - Austin, TX, 1993
B.S.E.E., Tatung Institute of Technology, Taiwan, 1974
Network security, embedded engineering, wireless engineering, image processing, object-oriented design and analysis, and internet software development and applications.

Ken Cheung (1998)
M.S.C.S.E., Northwestern Polytechnic University, CA, 1997
B.S., Industrial Engineering, Hong Kong Polytechnic University, 1991
Algorithms analysis and design, computer systems design and simulations, e-commerce, database design, networking applications, MS Windows system and .NET applications.

Jahan Ghofraniha (2003)
Ph.D. E.E., University of British Columbia, Vancouver, Canada, 1997
Master of Applied Science, University of British Columbia, Vancouver, Canada, 1990
B.S.M.E., Sharif University of Technology, Tehran, Iran, 1985
DSP, wireless systems, digital communications, algorithm development and implementation in digital and wireless communication systems.

Pochang Hsu (1997)
Ph.D., E.E., The University of Arizona, AZ, 1993
B.S., Engineering Science, National Cheng Kung University, Taiwan, 1984
High performance digital systems design, high performance CMOS system interface, microelectronics, VLSI systems.

Tai Hsu (2004)
Ph.D. C.S., Oregon State University, OR, 2003
M.B.A., Northwestern Polytechnic University, CA 2010
M.S.C.S., Missouri University of Science and Technology, MO, 1994
B.A.C.S., Wartburg College, Iowa, 1992
Data mining, Unix system programming and administration, Windows system and administration, biocomputing, bioinformatics, robotic systems.

Marcus Lee (2008)
Doctor of Computer Engineering, Northwestern Polytechnic University, CA, 2008
M.S., Computer Engineering, Santa Clara University, CA, 1994
B.S., Computer Science, Oklahoma City University, OK, 1991
Network storage technology, computer networks, software design and development.

John Liu (2011)
Ph.D., E.E., University of California at Los Angeles, CA, 2010
M.S., E.E., University of California at Los Angeles, CA, 2004
B.S., Electronics Information System, Fudan University, China, 2000
Analog design, mixed signal processor design, CMOS technology, SOC design.

Yingli Ren (1998)
M.S.E.E., Santa Clara University, CA, 1995
B.S.E.E., Stanford University, CA, 1987
Logic design and synthesis, CAD tools, Verilog and HDL, ASIC and PLD design techniques, and software design tools development.

Hua-Yu Su (1988)
M.S.E.E., University of Maryland, MD, 1982
B.S.E., National Cheng-Kung University, Taiwan, 1975
Integrated circuit design, analog circuits, digital circuits, mobile systems.

Siu Ming Tong (1998)
M.S.C.S., San Jose State University, CA 1998
B.E.C.E., Hefei University of Technology, China 1982
DSP firmware for real-time video conferencing in Windows NT environment, designing Windows NT audio device drivers, designing SCSI and IDE drivers, designing BIOS, VGA driver, algorithm design.

Ya-Lee Tsai (2011)
D.C.E., Northwestern Polytechnic University, CA, 2010
M.S.C.S., University of California - Long Beach, CA, 2000
B.S., Botany, National Taiwan University, Taiwan, 1981
Wireless networking, computer organization, computer programming.

Nels Vander-Zanden (1999)
Ph.D., C.S., University of Illinois, Urbana-Champaign, IL, 1991
M.S.C.S., University of Illinois, Urbana-Champaign, IL, 1986
B.S.C.I.S., Ohio State University, OH, 1984
Software design and development, hardware/software co-design automation, microarchitecture optimization, and VHDL synthesis.

Jagadeesh Vasudevamurthy (2007)
Ph.D., Electrical Engineering, McGill University, Canada, 1991
B.E., E.E., University of Mysore, India, 1979
Logic design, logic synthesis, and technology mapping tools for both FPGA and ASIC architecture.

Chris White (1999)
M.S.E.E., Northwestern Polytechnic University, CA 1999
B.S.E.E., Northwestern Polytechnic University, CA 1997
Logic design, microprocessor and digital systems, EDA tools, logic synthesis, computer architecture.

Mervyn Wong (1995)
Ph.D. Physics, Harvard University, MA, 1968
A.M., Physics, Harvard University, MA, 1964
Nanotechnology, spintronics, quantum mechanics and applications to technology, THz waves, synchrotron photons, engineering mathematics, analytical and computational approaches to modeling.

Steve Wu (2004)
Ph.D., Computer and Information Science, Ohio State University, OH, 1980
M.S., Computer and Information Science, Ohio State University, OH, 1976
B.S.E.E., National Cheng Kung University, Taiwan, 1972
Internet technology, IP networks, network storages with embedded software, client-server computing, database enterprise application integration, operating systems and network management, innovative high-tech product development, project management.
Fudong Yin (2000)
Ph.D. C.S., Wayne State University, MI, 1994
B.S.C.S., Anhui University, China 1984
Database system design and applications, distributed system design and simulation, computer network applications.

Bin Zhang (2000)
M.S.C.S., Fudan University, China, 1988
B.S.C.S., Fudan University, China, 1985
Networking and real-time embedded systems network protocol, inter-process communication and distributed database in cross platform environments.

Danhua Zhao (1998)
Ph.D., Biomedical Engineering, Duke University, NC, 1992
M.B.A., Northwestern Polytechnic University, CA 2010
B.E.,E.E., University of Science and Technology of China, China, 1982
DSP and image processing, transducer technology, medical imaging systems, and noise reduction algorithms design and implementation.

School of Business and Information Technology

Paul Choi (2010)
J.D., University of California at Davis, CA 2001
B.S., Environmental and Occupational Health, California State University-Northridge, CA 1995
Estate planning, probate administration/litigation, trust administration/litigation, and immigration.

M.B.A., Chadwick University, AL, 1996
B.S. Accounting, Biola University, CA, 1990
Accounting, payroll services, human resources management.

Kenneth Fung (2003)
M.B.A., University of Hawaii at Manoa, HI, 1999
B.B.A., University of Hawaii at Manoa, HI, 1997
Accounting, finance, auditing, information system administration.

Yann Huang (2007)
D.B.A., Golden Gate University, S.F., CA, 2004
M.S., Telecommunication Management, Golden Gate University, S.F., CA, 1993
M.B.A., Computer Information Systems, Golden Gate University, S.F., CA, 1993
B.A., Economics, Chinese Culture University, Taiwan, 1991
Business development and organization management, information management system design and applications, e-commerce technology.

Magdy Hussein (2007)
Ph.D., Organization and Management, Capella University, MN, 2006.
M.B.A., Global Management, University of Phoenix, AZ, 2002
B.S., Telecommunication and Electronics Engineering, University of Helwan, Egypt, 1978
Organizational theory and behavior, operations management, global business, operations management, marketing and global competitive strategies.

George Jen (2001)
M.B.A., Northwestern Polytechnic University, CA, 2011
M.S.C.E., Wayne State University, Detroit, MI 1989
B.E., Computer Engineering, Shanghai University, China 1983
Database design and administration, ERP system design, Internet application programs, software development.

Jane L. King (2006)
J.D., University of Illinois Law School, Urbana-Champaign, IL 1981
A.B., English, University of Illinois, Urbana-Champaign, IL 1974
Corporate law, international law for business, expository writing, business management.

John Ku (2008)
M.B.A., Northwestern Polytechnic University, CA, 2010
Ph.D., Mineral Economics, Colorado School of Mines, CO, 1980
M.S., Mineral Economics, Colorado School of Mines, CO, 1975
B.S., Mining Engineering, National Cheng Kung University, Taiwan, 1970
Economics, financial planning, investment, marketing, sales.

Jack Kuo (2010)
D.B.A., Argosy University, Sarasota, FL, 2008
M.B.A., Oklahoma City University, OK, 1990
B.S. Business, Oklahoma City University, OK, 1990
Business development, sales, marketing, management.

James Nysather (2008)
M.B.A., International Management, Thunderbird School of Global Management, AZ, 1999
B.S., Marketing, St. Cloud State University, MN, 1988
Business development, marketing, business management.

David Paul (2004)
D.B.A., Northwestern Polytechnic University, CA, 2010
M.B.A., California State University, Hayward, CA, 1998
B.S.E., Chemical Engineering, Princeton University, NJ, 1967
Systems engineering management, strategic business management, venture business consulting, engineering process optimization.

Patricia Sholl (1987)
Ph.D., Engineering Science, University of Toledo, OH, 1982
M.S., Industrial Engineering, University of Toledo, OH, 1977
M.B.A., Operations Analysis, University of Toledo, OH, 1976
B.S., Mathematics, University of Toledo, OH, 1972
Systems analysis, simulation, manufacturing process methodology, software applications in business.

Swapna Sinha (2008)
Doctor of Business Administration, Golden Gate University, CA, 2006
B.A., History, University of Lucknow, India, 1986
Business development, marketing, finance, strategic management

Kevin Sung (2006)
M.B.A., Northwestern Polytechnic University, CA, 2005
B.S.E.E., Northwestern Polytechnic University, CA, 2003
Project and program management, logistic and operations management, strategic analysis and implementation in systems and product quality improvement.
Nik Tehrani (2000)
Ph.D., Business Management, Northcentral University, AZ, 2008
M.B.A., Pepperdine University, CA, 1999
B.S.E.E., Cogswell Polytechnical College, CA, 1996
Business development, entrepreneurship, sales, marketing, management.

D.B.A., Northwestern Polytechnic University, CA, 2012
D.C.E., Northwestern Polytechnic University, CA, 2008
M.B.A., Woodbury University, CA, 2001
B.E., E.E., Tamkang University, Taiwan, 1983
Financial planning, investment, risk management, solar cell technologies, memory system, thin film deposition and process technology.

Lee Winters (1998)
Master of Health Administration, University of Washington, Seattle, WA 1974
B.A., Government, Chapman University, Orange, CA 1967
Human resource management, organizational behavior, human communication, Spanish.

Wanda Wong (2009)
M.B.A., California State University, East Bay, CA 1998
B.A., Computer Science, UC-Berkeley, CA 1987
Accounting, accounting information system, finance and taxation.

James Wu (2007)
D.B.A., Golden Gate University, S.F., CA, 1992
M.B.A., University of California- Berkeley, CA, 1985
B.B.A., National Taiwan University, Taiwan, 1982
Finance, investment, international business management, economics, organizational management.

Charles Zhi (2008)
Master of Accountancy, Golden Gate University, CA, 1997
Bachelor of Economics, Central University of Finance & Economics, China, 1989
Accounting, taxation, and finance.

General Studies

Donald Bradley (2006)
M.S., City & Regional Planning, University of Southern California, CA, 1962
B.S., Public Administration, University of Southern California, CA 1961
City planning, architecture, public administration, behavioral health psychology, drug prevention counseling, and public health.

Wayne Chow (2010)
Doctor of Musical Arts, Louisiana State University, LA, 1987
Master of Music, Pittsburg State University, KS, 1984
Bachelor of Music, Piano, Pittsburg State University, KS, 1983
Musical theory, music composing, piano technology and performance, computer music.

Ph.D., Systems & Industrial Engineering, University of Arizona, AZ, 1995
B.S., Marine Engineering, Republic of Korea Naval Academy, South Korea, 1982
System engineering and analysis, Mathematical modeling and simulation, Physics and mechanical analysis; statistics analysis and decision theory.

Ben Liu (1996)
Ph.D., Biomathematics, University of Alabama, Birmingham, AL, 1979
A.M., Physics, Dartmouth College, NH, 1975
B.S.,E.E., National Taiwan University, Taiwan, 1969
Instrumentation and physical measurements, electronic computation, mathematical analysis, physics, brush painting.

Zhupei Shi (2003)
Ph.D., Physics, New York University, NY, 1993
M.S., Physics, New York University, NY, 1992
B.S., Nuclear Physics, Fudan University, China, 1985
Nanotechnology, fiber-optic communication technology, nanoelectromechanical systems (NEMS), computational physics, device physics.

Jesse Tsao (2001)
Ph.D., Journalism, Southern Illinois University at Carbondale, IL, 1991
M.A., Information and Communication Studies, California State University at Chico, CA, 1983
B.A., Journalism, Fu Shing Kong College, Taiwan, 1970.
Interpersonal/ small group /organization/mass intercultural communication, communication theory, journalism.
Directions to the NPU Facilities in Fremont

► From I-880: Exit I-880 at Mission Blvd.-Warren Ave. and take Mission Blvd. East (towards the hills). Turn right onto Warm Springs Blvd. Drive past Warren Ave. to Fourier Ave. Turn right onto Fourier Ave. to go to the learning facilities. Fourier Avenue turns into Westinghouse Dr. where the NPU Administration Office is located.

► From I-680: Exit I-680 at Mission Blvd.-Warm Springs District and drive west on Mission Blvd. (towards the Bay) to Warm Springs Blvd. Turn left onto Warm Springs Blvd. Drive past Warren Ave. to Fourier Ave. Turn right onto Fourier Ave. to go to the learning facilities. Fourier Avenue turns into Westinghouse Dr. where the NPU Administration Office is located.

Administration Office 47671 Westinghouse Drive, Fremont, CA 94539
Tel: 510-592-9688; Fax: 510-657-8975

School of Business & Information Technology
School of Engineering 47655 Warm Springs Blvd., Bldg. A, Fremont, CA 94539
Recreation Center 105-119 Fourier Avenue, Fremont, CA 94539
Online Education Center 47651 Warm Springs Blvd., Fremont, CA 94539