CYCLOPS MEDIA REMOTE
PROJECT TEAM 2008

COURSE CATALOG 2009_

EFFECTIVE SPRING QUARTER 2009

NEUMONT UNIVERSITY

ENCODING THE NEXT_

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Neumont University is accredited by the Accrediting Council for Independent Colleges and Schools. For complete information concerning accreditation, please refer to the Accreditation Section of this catalog.

Neumont University
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SOUTH JORDAN, UTAH 84095
801-302-2800
www.neumont.edu

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2009 ACADEMIC CALENDAR_

2009 SPRING QUARTER

April 6 ..... New Student Orientation
April 7 ..... First Day of Class
April 13 ..... Add/Drop Deadline
May 15 ..... Spring Commencement
May 25 ..... Memorial Day (no class)
June 12 ..... Last Day of Class for Quarter

2009 SUMMER QUARTER

July 7 ..... First Day of Class
July 13 ..... Add/Drop Deadline
July 24 ..... Pioneer Day (no class)
September 7 ..... Labor Day (no class)
September 11 ..... Last Day of Class for Quarter

2009 FALL QUARTER

September 28 ..... New Student Orientation
September 29 ..... First Day of Class
October 5 ..... Add/Drop Deadline
November 23-27 ..... Thanksgiving Break (no class)
December 11 ..... Last Day of Class for Quarter

2010 WINTER QUARTER

January 12 ..... First Day of Class
January 18 ..... Human Rights Day (no class)
January 20 ..... Add/Drop Deadline
February 15 ..... President's Day (no class)
March 19 ..... Last Day of Class

2010 SPRING QUARTER

April 5 ..... New Student Orientation
April 6 ..... First Day of Class
April 14 ..... Add/Drop Deadline
May 14 ..... Spring Commencement
May 31 ..... Memorial Day (no class)
June 11 ..... Last Day of Class

_PRESIDENT'S MESSAGE

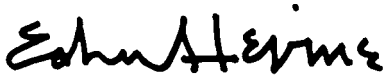
Welcome to Neumont University. Software is advancing the way the world works, recreates, communicates, and learns. The Neumont mission is to educate those who will innovate new software by providing a professional education that is rich in ideas, current in industry practices, and deep in technological insight from the input of industry-leading partners. Your time in this program will feel like a whirlwind of learning, growth, and team-work. As you explore the courses and services available at Neumont, you will discover what makes Neumont a superior option for computer science education. It is my hope that you will take advantage of the remarkable learning opportunities Neumont provides, building knowledge, memories, and friendships that last a lifetime.

As you review this catalog you might notice that, although our program concentrates on computer science at the Associate, Bachelor and Master's degree level, we also provide an essential foundation of general education courses. Neumont prepares graduates with the courses required to fulfill your CS degree requirements and with the basics of a relevant, well-rounded education. Through project courses in computer science and industry-partnered Enterprise Projects, you will have many opportunities to explore advanced technologies, work with industry experts, refine your skills, and build a portfolio of real software experiences. Our general education offerings support and enhance your CS learning interests.

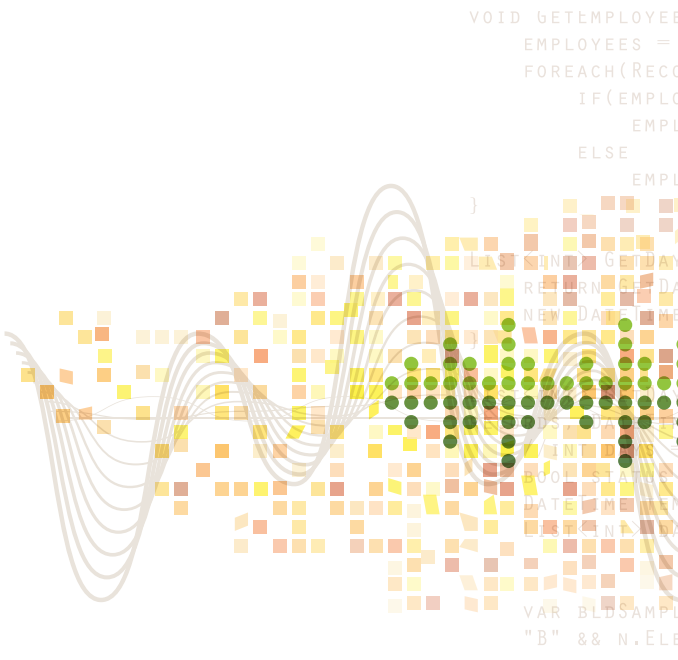
A degree from Neumont University is a seal of approval from leading companies; proof that you have developed the ability to create, theorize, and adapt quickly in a teamwork environment. It is these skills that enable Neumont graduates to maintain a competitive edge throughout the course of their career, resulting in impressive starting salaries at exciting companies. Leading employers say that our distinguished faculty have designed a thirty–month program that delivers more useful knowledge than most four-year programs – in a fraction of the time. Explore the courses in this catalog and you will see how Neumont will help you to become a tech-ready, team-ready, and project-ready CS innovator.

I look forward to seeing you on campus.

Best wishes,



Edward H. Levine
President, Neumont University



CAMPUS ADMINISTRATION AND FACULTY_

UNIVERSITY ADMINISTRATION

Edward Levine, *President*
Thomas Bickart, *Chief Financial Officer*
Samuel Puich, *Provost*
Aaron Reed, *Associate VP Employer Relations*
Meghan Kennedy, *Associate Dean of Academics*
Erin McCormack, *Associate Dean of Students*
Larry Crandall, *Registrar*
Charlie Parker, *Dean of Admissions*
Jemé Deviny, *Director of Financial Services*
Dave Conger, *Director of Information Technology*
Shawn Loutensock, *Program Manager, Career Services*

CAMPUS FACULTY

Crandall, Larry	Oral and Collaborative Communications *B.S. Speech, Utah State University and MBA, Neumont University*
DeReamer, Sharon	Object-Oriented Programming C++, C#, Java Software Engineering *B.S. Metallurgical Engineering, University of Wisconsin and M.S. Computer Science, University of Texas - Dallas*
Ensign, Mark	Computer Science Object-Oriented Development *B.S. Mathematics, University of Utah and M.S. Mathematics, University of Utah*
Finlay, John	Computer Science Open Source Software *B.S. Computer Engineering, Brigham Young University*
Garner, Becky	Professional Study Skills/ Time Management *B.S. Family, Consumer, & Human Development, Utah State University*
Halladay, Steven	Computer Science Java Software Methodologies *B.A. Communications, Brigham Young University and M.S. Computer Science, Brigham Young University*
Kennedy, Meghan	Instructional Design Psychology Collaboration and Communications *B.S. Psychology, Brigham Young University & M.S. Instructional Psychology and Technology, Brigham Young University*
Kilbourn, John	Director, Digital Design Design and Entertainment *B.A. Fine Arts University of Utah*
King, Jamie	Computer Science .NET Technology *B.S. Computer Science, Utah Valley State College*
Lamb, Robert	Computer Science Object-Oriented Programming .Net Technologies Computational Theory *B.S. Computer Science, Neumont University*

Loutensock, Shawn	Professional Development *B.A. Communications,* *University of Utah*
Dr. Morgan, Tony	Director, MSCS Program Computer Science Model Driven Development Business Rules *B.A. Earth Sciences, Open University,* *B.S. Computer Systems Engineering,* *Coventry University,* *M.S. Control Engineering,* *Coventry University and* *Ph.D. Computer Science,* *University of Cambridge*
Pace, Aaron	Computer Science *B.S. Computer Engineering,* *Brigham Young University and* *M.S. Computer Science,* *Brigham Young University*
Reed, Aaron	Computer Science Enterprise Software Practices *B.S. Computer Science,* *Weber State University and* *MBA, Neumont University*
Walkenhorst, Jake	Computer Science User Interface Technologies *B.S. Computer Science* *Brigham Young University*
Watts, Natalie	Computer Science C#. JAVA, Data Base *B.S. Mathematics,* *University of Utah and* *MS Technology Education,* *Brigham Young University*
Young, Tyler	Computer Science User Interface Technologies *B.S. Computer Science,* *Neumont University*

The mission of Neumont University is to provide a professional education that is rich in ideas, current in industry practices, and deep in technological insight from the input of industry-leading partners.

We are committed to: a collaborative learning process; a quality learning environment; contributing broadly to students' lives; and bringing value to the enterprises with which we partner.

Our graduates will be known for their technology expertise and business acumen, their capacity to innovate, and their motivation to succeed.

_ABOUT NEUMONT UNIVERSITY

STUDENT LEARNING GOALS

- Provide students with the opportunity to develop the necessary technical, business, and collaboration skills, knowledge, and experience to enter the workplace as productive, competent professionals in the computer science field.
- Provide learning environments where students are immersed in daily application of software development, computer science, and informatics principles and practices.
- Foster strong relationships with leading companies and professionals in the computer science field to situate student learning in the context of authentic problems faced by the technology industry.
- Create opportunities for students to develop effective collaboration and interpersonal communication skills that will transfer to building successful relationships and teams in the workplace.
- Improve student learning by innovating and applying the best practices in the areas of project-based learning, problem-based learning, competency-based assessment, and teaching effectiveness during all stages of learning.
- Encourage creativity and individual expression by providing rich project experiences that mirror the target employment environments.
- Build a bridge between students and employers by engaging in community and global software development projects.
- Assess the development and progress of instruction to improve the student learning experience.

STUDENT SERVICE GOALS

- Help students adapt to an intensive, accelerated project-based learning environment that is significantly different from a traditional educational environment. Reward those students who demonstrate self-discipline, motivation, and academic achievement.
- Create a student life environment that fosters leadership development, accountability, professional work standards, and ethical decision-making.
- Provide a living environment conducive to academic success at a reasonable price with activities conducive to the personal and social growth of residents.
- Enable individual success through academic and non-academic advising, referrals to community resources, student life programming, and educational accommodations for students with documented disabilities.
- Care for the holistic needs of students.
- Help students make appropriate class registration choices to further their academic development.

HISTORY, LEGAL CONTROL, AND GOVERNANCE

Neumont University is operated by Neumont University, LLC. Neumont University, LLC is a wholly owned subsidiary of Neumont Holdings, LLC, a Delaware limited liability company whose principal offices are located at 10701 South River Front Parkway, South Jordan, Utah 84095. Neumont Holdings, LLC Officers include Edward H. Levine, President.

Neumont University introduced its Computer Science program at its Utah campus in January 2004.

ACCREDITATION

The University is accredited by the Accrediting Council for Independent Colleges and Schools (ACICS) to award a Bachelor of Science in Computer Science, Associate of Science in Computer Science, Master of Science in Computer Science, and Graduate Certificates in Computer Science. The Accrediting Council for Independent Colleges and Schools 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. The Accrediting Council for Independent Colleges and Schools (ACICS) is located at 750 First Street, NE, Washington, D.C. 20002; (202) 336-6780.

LICENSURE AND APPROVALS

Neumont University is registered under the Utah Postsecondary Proprietary School Act (Title 13, Chapter 34, Utah Code). Registration under the Utah Postsecondary Proprietary School Act does not mean that the state of Utah supervises, recommends, or accredits the institution. Questions about the registration of this institution should be directed to: Utah Division of Consumer Protection, Heber Wells Building, Second Floor, 160 East 300 South, SM Box 146704, Salt Lake City, Utah 84114-6704. (801) 530-6601.

CAMPUS LOCATION

Neumont University *(Campus and Corporate office)*
10701 South River Front Parkway, Suite 300
South Jordan, UT 84095
(801) 302-2800
Fax (801) 302-2811
www.neumont.edu

STUDENT COMPLAINTS AND GRIEVANCES

Generally, complaints should be directed to the Office of Student Affairs. If the Office of Student Affairs is not able to address the student's complaint, the student may seek additional assistance from the following:

Academic concerns: Office of the Provost
Operational issues or concerns: President

If a student feels that the University has not adequately addressed a complaint or concern, the student may consider contacting the Accrediting Council at 750 First Street, N.E., Suite 980, Washington, DC 20002-4241, (202) 336-6780.

Students may also contact the Utah State Commission on Postsecondary Education at the Heber Wells Building, Second Floor, 160 East 300 South, SM Box 136704, Salt Lake City, UT 84114-6704, (801) 530-6601.

Students will NOT be subject to unfair actions as a result of initiating a complaint.

STATEMENT OF NON-DISCRIMINATION

Neumont University does not discriminate on the basis of race, color, national origin, sex, religion, age, marital status, veteran status, or disability, in the administration of its educational and admissions policies, scholarship and loan programs, or other university administered programs.

Neumont University complies with Title VI of the Civil Rights Act of 1964, the Age Discrimination in Employment Act of 1967, Title IX of the Education Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, the Age Discrimination Act of 1975, and the Americans with Disabilities Act of 1990. The Americans with Disabilities Act of 1990, as amended, protects qualified applicants, students, and employees with disabilities from discrimination in hiring, promotion, discharge, pay, job training, fringe benefits, classification, referral, and other aspects of employment on the basis of disability. The law also requires that covered entities provide qualified applicants, students, and employees with disabilities with reasonable accommodations that do not impose undue hardship.

_UNDERGRADUATE PROGRAMS

ADMISSIONS_

To apply for admittance to Neumont University a potential student should submit the following documents for review by the Acceptance Committee:

- Application
- Proof of high school graduation or its equivalent
- Evidence of academic performance, such as standardized test scores and/or transcripts

Upon submission of all documents, the applicant's file is scheduled for review by the Neumont University Acceptance Committee. Applicants are evaluated for their academic potential, technical knowledge, and level of motivation.

Students may apply for admittance at any time. Applicants are informed of their acceptance status after all information has been received and reviewed. The offer of admission will be valid only for the term requested on the application. Upon written request, students may defer their enrollment at the University for one quarter beyond the quarter of acceptance. The written request should be received by the Admissions Office no later than thirty days prior to the start of the quarter for which the student was admitted.

INTERNATIONAL APPLICANTS

Neumont University is authorized under federal law to enroll non-immigrant students. An international application for admission is considered complete and ready for review when the documents and records have been received. Documents include a completed application signed, dated, and accompanied by a non-refundable international student application fee of $125. This fee must be drawn from a U.S. bank account, be an international money order, or be paid by credit card.

In order to satisfy the general admissions requirements listed above, foreign educational documents, including proof of high school graduation or its equivalent, (if the institution attended was not a U.S. institution) must be evaluated by a credential evaluation service that is a member of NACES at the applicant's own expense. For a complete list of NACES credential evaluation services visit www.naces.org.

Applicants will need to authorize the credential evaluation company to send the evaluated documents directly to Neumont University after evaluation. Students must obtain approval from the Office of the Registrar for any credential evaluation.

Contact the Registrar's office for a list of authorized evaluation companies.

Proven English language proficiency is required if English is not the applicant's first language. The preferable method of proving English proficiency is official test results of the TOEFL (Test of English as a Foreign Language). Applicants with TOEFL scores of 550+ (213+ computer-based score) will be considered for admission. In addition to or in place of the TOEFL exam, the University, at its discretion, may require students to complete a telephone interview in English.

Official ACT or SAT test results are recommended.

Once these documents are complete, the application will be submitted for review. Accepted applicants will then need to provide the following:

An official bank statement from the bank (not just a receipt) showing sufficient funds to cover expenses for a calendar year of attendance at Neumont University. Please contact your admissions representative for the current dollar amount. F-1 students are required to provide proof of additional funds for each F-2 dependent. If the applicant has a sponsor, the sponsor will need to complete the affidavit of support. Scholarship money can be applied toward the certifying amount.

All international students who are currently studying in the United States on an F-1 student visa and who are transferring from another U.S. institution are required to submit a Transfer Eligibility Form prior to the issuing of the new I-20. All international student scholarships are contingent on meeting I-9 eligibility requirements and lawful F-1 status. Admitted, eligible students will be issued an I-20 form from Neumont University.

TRANSFER STUDENTS

Neumont University may award transfer credit for courses that meet our evaluation criteria from an institution accredited by an agency recognized by the U.S. Department of Education. Courses taken at a foreign institution will be accepted for transfer on the basis of the report of a credential evaluation service. For courses to be considered for transfer credit, a student must request a transfer credit review from the Office of the Registrar and submit official transcripts and course descriptions from the time period when the courses were taken to the Office of the Registrar.

Credit will be accepted only for courses in which a grade of 'C' or higher was earned. The number of credits awarded for a course will not exceed the number of credits offered for the related Neumont University course.

Computer Science Courses:
To receive credit by examination of course equivalency for a Neumont University required Computer Science course, the student must pass a Neumont University competency test for that specific course. Contact the Office of the Registrar for a current list of available competency tests.

General Education Courses:
To receive transfer credit for a Neumont University required General Education course, the transferring course must be comparable to the Neumont University course for content and general outcome requirements. The Office of the Registrar will review the transcripts and course description in the original institution's catalog or class syllabus from the time period the course was taken. Neumont University may accept transfer credits to meet the elective General Education course requirements as long as the course is in a General Education subject area that Neumont University offers.

The maximum number of General Education transfer credits that Neumont University will award for previous coursework is 52 credit hours for students who enrolled prior to fall of 2008; and 37 for students enrolled after fall 2008. Transfer credits within a concentration are subject to review.

ADVANCED PLACEMENT AND CLEP EXAMINATION ACCEPTANCE POLICY

Neumont University allows credit for Advanced Placement (AP) and CLEP examinations. For detailed information please contact the Office of the Registrar.

MILITARY CREDIT

Programs at Neumont University are approved for veterans training. Neumont University will evaluate military experience for university credit, based upon the Army/ACE Registry Transcript System (AARTS) and the Sailor / Marine / ACE Registry Transcript (SMART) systems.

AARTS transcripts are available to regular Army enlisted soldiers and veterans, as well as active duty Army National Guard personnel and reservists. SMART transcripts supply similar information for active duty Sailors and Marines, enlisted officers, reserve component personnel, and separated or retired Sailors and Marines.

Only courses, training, or military experience that fulfill Neumont University General Education requirement categories will be evaluated from official AARTS or SMART transcripts. Neumont University follows the American Council on Education recommendations for military transfer credits.

CONCURRENT ENROLLMENT

Neumont University accepts limited concurrent college-level General Education credits. Official transcripts from the credit-granting institution are required for proof of course completion. The student bears all expenses for any courses taken at another institution.

Students are advised to verify potential credit with the Neumont Registrar, prior to enrollment at the alternate college or university. Decisions regarding transfer credit are made on a case-by-case basis. Previous transfer credit decisions do not guarantee future credit acceptance.

Pending approval, students may transfer up to 9 general education credits obtained during concurrent enrollment at another institution while attending Neumont University.

UNDERGRADUATE PROGRAM OVERVIEW_

INTRODUCTION

Neumont University offers two degrees in its undergraduate program; an Associate of Science in Computer Science and Bachelor of Science in Computer Science.

COMPUTER SCIENCE PROJECT COURSES

Neumont University believes the key to a useful and applicable Computer Science degree is a team-based, hands-on experience with real software projects. In support of this, students spend a large amount of their time working in teams on pertinent, real-world software development projects. These project courses, together with the core lecture courses as well as the general education courses, provide students a rich and challenging learning experience which will result in an excellent education.

There are a variety of project environments in which students work, both internal and external. Students work on internal projects while they are learning the intricacies of programming languages, development environments, and/or basic computer science discipline. Internal software projects are controlled, designed, and structured by Neumont University instructors and professors to ensure that students master the required competencies. Students will also participate in external Enterprise Projects. Enterprise Projects are those projects developed for external customers with real business needs and constraints. These projects give students exposure to the types of environments they may encounter in their careers.

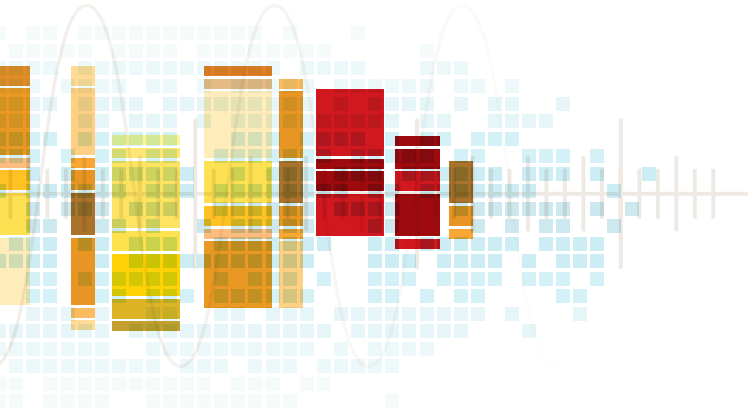
GENERAL EDUCATION COURSES

General Education courses provide instruction in foundational subject areas. While these courses are not tied directly to projects, whenever possible, general education topics are supportive of what students are learning in their projects and other computer science courses.

COURSE NAMING CONVENTIONS

All courses with numbers between 100 and 299 are considered lower level courses. Courses numbered between 300 and 499 are upper level courses. The following naming conventions are used to identify all the categories of courses:

BUS *Business*
CS *Transitional Computer Science Courses*
CSC *Computer Science*
DBT *Database Technologies*
FAC *Fine Arts and Communication*
HPE *Physical Education*
HUM *Humanities*
ITS *Information Security*
ITH *Information Technologies*
MAT *Mathematics*
MGT *Management*
MOA *Modeling and Analysis*
MTM *Multimedia*
PRO *Projects*
PSC *Physical and Biological Sciences*
RBT *Robotics*
SSC *Social Science*



ASSOCIATE OF SCIENCE IN COMPUTER SCIENCE_

INTRODUCTION

The Neumont University Associate of Science in Computer Science (ASCS) degree is designed to provide students with the fundamental knowledge and interdisciplinary problem-solving skills required for a career in the dynamic computing industry. The program serves students who may be preparing for entry-level positions in computer and information science, existing workers in need of retraining, and students preparing to matriculate into the Neumont University BSCS program. Similar to each of the Neumont programs, students will learn in a rich problem and project based curriculum. Students will also have the opportunity to develop a strong foundation of technical skills, business environment knowledge, and interpersonal skills which are vital in today's workplace.

Upon completing the instructional and project hours, a Neumont University graduate has an Associate in Computer Science degree and a portfolio of project work. Students who have met all graduation requirements and have earned a cumulative grade point average of 2.8 or higher are encouraged to apply to the Neumont University Bachelor of Science in Computer Science program.

PROGRAM OVERVIEW

Students attend classes and work on projects generally between 8:00 am and 5:00 p.m., Monday through Friday. Many assignments are performed in groups as part of lab and project work. The program is designed to take four to five quarters.

Upon satisfactory completion of the first three quarters of the ASCS you are eligible to apply for admission into the BSCS program. Contact the admissions office for information.

PROGRAM OBJECTIVES

Each student will graduate with an ASCS and is expected to understand, progress, and improve in each of the following:

- Develop software using modern languages and integrated development environments
- Understand and employ a variety of algorithms and data structures
- Be introduced to system architectures
- Begin to understand and employ established and emerging software standards
- Develop applications with a variety of deployment mechanisms
- Understand software development in the context of business
- Participate in a range of software development lifecycle phases using a variety of software development methodologies
- Effectively communicate and collaborate in a software development environment
- Integrate disparate areas of technical and non-technical expertise through real-world projects
- Become effective problem solvers and critical thinkers

GRADUATION REQUIREMENTS

To qualify for graduation with an Associate of Science in Computer Science degree, students are required to accomplish the following:

- Complete a minimum of 90 quarter credit hours with an average grade of 'C' (Cumulative Grade Point Average of 2.0) or higher for all work taken at the University
- Complete at least 50 credit hours in Computer Science core
- Complete a minimum of 31 quarter credit hours in General Education
- Complete a minimum of 9 elective credits from courses in concentration areas.
- Abide by all University rules and regulations
- Must earn a minimum of 'C' in each required course
- In order to advance to a course with a prerequisite the student must earn a minimum of 'C' in the prerequisite course, or receive permission from the Provost.
- Students must complete 12 credits in residence while enrolled in the Associates Program, or receive permission from the Provost.

ASCS PROGRAM PLAN

MINIMUM GENERAL EDUCATION CREDITS REQUIRED	**31 CREDITS**
MINIMUM COMPUTER SCIENCE CREDITS REQUIRED	**50 CREDITS**
Core Computer Science Courses	38 credits
Foundational Courses and Projects	12 credits
MINIMUM COMPUTER SCIENCE ELECTIVES REQUIRED	**9 CREDITS**
TOTAL REQUIRED FOR ASCS	**90 CREDITS**

ASCS COMPUTER SCIENCE COURSES

CORE COMPUTER SCIENCE COURSES		**38 CREDITS REQUIRED**
CSC110	Introduction to Computer Science	6 credits
CSC120	Topics in Computer Science	6 credits
CSC150	Object Oriented Programming and Design	6 credits
CSC230	Computational Theory or	
CSC130	Principles of Software Engineering	4 credits
CSC250	Algorithms and Data Structures I	4 credits
CSC252	Algorithms and Data Structures II	4 credits
DBT130	Databases I	4 credits
MOA140	Information Modeling I	4 credits

CORE PROJECT/COURSE SETS		**12 CREDITS REQUIRED**
Choose one set:		
CSC160	.Net I: Windows Forms	4 credits
PRO160	.Net I Project	2 credits
	or	
CSC180	Java I: SE	4 credits
PRO180	Java I Project	2 credits
Choose the one set that sequences your first set above:		
CSC260	.Net II: Web Development	4 credits
PRO260	.Net II Project	2 credits
	or	
CSC280	Java II: EE	4 credits
PRO280	Java II Project	2 credits

CS ELECTIVES COURSES	**9 CREDITS REQUIRED**
**Choose courses in the 100 or 200 level from any Academic Concentration area*	
TOTAL COMPUTER SCIENCE CREDITS	**59 CREDITS**

ASCS GENERAL EDUCATION COURSES

BUSINESS		**7 CREDITS REQUIRED**
BUS105	Professional Skills and Ethics	3 credits
Choose one from following courses:		
BUS101	Introduction to Personal Finance	2 credits
BUS120	Business Communications	3 credits
BUS121	Business Accounting	3 credits
BUS201	Introduction to Economics	3 credits
BUS215	Entrepreneurship Fundamentals	3 credits
BUS220	Marketing Communications	3 credits
BUS290	Business Fundamentals	3 credits
BUS299	Professional Communications	2 credits

FINE ARTS AND COMMUNICATION		**8 CREDITS REQUIRED**
FAC105	Leadership and Problem Solving in Industry	6 credits
FAC125	Coll. and Interpersonal Communication	2 credits

HUMANITIES		**6 CREDITS REQUIRED**
HUM110	Logic I	3 credits
HUM121	English Composition	3 credits

MATH		**6 CREDITS REQUIRED**
MAT110	Sets, Probability, and Number Systems	Required - 3 credits
Choose one additional math course from the following courses:		
MAT105	College Algebra	3 credits
MAT110	Sets, Probability, and Number Systems	3 credits
MAT150	Trigonometry	3 credits
MAT210	Linear Algebra	3 credits
MAT250	Calculus	3 credits
MAT260	Statistics	3 credits

PHYSICAL AND BIOLOGICAL SCIENCE		**2 CREDITS REQUIRED**
Choose from one of the following courses:		
PSC115	Introduction to Biology	3 credits
PSC201	Astronomy	2 credits
PSC210	Environmental Studies	2 credits
PSC220	Introduction to Physics	3 credits
PSC230	Introduction to Chemistry	3 credits

SOCIAL SCIENCE		**2 CREDITS REQUIRED**
Choose from one of the following courses:		
SSC120	Mapping and Geospatial Information	3 credits
SSC140	Introduction to Social History	2 credits
SSC215	Globalization and Int'l Relations	2 credits
SSC230	World Cultures	3 credits
SSC240	Social Psychology	3 credits
SSC271	American Government	3 credits

TOTAL GENERAL EDUCATION CREDITS	**31 CREDITS**

BACHELOR OF SCIENCE IN COMPUTER SCIENCE_

INTRODUCTION

The Neumont University Bachelor of Science in Computer Science (BSCS) program distinguishes itself with an integrated, project and problem-based curriculum that focuses on the skills most valued by today's employers. Graduates of this innovative program will be motivated, entry-level software developers who are equipped for success in the corporate world. All Computer Science projects and coursework are designed to provide Neumont University graduates with a strong foundation in technical skills and standards, an understanding of the business environment, and the ability to communicate and function well as members of teams.

Upon completing the instructional and project hours, the Neumont University graduate has a baccalaureate degree in Computer Science and a portfolio of project work.

The innovative nature of the program allows students to specialize in one or more disciplines under the computer science umbrella. Students can focus on the varying career paths that are closely tied to emerging or high demand careers in the computer science and information technology industry. Neumont University has worked closely with business and industry to develop curriculum for each concentration which will further enhance our students' skills, portfolio, and marketability. Students can take courses in the following concentrations:

SOFTWARE ENGINEERING

Within this Concentration students can take courses in the following Interest Areas:

- Database Programming & Administration
- Business Analytics and Modeling
- Mobile Devices
- Web Development

BUSINESS INFORMATION TECHNOLOGY

Within this Concentration students can take courses in the following Interest Areas:

- Software Project Management
- Information Management and Consulting
- Information Assurance and Security
- Midrange Platform Administration and Development
- System Administration

ELECTRONIC MEDIA, DESIGN, AND ENTERTAINMENT

Within this Concentration students can take courses in the following Interest Areas:

- Digital Design
- Gaming and Entertainment

PROGRAM OVERVIEW

Students attend classes and work on projects generally between 8:00 am and 5:00 p.m., Monday through Friday. Many assignments are performed in groups as part of lab and project work.

PROGRAM OBJECTIVES

Some of the objectives of the program vary depending on the concentration(s) chosen by the student. However, each student will graduate with a BSCS and is expected to master each of the following:

- Develop software using modern languages and integrated development environments
- Understand and employ a variety of algorithms and data structures
- Design system architectures
- Understand and employ established and emerging software standards
- Develop applications with a variety of deployment mechanisms
- Understand software development in the context of business
- Participate in a range of software development lifecycle phases using a variety of software development methodologies
- Effectively communicate and collaborate in a software development environment
- Integrate disparate areas of technical and non-technical expertise through real-world projects
- Become effective problem solvers and critical thinkers

GRADUATION REQUIREMENTS

Beginning with students who enroll for the Fall Quarter 2008, the graduation requirements for students will change. Students enrolled prior to the Fall Quarter 2008 will have the option to continue with their current graduation requirements and catalog or can agree to the new *Enrollment Agreement* and follow the requirements of this new catalog. Students remaining in their original catalog will still have the opportunity take new course offerings from this catalog.

GRADUATION REQUIREMENTS

*(Students enrolled in the BSCS program **prior** to Fall 2008)*

To qualify for graduation with a Bachelor of Science in Computer Science degree, students are required to accomplish the following:

- Complete a minimum of 180 quarter credit hours with an average grade of 'C' (Cumulative Grade Point Average of 2.0) or higher for all work taken at the University
- Complete at least 96.5 credit hours in Computer Science
- Must have at least 45 credit hours of upper level courses
- Must take a minimum of 38 credit hours in Project courses.
- Must complete a minimum of 6 credits of Enterprise Projects.
- Complete a minimum of 54 quarter credit hours in General Education (select eligible courses from BUS, FAC, HPE, HUM, MAT, MGT, MTM, PSC)
- Maximum of 12 elective credits in any one General Education Category. Note: This maximum is waived for students participating in a particular concentration.
- Abide by all University rules and regulations
- Must earn a minimum of 'C' in each required course
- In order to advance to a course with a prerequisite the student must earn a minimum of 'C' in the prerequisite course or receive instructor permission

BSCS PROGRAM PLAN

*(Students enrolled in the BSCS program **prior** to Fall 2008)*

MINIMUM GENERAL EDUCATION CREDITS REQUIRED	**54 CREDITS**
Required General Education Courses	20 credits
Elective General Education Courses	34 credits
MINIMUM COMPUTER SCIENCE CREDITS REQUIRED	**96.5 CREDITS**
Required Core Computer Science Courses	56.5 credits
Required Computer Science Projects	38 credits
Elective Computer Science Courses	2 credits
MINIMUM ADDITIONAL ELECTIVE CREDITS REQUIRED	**29.5 CREDITS**
**Includes Concentration Courses*	
TOTAL REQUIRED FOR BS IN COMPUTER SCIENCE	**180 CREDITS**

BSCS GENERAL EDUCATION COURSES

*(Students enrolled in the BSCS program **prior** to Fall 2008)*

REQUIRED GENERAL EDUCATION		**20 CREDITS**
FAC120	Spoken Communications	3 credits
FAC125	Collaborative and Interpersonal Communications	2 credits
HUM110	Logic I	3 credits
HUM121	English Composition	3 credits
MAT110	Sets, Probability, and Number Systems	3 credits
MAT150	Trigonometry	3 credits
MAT250	Calculus	3 credits

BSCS COMPUTER SCIENCE REQUIRED COURSES

*(Students enrolled in the BSCS program **prior** to Fall 2008)*

REQUIRED CORE COMPUTER SCIENCE COURSES		**56.5 CREDITS**
CSC120	Topics in Computer Science*	5.5 credits
CSC150	Object Oriented Programming and Design*	11 credits
CSC250	Algorithms and Data Structures I	4 credits
CSC160	.Net I: Windows Forms	4 credits
CSC180	Java I: Introduction to Java Development	4 credits
CSC260	.Net II: Introduction to ASP .Net Web Development	4 credits
CSC280	Java II: Introduction to the Java EE	4 credits
CSC360	.Net III: Advanced Topics in .Net	4 credits
	or	
CSC380	Java III: Integration Strategies for SOA	4 credits
DBT130	Databases I	4 credits
DBT230	Databases II	4 credits
MOA140	Information Modeling I	4 credits
MOA240	Information Modeling II	4 credits

REQUIRED COMPUTER SCIENCE PROJECTS*		**38 CREDITS**
Select a minimum of 38 credit hours from this list (minimum of 6 credits of Enterprise Projects)		
CS190	Foundational Projects I – Java SE	6.5 credits
CS192	Foundational Projects II - .Net Win Forms	6.5 credits
CS194	Foundational Projects III – Java EE	6.5 credits
CS290	Foundational Projects IV - .Net Web Forms	6.5 credits
CS390	Developmental Projects I – Information Modeling	6.5 credits
CS391	Developmental Projects I – Java	6.5 credits
CS392	Developmental Projects I – Open Source	6.5 credits
CS393	Developmental Projects I - .Net	6.5 credits
CS395	Developmental Projects II – Information Modeling	6.5 credits
CS396	Developmental Projects II – Java	6.5 credits
CS397	Developmental Projects II – Open Source	6.5 credits
CS398	Developmental Projects II - .Net	6.5 credits
CS495	Developmental Projects III – Information Modeling	6.5 credits
CS496	Developmental Projects III – Java	6.5 credits
CS497	Developmental Projects III – Open Source	6.5 credits
CS498	Developmental Projects III - .Net	6.5 credits

* *These courses are being phased out and will only be available to students currently in the program as of October 14, 2008.*

GRADUATION REQUIREMENTS

*(Students enrolled in the BSCS program **after** Fall 2008)*

To qualify for graduation with a Bachelor of Science degree in Computer Science, students are required to accomplish the following:

- Complete a minimum of 180 quarter credit hours with an average grade of 'C' (Cumulative Grade Point Average of 2.0) or higher for all work taken at the University
- Complete at least 126 credit hours in Computer Science, Concentration, or Equivalent Electives
- Must have at least 45 credit hours of upper level courses
- Must take a minimum of 32 credit hours in Project courses
- Must complete a minimum of 13 credits of Enterprise Projects
- Complete a minimum of 54 quarter credit hours in General Education
- Abide by all University rules and regulations
- Must earn a minimum of 'C' in each required course
- In order to advance to a course with a prerequisite the student must earn a minimum of 'C' in the prerequisite course, or receive permission from the Provost.

BSCS PROGRAM PLAN

*(Students enrolled in the BSCS program **after** Fall 2008)*

MINIMUM GENERAL EDUCATION CREDITS REQUIRED	**54 CREDITS**
Core General Education Courses	39 credits
Elective General Education Courses	15 credits
MINIMUM COMPUTER SCIENCE/EQUIVALENT CREDITS REQUIRED	**90 CREDITS**
Core Computer Science Courses	38 credits
Foundational Courses and Projects	24 credits
Developmental and Enterprise Courses and Projects	28 credits
MINIMUM CONCENTRATION OR CS ELECTIVES* REQUIRED	**36 CREDITS**
**Includes any courses listed in Concentration Areas*	
TOTAL REQUIRED FOR BS IN COMPUTER SCIENCE	**180 CREDITS**

BSCS GENERAL EDUCATION COURSES

*(Students enrolled in the BSCS program **after** Fall 2008)*

BUSINESS
7 CREDITS REQUIRED

BUS105	Professional Skills and Ethics	Required - 3 credits
BUS299	Professional Communications	Required - 2 credits
Choose from the following courses:		
BUS101	Introduction to Personal Finance	2 credits
BUS120	Business Communications	3 credits
BUS121	Introduction to Accounting	3 credits
BUS201	Introduction to Economics	3 credits
BUS215	Entrepreneurship Fundamentals	3 credits
BUS220	Marketing Communications	3 credits
BUS290	Business Fundamentals	3 credits
BUS310	Entrepreneurship in the Business Economy	3 credits
BUS315	Entrepreneurial Marketing	3 credits
BUS320	Persuasive Communications	3 credits
BUS325	Money, Financing, and Fundraising	3 credits
BUS330	Strategic Planning	2 credits
BUS400	Professional Portfolio	3 credits
BUS415	Entrepreneurial Business Strategies	3 credits
BUS420	Innovative Technology and Marketing	3 credits
BUS430	Operational Planning	2 credits

FINE ARTS AND COMMUNICATION — **11 CREDITS REQUIRED**

FAC105	Leadership and Problem Solving in Industry	6 credits
FAC120	Spoken Communication	3 credits
FAC125	Coll. and Interpersonal Communication	2 credits

HUMANITIES — **6 CREDITS REQUIRED**

HUM110	Logic I	3 credits
HUM121	English Composition	3 credits

MATH — **9 CREDITS REQUIRED**

MAT110	Sets, Probability, and Number Systems	Required - 3 credits
Choose a minimum of two other math courses (min. 3 credits must be upper division)		
MAT105	College Algebra	3 credits
MAT110	Sets, Probability, and Number Systems	3 credits
MAT150	Trigonometry	3 credits
MAT210	Linear Algebra	3 credits
MAT250	Calculus	3 credits
MAT260	Statistics	3 credits
MAT320	Numerical Analysis	3 credits
MAT305	Problem Solving	3 credits
MAT410	Discrete Structures	3 credits

PHYSICAL AND BIOLOGICAL SCIENCE — **2 CREDITS REQUIRED**

Choose from one of the following courses:

PSC115	Introduction to Biology	3 credits
PSC201	Astronomy	2 credits
PSC210	Environmental Studies	2 credits
PSC220	Introduction to Physics	3 credits
PSC230	Introduction to Chemistry	3 credits

SOCIAL SCIENCE — **4 CREDITS REQUIRED**

Choose from the following courses:

SSC120	Mapping and Geospatial Information	3 credits
SSC140	Introduction to Social History	2 credits
SSC215	Globalization and Int'l Relations	2 credits
SSC230	World Cultures	3 credits
SSC240	Social Psychology	3 credits
SSC271	American Government	3 credits
SSC310	American Legal System	3 credits
SSC315	Culture, Knowledge, and Society	3 credits
SSC320	Group Dynamics	3 credits
SSC350	Intellectual Property	3 credits

CORE GENERAL EDUCATION COURSES	**39 CREDITS REQUIRED**
ELECTIVE GENERAL EDUCATION COURSES	**15 CREDITS REQUIRED**
TOTAL GENERAL EDUCATION CREDITS	**54 CREDITS**

BSCS COMPUTER SCIENCE REQUIRED AND CONCENTRATION COURSES

*(Students enrolled in the BSCS program **after** Fall 2008)*

CORE COMPUTER SCIENCE COURSES		38 CREDITS REQUIRED
CSC110	Introduction to Computer Science	6 credits
CSC120	Topics in Computer Science	6 credits
DBT130	Databases I	4 credits
MOA140	Information Modeling I	4 credits
CSC150	Object Oriented Programming and Design	6 credits
CSC230	Computational Theory	4 credits
CSC250	Algorithms and Data Structures I	4 credits
CSC252	Algorithms and Data Structures II	4 credits

FOUNDATIONAL COURSES AND PROJECTS		24 CREDITS REQUIRED
CSC180	Java I: SE	4 credits
PRO180	Java I Project	2 credits
CSC160	.Net I: Windows Forms	4 credits
PRO160	.Net I Project	2 credits
CSC280	Java II: EE	4 credits
PRO280	Java II Project	2 credits
CSC260	.Net II: Web Development	4 credits
PRO260	.Net II Project	2 credits

DEVELOPMENTAL AND ENTERPRISE COURSES AND PROJECTS		28 CREDITS REQUIRED
Choose a minimum of one set:		
CSC380	Java III: Integration Strategies for SOA	4 credits
PRO380	Java III Project	4.5 credits
	or	
CSC360	.Net III: Advanced Topics	4 credits
PRO360	.Net III Project	4.5 credits
	or	
CSC360	.Net III or CSC380 Java III	4 credits
PRO320	Development Project I	4.5 credits
TOTAL DEVELOPMENTAL		**8.5 OR MORE**

Choose a minimum of two courses:		
PRO490	Enterprise Projects I	6.5 credits
PRO491	Enterprise Projects II	6.5 credits
PRO492	Enterprise Projects III	6.5 credits
PRO495	Enterprise Projects IV	9 credits
PRO499	Enterprise Projects V	12 credits
TOTAL ENTERPRISE		**13 OR MORE**

Choose from the following courses:		
PRO320	Developmental Projects I	4.5 credits
PRO340	Developmental Projects II	4.5 credits
PRO420	Developmental Projects III	4.5 credits
PRO491	Enterprise Projects II	6.5 credits
PRO492	Enterprise Projects III	6.5 credits
TOTAL ADDITIONAL PROJECTS		**6.5 OR MORE**

CONCENTRATION OR ELECTIVE CREDITS	36 CREDITS REQUIRED

SOFTWARE ENGINEERING CONCENTRATION

CORE REQUIRED COURSES		12 CREDITS REQUIRED
CSC130	Principles of Software Engineering	4 credits
DBT230	Databases II	4 credits
MOA240	Information Modeling II	4 credits

Choose a minimum of 24 credits from the following general listing and/or interest areas:

GENERAL COMPUTER SCIENCE		
CSC263	Advanced .Net Programming with C#	4 credits
CSC285	Roles in Software Development	4 credits
CSC320	Software Engineering Methodologies	4 credits
CSC322	Software Design in UML	4 credits
CSC324	XML and XSLT	4 credits
CSC325	Human Computer Interface Design	4 credits
CSC328	Enterprise JavaBeans	4 credits
CSC330	Programming Languages	4 credits
CSC335	Applications in Human Computer Interface	4 credits
CSC340	Computer Architecture	4 credits
CSC415	Patterns	4 credits
DBT424	Querying XML data with XPath and XQuery	4 credits

INTEREST AREAS

DATABASE	
DBT330	MySQL Database Case Study 4 credits
DBT331	Microsoft Database Case Study 4 credits
DBT332	IBM Database Case Study 4 credits
DBT333	Oracle Database Case Study 4 credits

BUSINESS ANALYTICS AND MODELING	
CSC410	Software Architectures 4 credits
MOA235	Introduction to Model Driven Development 4 credits
MOA335	Business Modeling and System Design 4 credits
MOA440	Advanced Information Modeling 4 credits

MOBILE DEVICES	
CSC170	Introduction to Mobile Device Programming 4 credits
CSC268	Windows Mobile Devices 4 credits
CSC288	Java Micro Edition 4 credits
CSC430	Enterprise Integrations with Mobile Devices 4 credits

WEB DEVELOPMENT		
CSC282	Rich Internet Applications	4 credits
CSC365	Building Reusable Web Components	4 credits
CSC420	Building Feature Rich Web Sites	4 credits
MTM282	Introduction to Flash Development	4 credits

TOTAL SOFTWARE ENGINEERING ELECTIVES	24 CREDITS REQUIRED

TOTAL SOFTWARE ENGINEERING CONCENTRATION	36 CREDITS

BUSINESS INFORMATION TECHNOLOGY CONCENTRATION

CORE REQUIRED COURSES **10 CREDITS REQUIRED**

BUS120	Business Communications	3 credits
BUS290	Business Fundamentals	3 credits
CSC340	Computer Architecture	4 credits

Choose a minimum of 26 credits from the following general listing and/or interest areas:

GENERAL BUSINESS AND INFORMATION TECHNOLOGY

BUS121	Introduction to Accounting	3 credits
BUS220	Marketing Communications	3 credits
BUS299	Professional Communications	3 credits
BUS320	Persuasive Communications	3 credits
BUS330	Strategic Planning	2 credits
BUS430	Operational Planning	2 credits
CSC105	Using Modern Operating Systems	4 credits
FAC301	Leadership Development	3 credits

INTEREST AREAS

ENTREPRENEURSHIP IN INFORMATION TECHNOLOGY

BUS220	Marketing Communications	3 credits
BUS310	Entrepreneurship in the Business Economy	3 credits
BUS325	Money, Financing, and Fundraising	3 credits
BUS415	Entrepreneurial Business Strategies	3 credits
BUS420	Innovative Technology and Marketing	3 credits

INFORMATION MANAGEMENT AND CONSULTING

ITH205	IT Foundations	4 credits
ITH265	Business Process Management	4 credits
ITH365	Service Oriented Architecture Overview	4 credits
ITH465	IT Architectures	4 credits

INFORMATION ASSURANCE AND SECURITY

ITS220	Hacking, Forensics, and Countermeasures	4 credits
ITS320	Systems and Network Security	4 credits
ITS380	Auditing, Governance, and Compliance	4 credits
ITS410	Developing Secure Code	4 credits

MIDRANGE PLATFORM ADMINISTRATION AND DEVELOPMENT

ITH280	Introduction to Midrange Platforms	4 credits
CSC350	Report Generator Programming	4 credits
CSC390	Rational Development Tools	4 credits
CSC425	Client/Server Programming	4 credits

SOFTWARE PROJECT MANAGEMENT

MGT210	Project Cost and Scope Management	4 credits
MGT310	Project Schedule and Performance Management	4 credits
MGT350	Management of Project Teams and Team Optimization	4 credits
MGT410	Quality Control, Assurance, and Testing	4 credits

SYSTEM ADMINISTRATION

ITH205	IT Foundations	4 credits
ITH210	Networking	4 credits
ITH220	Server Administration	4 credits
ITH265	Business Process Management	4 credits

TOTAL BUSINESS INFORMATION TECHNOLOGY ELECTIVES **26 CREDITS REQUIRED**

TOTAL BUSINESS INFORMATION TECHNOLOGY CONCENTRATION **36 CREDITS**

ELECTRONIC MEDIA, DESIGN, AND ENTERTAINMENT CONCENTRATION

CORE REQUIRED COURSES **9 CREDITS REQUIRED**

FAC101	Art Appreciation	2 credits
MTM282	Introduction to Flash Development	4 credits
MTM355	Digital Design	3 credits

Choose a minimum of 27 credits from the following general listing or interest areas:

GENERAL MULTIMEDIA

MTM 120	Introduction to Photoshop	3 credits
MTM 130	Introduction to Drawing	3 credits
MTM140	Basics of Film	2 credits
MTM240	Video Fundamentals	3 credits
FAC140	Elements of Design	2 credits
FAC240	Product Development	3 credits
HUM240	Journalism	3 credits
HUM321	Technical Writing	3 credits

INTEREST AREAS

DIGITAL DESIGN

CSC325	Human Computer Interface Design	4 credits
MTM110	Introduction to Digital Photography	2 credits
MTM316	Advanced Flash	4 credits
MTM220	Graphic Design	2 credits

GAMING AND ENTERTAINMENT

CSC385	Development in 3rd Party Systems	4 credits
MTM312	Multimedia, Game and Entertainment Systems	4 credits
MTM380	Creative Writing and Storyboarding	3 credits
MTM412	Advanced Entertainment Systems	4 credits
RBT326	Intelligent Systems	4 credits

TOTAL BUSINESS INFORMATION TECHNOLOGY ELECTIVES **27 CREDITS REQUIRED**

TOTAL BUSINESS INFORMATION TECHNOLOGY CONCENTRATION **36 CREDITS**

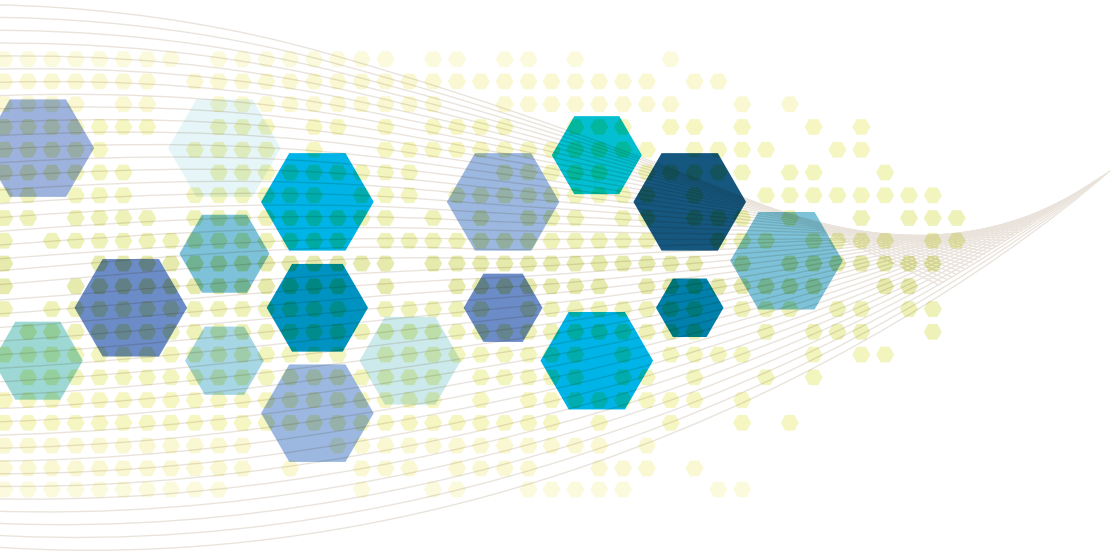
SPECIAL TOPICS

Students may tailor a custom concentration that fits their interests and career pursuits. Students choose courses from interest areas as well as general course listings to develop a concentration of a minimum of 36 credits. Courses may come from different concentrations. This "special" concentration must be approved by the faculty member(s) involved in the areas of interest as well as the Provost before the student begins courses in a custom concentration.

To meet approval, the concentration must meet academic requirements, feasibility requirements, and enhance a student's opportunity for obtaining professional employment.

A student graduating with this "special" concentration will have the concentration stated on his or her diploma.

TOTAL SPECIAL TOPICS CONCENTRATION **36 CREDITS**



UNDERGRADUATE COURSE LISTING_

BUSINESS

BUS101	Introduction to Personal Finance	2 credits
BUS105	Professional Skills and Ethics	3 credits
BUS120	Business Communications	3 credits
BUS121	Introduction to Accounting	3 credits
BUS201	Introduction to Economics	3 credits
BUS215	Entrepreneurship Fundamentals	3 credits
BUS220	Marketing Communications	3 credits
BUS290	Business Fundamentals	3 credits
BUS299	Professional Communications	2 credits
BUS310	Entrepreneurship in the Business Economy	3 credits
BUS315	Entrepreneurial Marketing	3 credits
BUS320	Persuasive Communications	2 credits
BUS325	Money, Finance, and Fundraising	3 credits
BUS330	Strategic Planning	2 credits
BUS400	Professional Portfolio	2 credits
BUS415	Entrepreneurial Business Strategies	3 credits
BUS420	Innovative Technology and Marketing	3 credits
BUS430	Operational Planning	2 credits

COMPUTER SCIENCE

CSC105	Using Modern Operating Systems	4 credits
CSC110	Introduction to Computer Science	6 credits
CSC120	Topics in Computer Science	6 credits
CSC130	Principles of Software Engineering	4 credits
CSC150	Intro Object Oriented Programming	6 credits
CSC160	.Net I: Introduction to Windows Forms Development	4 credits
CSC170	Introduction to Mobile Device Programming	4 credits
CSC180	Java I: Introduction to Java Development	4 credits
CSC230	Computational Theory	4 credits
CSC250	Algorithms and Data Structures I	4 credits
CSC252	Algorithms and Data Structures II	4 credits
CSC260	.Net II: Introduction to ASP.Net Web Development	4 credits
CSC263	Advanced .Net Programming with C#	4 credits
CSC268	Windows Mobile Devices	4 credits
CSC280	Java II: Introduction to Java EE Development	4 credits
CSC282	Rich Internet Applications	4 credits
CSC285	Roles-Based Software Development	4 credits
CSC288	Java Micro Edition (ME)	4 credits
CSC315	Innovation and Disruptive Technologies	4 credits
CSC320	Software Engineering Methodologies	4 credits
CSC322	Software Design Using UML	4 credits
CSC324	XML and XSLT	4 credits
CSC325	Human Computer Interface Design	4 credits
CSC328	Enterprise JavaBeans	4 credits
CSC330	Programming Languages	4 credits
CSC335	Applications of Human Computer Interface Design	4 credits
CSC340	Computer Architecture	4 credits
CSC350	Report Generator Programming	4 credits
CSC360	Net III: Advanced Topics	4 credits
CSC365	Building Reusable Web Components	4 credits
CSC380	Java III: EE Integration for SOA	4 credits
CSC385	Development in Third Party Systems	4 credits
CSC390	Rational Development Tools	4 credits
CSC410	Software Architectures	4 credits
CSC415	Patterns	4 credits
CSC420	Building Feature Rich Web Sites	4 credits
CSC425	Client/Server Programming	4 credits
CSC430	Enterprise Integrations with Mobile Devices	4 credits

DATABASE TECHNOLOGY

DBT130	Relational Databases I	4 credits
DBT230	Relational Databases II	4 credits
DBT330	MySQL Database Case Study	4 credits
DBT331	Microsoft Database Case Study	4 credits
DBT332	IBM Database Case Study	4 credits
DBT333	Oracle Database Case Study	4 credits
DBT424	Querying XML data with XPath and XQuery	4 credits
DBT430	Data Warehousing and Business Intelligence	4 credits

FINE ARTS AND COMMUNICATION

FAC101	Art Appreciation	2 credits
FAC105	Leadership and Problem Solving in Industry	6 credits
FAC120	Spoken Communications	3 credits
FAC125	Collaborative and Inter. Comm. I	2 credits
FAC126	Collaborative and Inter. Comm. II	2 credits
FAC140	Elements of Design	2 credits
FAC152	Japanese Language and Culture I	3 credits
FAC153	Japanese Language and Culture II	3 credits
FAC156	Chinese Language and Culture I	3 credits
FAC157	Chinese Language and Culture II	3 credits
FAC160	Arabic Language and Culture I	3 credits
FAC161	Arabic Language and Culture II	3 credits
FAC170	Spanish Language and Culture I	3 credits
FAC171	Spanish Language and Culture II	3 credits
FAC200	Theater	2 credits
FAC201	Music Appreciation	2 credits
FAC210	Music Composition	2 credits
FAC240	Product Development	3 credits
FAC301	Leadership Development	3 credits
FAC320	Conflict Resolution	2 credits

HEALTH AND PHYSICAL EDUCATION

HPE160	Personal Fitness	2 credits
HPE170	Healthy Living	2 credits
HPE180	Golf	2 credits
HPE190	Strength Training	2 credits

HUMANITIES

HUM110	Logic I	3 credits
HUM120	Modern Literature	3 credits
HUM121	English Composition	3 credits
HUM210	Logic II	3.5 credits
HUM220	Introduction to Philosophy	2 credits
HUM221	Intermediate English	2 credits
HUM230	Linguistics	3 credits
HUM240	Journalism	3 credits
HUM305	Ethics	2 credits
HUM310	Critical Thinking	2 credits
HUM321	Technical Writing	3 credits

INFORMATION TECHNOLOGY

ITH205	IT Foundations	4 credits
ITH210	Networking	4 credits
ITH220	Server Administration	4 credits
ITH265	Business Process Management	4 credits
ITH280	Introduction to Midrange Platforms	4 credits
ITH365	Service Oriented Arch. Overview	4 credits
ITH465	IT Architectures	4 credits

INFORMATION SECURITY

ITS220	Hacking, Forensics, and Countermeasures	4 credits
ITS320	Systems and Network Security	4 credits
ITS380	Auditing, Governance, and Compliance	4 credits
ITS410	Developing Secure Code	4 credits

MATH

MAT105	College Algebra	3 credits
MAT110	Sets, Probability, and Number Systems	3 credits
MAT150	Trigonometry	3 credits
MAT210	Linear Algebra	3 credits
MAT250	Calculus	3 credits
MAT260	Statistics	3 credits
MAT305	Problem Solving	3 credits
MAT320	Numerical Analysis	3 credits
MAT410	Discrete Structures	3 credits

MANAGEMENT

MGT210	Project Cost and Scope Management	4 credits
MGT310	Project Schedule and Performance Mgt.	4 credits
MGT350	Mgt. of Project Teams and Team Optimization	4 credits
MGT410	Quality Control, Assurance, and Testing	4 credits

MODELING AND ANALYSIS

MOA140	Information Modeling I	4 credits
MOA235	Intro. To Model Driven Development	4 credits
MOA240	Information Modeling II	4 credits
MOA335	Business Modeling and System Design	4 credits
MOA440	Advanced Information Modeling	4 credits

MULTIMEDIA

MTM110	Introduction to Digital Photography	2 credits
MTM120	Introduction to Photoshop	3 credits
MTM130	Introduction to Drawing	3 credits
MTM140	Basics of Film	2 credits
MTM220	Graphic Design	2 credits
MTM240	Video Fundamentals	3 credits
MTM282	Introduction to Flash Development	4 credits
MTM312	Multimedia, Game, and Entertainment Systems	4 credits
MTM316	Advanced Flash	4 credits
MTM355	Digital Design	3 credits
MTM380	Creative Writing and Storyboarding	3 credits
MTM412	Advanced Entertainment Systems	4 credits

PROJECTS

PRO160	.Net I Project	2 credits
PRO180	Java I Project	2 credits
PRO260	.Net II Project	2 credits
PRO280	Java II Project	2 credits
PRO320	Developmental Projects I	4.5 credits
PRO340	Developmental Projects II	4.5 credits
PRO360	.Net III Project	4.5 credits
PRO380	Java III Project	4.5 credits
PRO420	Developmental Projects III	4.5 credits
PRO490	Enterprise Projects I	6.5 credits
PRO491	Enterprise Projects II	6.5 credits
PRO492	Enterprise Projects III	6.5 credits
PRO495	Enterprise Projects IV	9 credits
PRO499	Enterprise Projects V	12 credits

PHYSICAL AND BIOLOGICAL SCIENCES

PSC115	Introduction to Biology	3 credits
PSC201	Astronomy	2 credits
PSC210	Environmental Studies	2 credits
PSC220	Introduction to Physics	3 credits
PSC230	Introduction to Chemistry	3 credits

ROBOTICS

RBT326	Intelligent Systems	4 credits

SOCIAL SCIENCE

SSC120	Mapping and Geospatial Information	3 credits
SSC140	Introduction to Social History	2 credits
SSC215	Globalization and International Relations	2 credits
SSC230	World Cultures	3 credits
SSC240	Social Psychology	3 credits
SSC271	American Government	3 credits
SSC310	American Legal System	3 credits
SSC315	Culture, Knowledge, and Society	3 credits
SSC320	Group Dynamics	3 credits
SSC350	Intellectual Property	2 credits

UNDERGRADUATE COURSE DESCRIPTIONS_

BUSINESS

BUS101 INTRODUCTION TO PERSONAL FINANCE (2 CREDITS)
Provides an overview of strategies for coping with daily living expenses while planning for long-term financial security.

BUS105 PROFESSIONAL SKILLS & ETHICS (3 CREDITS)
Helps students develop and refine necessary skills for their academic and professional success. Students will learn effective time management, communication, and research skills. Students will also discuss the importance of ethics, professionalism, and integrity in their personal and professional life.

BUS120 BUSINESS COMMUNICATION (3 CREDITS)
Prepares students to communicate effectively and professionally through both oral and written communication in various business settings.

BUS121 INTRODUCTION TO ACCOUNTING (3 CREDITS)
Instructs students on the nature of accounting from the basic principles of accrual accounting through the preparation of basic financial statements for measurement of income and equity. Analysis and recording of financial transactions is also considered.

BUS201 INTRODUCTION TO ECONOMICS (3 CREDITS)
Examines economic theory as it applies to contemporary market economy. The focus is on understanding basic economic theory, economic terms, and commonly used economic indicators.

BUS215 ENTREPRENEURSHIP FUNDAMENTALS (3 CREDITS)
Students will explore principles and practices necessary to identify ideas and develop these ideas into successful businesses. This course instructs students on both theory and practice of business planning, marketing planning and business financial planning. In addition, students will gain experience in presenting and evaluating business plans.

BUS220 MARKETING COMMUNICATIONS (3 CREDITS)
This course will equip students will the basic tools for developing and understanding effective marketing communications. It will focus on communication with customers in the form of advertising, sales promotion, public relations, and other areas of marketing. Print, internet, and multimedia marketing with be discussed. This course will emphasize marketing principles and best practices through developing an effective integrated marketing communications plan.

BUS290 BUSINESS FUNDAMENTALS (3 CREDITS)
A survey of the various aspects of business including human resources, finance, client relations, and production. Students will be able to identify the type of information that is critical to each aspect of the business. Students will also learn about various organizational structures and some aspects of business law.

BUS299 PROFESSIONAL COMMUNICATIONS (2 CREDITS)
Students will learn about and put into practice various topics related to effective professional communication. Major course topics are professional writing including memos, emails, resumes and cover letters, professional verbal communication including interviewing techniques and negotiation, and other relevant aspects of professional communication. Students will leave the class with a professional portfolio and skills in communicating in the business world.
Prerequisite(s): Instructor Permission

BUS310 ENTREPRENEURSHIP IN THE BUSINESS ECONOMY (3 CREDITS)
This course injects students into the entrepreneurial aspects of business including business planning, marketing, sales and finance. This course ventures beyond the classroom with many hands-on assignments intended to involve students in the business world and expose them to real and simulated start-up situations.
Prerequisite(s): BUS 290 Business Fundamentals

BUS315 ENTREPRENEURIAL MARKETING (3 CREDITS)
This course explores state-of-the-art marketing strategies. Students will establish a marketing foundation by understanding marketing fundamentals. Students will then build upon these fundamentals by exploring current technologies and trends in online marketing. These technologies include search engine optimization, viral approaches and the impact of blogging, pod-casting and other online video and multimedia.

BUS320 PERSUASIVE COMMUNICATIONS (2 CREDITS)
Introduces students to persuasion, sales, and negotiation in the business environment. Research, theories, and the social impact of these business tools will be discussed. Students will evaluate marketing and advertising to understand various persuasive techniques. Students will develop written and oral skills in these areas.

BUS325 MONEY, FINANCE, AND FUNDRAISING (3 CREDITS)
For many people, money is the scoreboard of life. Unfortunately, most people have no idea what money really is, how it works, or how to make it work in their favor. This course begins by exploring what money is, how it is measured, how it works, and the forces that control it. We then consider various tools and mechanisms used to manipulate and leverage money and what we can do to maximize its impact. Finally, we focus on a few key concepts that will have a tremendous impact on your financial security and quality of life.
Prerequisite(s): BUS 290 Business Fundamentals

BUS330 STRATEGIC PLANNING (2 CREDITS)
This course will allow students to apply proven business processes that companies adopt to strategically position themselves for success. Students will learn to identify and understand the mission and vision of a company. They will use that information to develop a strategic business plan that will take into account technology, resources, and the current market. Students will use key market indicators to project potential success for their business and understand how to account and handle change.
Prerequisite(s): BUS 290 Business Fundamentals

BUS400 PROFESSIONAL PORTFOLIO (2 CREDITS)
Students will develop an electronic, professional portfolio which they will be able to use for employment purposes. Students will learn how to select, organize, and analyze their work samples to showcase relevant competencies for the purpose of targeting a specific job market.

BUS415 ENTREPRENEURIAL BUSINESS STRATEGIES (3 CREDITS)
This course investigates strategies entrepreneurs employ when creating and positioning their businesses. These strategies include services versus products-offered, intellectual property-based versus execution-based, business versus consumer businesses. This course also considers strategies necessary to establish a new business including crossing the chasm. The course addresses negotiation strategies and game theory.
Prerequisite(s): BUS 290 Business Fundamentals

BUS420 INNOVATIVE TECHNOLOGY AND MARKETING (3 CREDITS)
The forces of our dynamic technological world are tightly intertwined with the business world. This course explores the effects of innovative and disruptive technologies have on the marketing world – both in terms of technologies used for marketing and marketing innovative technologies.
Prerequisite(s): BUS 290 Business Fundamentals

BUS430 OPERATIONAL PLANNING (2 CREDITS)
This course focuses on managing the production operations of a business enterprise. Operational planning involves looking at overall decisions in business development and planning, and their impact on the strategic and financial success of the business. Students will study the important concepts, issues, and procedures of an operations planning and control system.
Prerequisite(s): BUS 290 Business Fundamentals. BUS 330 Strategic Planning is strongly recommended.

COMPUTER SCIENCE

CSC105 USING MODERN OPERATING SYSTEMS (4 CREDITS)
Students learn many of the most productive ways to use modern operating systems like Windows™ and Linux. Students learn those specifics about operating systems that will enable them to be highly effective software developers. Topics of study include roles of the OS kernel, virtual memory handling, and file systems. Students will also explore functions of the operating system that will make them more productive such as shell interaction and scripting, environment variables, and security.

CSC110 INTRODUCTION TO COMPUTER SCIENCE (6 CREDITS)
Students gain exposure to a wide variety of topics in Computer Science. While building real applications in the lab portion of this course, students also learn fundamental concepts about such topics as data storage and manipulation, object-oriented programming, and other introductory topics.

CSC120 TOPICS IN COMPUTER SCIENCE (6 CREDITS)
Students gain exposure to a wide variety of topics in Computer Science. While building real applications in the lab portion of this course, students also learn about the different foci a student could have while studying Computer Science at Neumont University.

CSC130 PRINCIPLES OF SOFTWARE ENGINEERING (4 CREDITS)
This course introduces students to the software development life cycle and includes discussions on software processes, process models, and methodologies. The course will also discuss support and maintenance related to software after it has been released.

CSC150 INTRODUCTION TO OBJECT ORIENTED PROGRAMMING (6 CREDITS)
Provides a thorough introduction to object oriented programming. Topics include fundamentals of programming, classes and objects, inheritance, polymorphism, interfaces, events, and exception handling, with an emphasis on writing quality object-oriented code.
Prerequisites: CSC110 Introduction to Computer Science

CSC160 DEVELOPMENT IN THE .NET ENVIRONMENT I (4 CREDITS)
Introduces students to various concepts in the .NET environment and to programming standards within that environment. Topics may include Windows desktop application development, multi-user application development using ASP.NET, ADO.NET, XML, and Web Services.
Prerequisites: DBT130 Relational Databases I (may be taken concurrently); CSC150 Introduction to Object Oriented Programming. Corequisite: PRO160 .Net I Project

CSC170 INTRODUCTION TO MOBILE DEVICE PROGRAMMING (4 CREDITS)
This course introduces mobile device computing and programming concepts. Mobile devices include personal digital assistants (PDAs), mobile telephones, smart phones, personal entertainment devices, and computing tablets. This course explores the devices, their operating system platforms, and their hardware profiles for application programming, e.g., MIDP, CDMA, CLDC, qualcomm, etc. Programming labs in this course will focus on game interfaces and brew.
Prerequisites: CSC105 using modern operating systems (may be taken concurrently)

CSC180 JAVA I: INTRO. TO JAVA DEVELOPMENT (4 CREDITS)
Students are introduced to the Java core packages and APIs. Students learn skills for developing, deploying, and managing Java applications. Course content includes the language's syntax, core APIs, graphical user interface (GUI) framework(s), and platform tools.
Prerequisites: DBT130 Relational Databases I (may be taken concurrently); CSC150 Introduction to Object Oriented Programming. Corequisite: PRO180 Java I Project

CSC230 COMPUTATIONAL THEORY (4 CREDITS)
This course is designed to pique a student's interest in exploring and learning more about the theoretical side of computing. This course exposes students to conceptual tools that practitioners use in computer engineering. It develops critical thinking and problem solving skills by demonstrating elegant solutions to complicated problems.

CSC250 ALGORITHMS AND DATA STRUCTURES I (4 CREDITS)
This course is designed to enhance a student's problem solving ability and enhance their skillset in developing solutions to common software problems using general algorithms and abstract data types. Students will utilize various structures such as stacks, queues, hash tables, linked lists, and trees to store data; understand and apply various searching and sorting algorithms to software; and make analyses of algorithm use and design.
Prerequisites: MAT110 Sets, Probability, and Number Systems (may be taken concurrently), CSC150 Introduction to Object Oriented Programming

CSC252 ALGORITHMS AND DATA STRUCTURES II (4 CREDITS)
Designed as a continuation of CSC250. This course will allow students to design and implement their own algorithms and data structures in an effort to improve efficiency and elegance. Students will compare and contrast algorithms and techniques to better understand the principles involved in being a good problem solver in regards to computer science.
Prerequisites: CSC250 Algorithms and Data Structures I

CSC260 .NET II: INTRODUCTION TO ASP .NET WEB DEVELOPMENT (4 CREDITS)
This course builds on students' knowledge of the .NET environment and programming standards within that environment. Topics may include Windows desktop application development, multi-user application development using ASP.NET, ADO.NET, XML, and Web Services.
Prerequisites: CSC160 .Net I: Introduction to Windows Form Dev. Corequisite: PRO260 .Net II Project

CSC263 ADVANCED .NET PROGRAMMING WITH C# (4 CREDITS)
This is an advanced topics course covering programming techniques, C# language features, CLR facilities, and the .NET Framework. Students will also continue to develop general programming concepts in this course. Students can expect to spend time outside of the scheduled class time working on various projects, programming assignments, reading, and researching.
Prerequisites: CSC250 Algorithms and Data Structures I

CSC268 WINDOWS MOBILE DEVICES (4 CREDITS)
This course will introduce programming Windows Mobile™ enabled devices with Microsoft visual studio .net languages.
Prerequisites: CSC170 Introduction to Mobile Device Software Development

CSC280 JAVA II: INTRODUCTION TO JAVA EE DEVELOPMENT ENVIRONMENT (4 CREDITS)
Students build upon the knowledge gained from CSC180 and begin learning the Java Enterprise Edition (Java EE) platform. Java EE technologies are introduced with an emphasis on Java Web technologies such as Servlets, Java Server Pages (JSP), the Web container, and the role of enterprise application servers. Design patterns applicable to the presentation tier will be discussed. Students learn how to put persistence strategies into practice. Applicable open-source frameworks and tools may also be introduced.
Prerequisites: CSC180 Java I: Introduction to Java Development. Corequisite: PRO280 Java II Project

CSC282 RICH INTERNET APPLICATIONS (4 CREDITS)
This course teaches students the history of web browser-based applications, the ECMA Script language, the browser Document Object Model (DOM), advanced Cascading Style Sheet (CSS), and asynchronous XML web service calls. Together, these technologies form the core of what has become known as AJAX programming. Students will gain experience incorporating design patterns and best practices with AJAX techniques to create rich applications that increase the usability of web sites.
Prerequisites: CSC260 Development in the .Net Environment II or CSC280 Introduction to Java EE Development Environment

CSC285 ROLE-BASED SOFTWARE DEVELOPMENT (4 CREDITS)
This course introduces students to multiple viewpoints of developing system solutions in the software industry. Students will study a selection of common approaches for analyzing systems and designing solutions. All students will have a chance to test out different roles in the development process and gain an understanding of the importance of the different activities in creating successful software solutions. Through participation in various roles in design and development activities, students are encouraged to explore their future career interests. This course is a prerequisite for the specialized role courses.

CSC288 JAVA MICRO EDITION (ME) (4 CREDITS)
This course will introduce the Java Micro Edition programming language. Emphasis will be given to Netbeans and eclipse-based ides for Java ME development.
Prerequisites: CSC170 Introduction to Mobile Device Software Development

CSC315 INNOVATION AND DISRUPTIVE TECHNOLOGIES (4 CREDITS)
This course will explore the principles of technological innovation – specifically, how to identify, develop and introduce disruptive technologies. The course will also consider the impact of disruptive technologies on markets and the effects of environmental forces such as investors and competition on the success of innovation.

CSC320 SOFTWARE ENGINEERING METHODOLOGIES (4 CREDITS)
Software engineering methodologies that students may have experienced over the course of their project work are explored and compared in a more formal manner. Methodologies may include Rational Unified Process (RUP), Agile development, eXtreme Programming (XP), and others.

CSC322 SOFTWARE DESIGN IN UML (4 CREDITS)
This course presents the modeling language UML to students. Students will learn the basics of static and dynamic modeling in UML and how UML is applied to areas in software architecture, design and implementation.

CSC324 XML AND XSLT (4 CREDITS)
Students learn to design, populate, formalize and transform XML documents using other XML technologies. The course emphasizes XML schema definitions, document queries, and transforms technologies. The basics of programmatically interfacing with XML documents are also covered.

CS325 HUMAN COMPUTER INTERFACE DESIGN (4 CREDITS)
Principles and best practices are explored in areas such as navigation and flow, single page/screen layout, colors, GUI elements, multimedia presentation, response times, and usability analysis. Students will evaluate the effect that different technologies have on the design of a system's user interface and useful practices to neutralize deficiencies and take advantage of benefits.

CSC328 ENTERPRISE JAVABEANS (4 CREDITS)
Students build upon the knowledge gained from Introduction to Java EE Development Environment and broaden their knowledge base by learning new APIs. Students are also introduced to the Enterprise JavaBeans (EJB) technology and other enterprise services provided by the J2EE platform. Patterns applicable to the business tier will be discussed.
Prerequisites: CSC280 Introduction to Java EE Development Environment

CSC330 PROGRAMMING LANGUAGES (4 CREDITS)
Introduction to the broad field of programming languages. This course will explore implementation issues, the theoretical foundations of programming languages, the evolution of programming languages, as well as semantics and programming.
Prerequisites: CSC110 Introduction to Computer Science

CSC335 APPLICATIONS OF HUMAN COMPUTER INTERFACE DESIGN (4 CREDITS)
Students gain an in-depth understanding of traditional human-computer interaction paradigms. Through discussion and labs, students understand how those interaction techniques are employed or discarded in non-traditional computing environments such as touch-based interaction and small devices.
Prerequisite: CSC 250 Algorithms and Data Structures I

CSC340 COMPUTER ARCHITECTURE (4 CREDITS)
This course focuses on the function and design of the various components necessary to process information digitally. In includes discussions about hardware, software, assemblers, and operating systems and concentrates on the interface between hardware and software.
Prerequisites: CSC250 Algorithms and Data Structures I

CSC350 REPORT GENERATOR PROGRAMMING (4 CREDITS)
This course will introduce the RPG ILE programming language on the IBM Power i platform via tn5250 emulation (green screens). Focus will be on PDM and SEU interface programming with structured and free-form RPG, compiling, data definition, physical and logical files (indexing), SQL/400, stored procedures, triggers, batch vs. interactive jobs, data areas and queues, and debugging. A brief overview of power i development history and the code IDE will also be included. An overview of ILE activation groups and modularization with C, Java, and/or COBOL may also be included.
Prerequisites: ITH280 Introduction to Midrange Platforms

CSC360 .NET III: ADVANCED TOPICS (4 CREDITS)
This course introduces students to advanced topics in the .NET environment and to programming standards within that environment. Topics may include Windows desktop application development, multi-user application development using ASP.NET, ADO.NET, XML, and Web Services.
Prerequisites: CSC260 .NET II: Introduction to ASP .NET Web Development. Corequisite: PRO360 .NET III Project or PRO320 Developmental Project I

CSC365 BUILDING REUSABLE WEB COMPONENTS (4 CREDITS)
This class covers building reusable web controls, custom controls, databound controls, custom HTTP handlers, managing the context of the request, and caching information between requests. Students move from building simple web pages to creating a customizable HTTP handling environment.
Prerequisites: CSC260 Development in the .Net Environment II

CSC380 JAVA III: JAVA EE INTEGRATION STRATEGIES FOR SOA (4 CREDITS)
Students will leverage the knowledge they gained in CS280 to understand the fundamental options for Java persistence mapping, e.g., the Java Persistence API (JPA), Enterprise JavaBeans (EJB), Java Data Objects (JDO/Toplink/Kodo), Hibernate, etc., with an emphasis on strategy rather than the mechanics of implementation. The bulk of the course centers on the Java Web Services Developer Pack (JWSDP) and how its components facilitate service-oriented architecture (SOA) integration strategies. Students explore the core aspects of SOAP marshalling, WSDL, and HTTP message exchange. Students also gain practical experience with web service security strategies while mastering the essentials of the Java Secured Socket Extension (JSSE) and the Java Cryptography Extension (JCE). Students develop a leadership plan for corporate SOA adoption.
Prerequisites: CSC280 Java II, Corequisite: PRO380 Java III Project or PRO320 Developmental Project I

CSC385 DEVELOPMENT IN 3RD PARTY SYSTEMS (4 CREDITS)
Students learn the complexities and surrounding issues related to development within 3rd party systems and API. In addition to development in said systems, issues surrounding effective documentation, well-written help files, and best practices will be explored. Students will be exposed to live and fully functional 3rd party systems from the industry and will learn from the challenges introduced in such a scenario. In addition, students may be exposed to a new and unfamiliar programming language. (Note that students enrolled in this course will be required to pay a class fee.)
Prerequisites: CSC260 .NET II OR CSC280 Java II

CSC390 RATIONAL DEVELOPMENT TOOLS FOR I (4 CREDITS)
This course will introduce the websphere development studio client for power i (wdsc) and rational developer for system i (rdi), eclipse-based ides for power i programming in Java, RPG, CL, PHP, and Cobol—essentially rational-branded replacement toolsets for 5250-based PDM and SEU programming. Focus will be given to QSH, crtjvapgm, runjva, the integrated file system (ifs), edtf, Java toolkit for i (jtopen), and oltp integration topics such as drda and cics.

Rpgcgi and rpg server pages (rsp) are web development alternatives that may also be explored.
Prerequisites: CSC280 Java II: Introduction to the Java EE (may be taken concurrently)

CSC410 SOFTWARE ARCHITECTURES (4 CREDITS)
Students learn to design and evaluate a variety of software architectures that occur in small- and large-scale industry environments, to evaluate the needs of a software system at design time, and to apply the appropriate architectures which will best fit those needs. The course organizes discussion around three architectural perspectives of software integration and inter-process communication (IPC): stand-alone, client/server, and hosted. Topics may include service oriented architectures, component based architectures, producer-consumer architectures, and application layering, with a focus on reusable architecture frameworks.
Prerequisites: CSCS360 .NET III or CSC 380 Java III (may be taken concurrently), CSCS 322 Software Design in UML or instructor permission

CSC415 PATTERNS (4 CREDITS)
Students learn to recognize and implement patterns that occur frequently in software development and to identify how to apply them when maintaining or refactoring existing software. The course will focus on how to use patterns along with object-oriented programming techniques to create a good design for common programming problems.
Prerequisites: CSC250 Algorithms and Data Structures I

CSC420 BUILDING FEATURE RICH WEBSITES (4 CREDITS)
This course focuses on creating graphic-intense web applications through plug-ins. It also covers making websites customizable to user's needs via portal frameworks. Some time is also spent covering how active page frameworks function internally.
Prerequisites: CSC260 Development in the .NET Environment II

CSC425 CLIENT SERVER PROGRAMMING (4 CREDITS)
This course will introduce delphi/400, a client/server IDE for power i programming in object-pascal or PHP—essentially an alternative toolset for 5250-based pdm and Seu or wdsc/rdi programming. Focus will be given to object/400™ and systemsobjects™ components within the delphi/400 toolset, websphere application server on i, domino on i, and odbc access from other clients such as MS Office. Other client/server strategies and technologies will also be explored such as hit, appc, ftp remoting, rjs, hllapi screen scraping, etc.
Prerequisites: CSC280 Introduction to the Java EE Development Environment

CSC430 ENTERPRISE INTEGRATIONS WITH MOBILE DEVICES (4 CREDITS)
This course will extend the Java Micro Edition (Java ME) and Windows Mobile™ programming courses with enterprise integration strategies including tcp/ip framework usage for internet accessibility and interoperability.
Prerequisites: CSC288 Java Micro Edition; CSC268 Windows Mobile

DATABASE TECHNOLOGY

DBT130 RELATIONAL DATABASES I (4 CREDITS)
This course introduces students to database management systems with the emphasis on relational DBMSs. Students study the relational model of data, relational algebra, and basic SQL, as well as principles of data modeling and good database design. Students use modern relational database management systems (SQL Server and DB2) to apply their knowledge.

DBT230 RELATIONAL DATABASES II (4 CREDITS)
This course extends the previous work on relational database management systems. Topics include further aspects of data definition and data manipulation in SQL, including advanced SQL queries, triggers, and stored procedures. Students apply their knowledge using modern relational DBMSs (SQL Server and DB2).
Prerequisites: DBT130 Databases I

DBT330 MYSQL DATABASE CASE STUDY (4 CREDITS)
Students broaden their knowledge of relational databases through an extended case study of a major database management system: MySQL, which is the dominant DBMS in Open Source applications. Students learn the major components of a modern DBMS, how these can be defined and manipulated using SQL, the fundamental importance of transactions in databases, and how data can be interchanged between relational databases and other data sources. This course also prepares students for the MySQL MCA (MySQL Certified Associate) certification.
Prerequisites: DBT230 Relational Databases II

DBT331 MICROSOFT DATABASE CASE STUDY (4 CREDITS)
Students broaden their knowledge of relational databases through an extended case study of a major database management system: Microsoft's SQL Server. Students learn about installation and configuration of SQL Server, implementation of high availability solutions, supporting data consumers, maintaining databases, monitoring and troubleshooting performance, and creating and implementing database objects. This course also prepares students for the Microsoft "Technology Specialist in SQL Server" certification.
Prerequisites: DBT230 Relational Databases II

DBT332 IBM DATABASE CASE STUDY (4 CREDITS)
Students broaden their knowledge of relational databases through an extended case study of a major database management system: IBM's DB2 Universal Database. Students learn about the capabilities of the DB2 product family, security authorities and privileges, accessing servers and DB2 objects, working with DB2 data and objects, and isolation levels and concurrency. This course also prepares students for the IBM "Database Associate" certification.
Prerequisites: DBT230 Relational Databases II

DBT333 ORACLE DATABASE CASE STUDY (4 CREDITS)
Students broaden their knowledge of relational databases through an extended case study of a major database management system: Oracle, which is the leading commercial DBMS. Students learn about installing and configuring a DBMS, creating, backing up, and restoring databases, managing database resources, manipulating data, and per-

formance monitoring and tuning. This course also prepares students for the Oracle OCA (Oracle Certified Associate) certification.
Prerequisites: DBT230 Relational Databases II

DBT424 QUERYING XML DATA WITH XPATH AND XQUERY (4 CREDITS)
XML has become the standard approach for representing structured data in a form that can be transferred between computer systems. XML can be used to capture a wide range of information, from highly structured (such as tables of statistics) to relatively loosely structured (such as a book). This course provides students with the basic knowledge and skills required to extract meaningful information from XML documents of all kinds. The course is based on the XPath and XQuery languages defined by the World Wide Web Consortium (W3C).
Prerequisite: CSC 250 Algorithms and Data Structures I

DBT430 DATA WAREHOUSING AND BUSINESS INTELLIGENCE (4 CREDITS)
This course explores a number of topics in business intelligence systems, especially data warehousing. Students will learn the principles underlying efficient utilization of modern business intelligence systems, and apply these principles using the latest technologies provided by industrial DBMSs such as Microsoft's SQL Server and IBM's DB2. Students will learn how to integrate data from various sources, use controlled denormalization to design efficient data warehouses and data marts, analyze and mine data, and design appropriate reports.
Prerequisites: DBT230 (Relational Databases II) or equivalent

FINE ARTS AND COMMUNICATION

FAC101 ART APPRECIATION (2 CREDITS)
Students gain a basic understanding of the visual arts. Classic and electronic images are analyzed as well as structure and cultural frameworks.

FAC105 LEADERSHIP & PROBLEM SOLVING IN INDUSTRY (6 CREDITS)
This course introduces students to basics of leadership, business, communication, and decision-making in the business world, and specifically in areas of technology. Students will work collaboratively to develop an understanding of business problems and unique solutions. Students will learn to understand many elements of a problem, research the problem and potential solutions, and critically think through potential solutions.

FAC120 SPOKEN COMMUNICATIONS (3 CREDITS)
Students strengthen their oral presentation skills by exploring and applying appropriate techniques for preparing and delivering speeches. Students learn speech, composition, and delivery methods needed to give effective presentations for technical and non-technical audiences alike. Students gain a basic understanding of effective and ethical public speaking, as well as develop poise and confidence in delivering public presentations to a variety of audiences.

FAC125 COLLABORATIVE AND INTERPERSONAL COMMUNICATIONS I (2 CREDITS)
Students actively develop and apply necessary collaborative skills for successful interpersonal interactions and group work. Students learn and use principles related to interpersonal communications, group dynamics, leadership, and the collaborative group life-cycle. Students are not just exposed to knowledge in these domains, but develop practical skills that can be directly applied during their project work at Neumont University.
Corequisite: Pro160 .Net I Project or Pro180 Java I Project

FAC126 COLLABORATIVE AND INTERPERSONAL COMMUNICATIONS II (2 CREDITS)
Students advance their collaborative skills in order to effectively and efficiently work in collaborative groups. Building on the foundations established in the Collaborative and Interpersonal Communications I, students will learn and apply, in greater depth, effective interpersonal and group management skills. Students will focus on areas that relate to communications, decision-making, leadership, and conflict management.
Prerequisites: FAC125 Collaborative and Interpersonal Communications I

FAC140 ELEMENTS OF DESIGN (2 CREDITS)
This course will help students understand the basic principles of good design. Students will learn about elements of composition including line, form, texture, value, color, and shape. They will discuss and work to see how these elements interact with the principles of design: balance, movement, rhythm, emphasis, simplicity, contrast, proportion, space, and unity. Students will explore their creativity through these basic elements and principles.

FAC152 JAPANESE LANGUAGE AND CULTURE I (3 CREDITS)
Students develop basic skills in 4 areas of the Japanese language; speaking, listening, reading, and writing. The course includes lecture and hands-on language lab components.

FAC153 JAPANESE LANGUAGE AND CULTURE II (3 CREDITS)
This course builds on language skills taught in Japanese Language and Culture I. Students gain additional language skills in reading, writing, listening and speaking. Students also explore additional relevant cultural issues.
Prerequisites: FAC152 Japanese Language and Culture I

FAC156 CHINESE LANGUAGE AND CULTURE I (3 CREDITS)
This course teaches students the fundamentals of Chinese language and culture. Students gain basic language skills in reading, writing, listening and speaking that can be applied to social and business situations. Students will understand issues related to social and business culture in countries whose predominant language is Chinese.

FAC157 CHINESE LANGUAGE AND CULTURE II (3 CREDITS)
Lower - 3 days / week - 2 lecture / 1 lab
This course builds on language skills taught in Chinese Language and Culture I. Students will gain additional language skills in reading, writing, listening and speaking. Students will also explore additional relevant cultural issues.
Prerequisites: FAC156 Chinese Language and Culture I

FAC160 ARABIC LANGUAGE AND CULTURE I (3 CREDITS)
This course teaches students the fundamentals of Arabic language and culture. Students will gain basic language skills in reading, writing, listening and speaking that can be applied to social and business situations. Students will understand issues related to social and business culture in countries whose predominant language is Arabic.

FAC161 ARABIC LANGUAGE AND CULTURE II (3 CREDITS)
This course builds on language skills taught in Arabic Language and Culture I. Students will gain additional language skills in reading, writing, listening and speaking. Students will also explore additional relevant cultural issues.
Prerequisites: FAC160 Arabic Language and Culture I

FAC170 SPANISH LANGUAGE AND CULTURE I (3 CREDITS)
This course teaches students the fundamentals of Spanish language and culture. Students will gain basic language skills in reading, writing, listening and speaking that can be applied to social and business situations. Students will understand issues related to social and business culture in countries whose predominant language is Spanish.

FAC171 SPANISH LANGUAGE AND CULTURE II (3 CREDITS)
This course builds on language skills taught in Spanish Language and Culture I. Students will gain additional language skills in reading, writing, listening and speaking. Students will also explore additional relevant cultural issues.
Prerequisites: FAC170 Spanish Language and Culture I

FAC200 THEATER (2 CREDITS)
This course is designed to provide students a basic foundation for understanding theater and drama. They will learn theater history, acting, and analyzing productions.

FAC201 MUSIC APPRECIATION (2 CREDITS)
Students will be introduced to a range of music. They will develop skills in recognizing different components of music and styles.

FAC210 MUSIC COMPOSITION (2 CREDITS)
This course provides an overview of the songwriting and compositional creative process. A recital of performances of student compositions will be offered at the end of the semester and will be open to the public.

FAC240 PRODUCT DEVELOPMENT (3 CREDITS)
Introduces students to the basics of industrial design and product development. Students will look at how well-designed products can impact the quality and efficiency of our lives. Students will focus on the artistic elements as well as the usability of products. Students will also look at customer, market, and industry factors that impact the design, development, and success of a product.

FAC301 LEADERSHIP DEVELOPMENT (3 CREDITS)
This course permits students to examine various aspects of leadership and develop skills that will help them in future leadership positions. Included are discussions on human development and leadership theories, communication skills, small group dynamics, leadership strategies and styles, and the nature of power and influence.
Prerequisites: FAC125 Collaborative and Interpersonal Communications I

FAC320 CONFLICT RESOLUTION (2 CREDITS)
This course covers theories and practices of individual and group conflict resolution. This course will cover conflict analysis, sources of conflict, creating a safe environment, and ethical issues. Issues of gender, culture, and boundaries will also be discussed. Students will work to develop communication and listening skills that will aid in resolving conflict effectively.

HEALTH AND PHYSICAL EDUCATION

HPE160 PERSONAL FITNESS (2 CREDITS)
Students learn physical fitness skills essential to their health and well-being as computer professionals. This class is held at an off-site recreation center and requires students to demonstrate specific physical activity skills. Class size is limited.

HPE170 HEALTHY LIVING (2 CREDITS)
This course provides an individualized approach to physical fitness and good nutrition, involving critical thinking and problem solving for healthy living. Students learn about beneficial living patterns and how to make decisions that maximize mental, spiritual, physical and social well-being. Students write and engage in a personalized health plan.

HPE180 GOLF (2 CREDITS)
This course introduces students to the game of golf, including rules, etiquette, and skills such as swing, grip, chipping, putting, and pitching. This course will take place off-campus. (Note that students enrolled in this course will be required to pay a class fee.)

HPE190 STRENGTH TRAINING (2 CREDITS)
Students will learn effective strength training techniques. Students will work to increase strength of core and major muscle groups as a part of an overall health and fitness plan. Proper form and safety for strength training will be emphasized. (Note that students enrolled in this course will be required to pay a class fee.)

HUMANITIES

HUM110 LOGIC I (3 CREDITS)
This course provides an overview of logic emphasizing propositions, arguments, and definitions. Propositional logic including truth tables, truth trees, and natural deduction are discussed. Emphasis will be placed on analysis of arguments in natural language.

HUM120 MODERN LITERATURE (3 CREDITS)
This course explores information architecture, formulaic patterns, plot and story in fantasy and science fiction literature.

HUM121 ENGLISH COMPOSITION (3 CREDITS)
Students develop necessary writing skills to prepare them for college-level writing and to establish a solid foundation for business and technical communications. Students focus on key rhetorical concepts including purpose, audience, and contexts for writing,

as well as a range of genres used in college and workplace writing. Students explore effective writing processes, build awareness of writing conventions, and expand critical thinking, reading, and writing abilities.

HUM210 LOGIC II (3 CREDITS)
This course extends the propositional logic studied in Logic I to full first-order predicate logic, with an emphasis on logical evaluation of arguments expressed in natural language. First-order logic topics include translation, truth trees, deduction trees, sorted logic, identity, and modal operators. The course includes an overview of other logics.
Prerequisites: HUM110 Logic I

HUM220 INTRODUCTION TO PHILOSOPHY (2 CREDITS)
This course provides an overview of philosophy. Topics discussed include an introduction to metaphysics, epistemology, philosophy of science, and ethics (including ethics for software professionals).

HUM221 INTERMEDIATE ENGLISH COMPOSITION (2 CREDITS)
This course builds on the writing skills and knowledge gained in English Composition. Persuasive writing, rhetorical analysis and strategy, style and an understanding of formal argumentation, and critical thinking and analysis will be emphasized. Collaborative project management skills will be taught and used.
Prerequisites: HUM121 English Composition

HUM230 LINGUISTICS (3 CREDITS)
Students learn basic components of language in this introductory linguistics course. Students study human language and explore the grammatical structure and social function of language.

HUM240 JOURNALISM (3 CREDITS)
This course will focus on the basics of journalism and journalistic writing. Students will learn to evaluate mass media and news sources. They will understand the potential uses and impact of news media. The course will focus on reporting and writing. Students will build skills in interviewing, information gathering, and creating well-written, concise, and interesting news items. Students will learn to develop stories that are clear, accurate, and ethical.

HUM305 ETHICS (2 CREDITS)
Students will examine the concept of ethics and the basic principles underlying ethical practice. Students will explore research and literature on ethics and relate this information to decision-making in professional and civic arenas.

HUM310 CRITICAL THINKING (2 CREDITS)
Rational dialog and debating. Logical fallacies. Deduction vs. induction. Scientific method. Realistic analysis of arguments.

HUM321 TECHNICAL WRITING (3 CREDITS)
This course applies the skills and knowledge of writing gained in Intermediate English Composition to technical writing genres. Particular emphasis will be given to genres used in the Computer Science field such documentation, requirements documents, needs analysis, and feasibility studies. Critical thinking and problem solving will be a part of the criteria for good analysis and writing in course assignments.
Prerequisites: HUM121 English Composition

INFORMATION TECHNOLOGY

ITH205 IT FOUNDATIONS (4 CREDITS)
These courses provide an overview of several IT services to orient the student to systems management. The topics covered include an introduction to the terms and concepts of IT services and to services interconnections. The courses provide information on event, configuration, asset, performance, capacity, problem, change, security, network, storage, and business process management. The course features use cases to reinforce the lecture material. The prerequisites for this course are an understanding of information technology (IT) devices and categories.

ITH210 NETWORKING (4 CREDITS)
This class will provide students with a basic understanding of network communications. An in-depth study of the Internet Protocol (IP) and network stacks will familiarize students with topics such as: the physical network layer; MAC and IP Addresses; sub-networks; multicast and broadcast; TCP and UDP; and application-level protocols. Students will implement a client/server application (such as POP3, HTTP, SMTP, IM) using discussed technologies. The class may include overviews or tutorials of common programming language implementations of network technologies (such as .NET's System. Net namespace or Java's java.net Package).
Prerequisites: CSC260 .Net II: Introduction to ASP.Net Web development OR CSC280 Introduction to Java EE Development.

ITH220 SERVER ADMINISTRATION (4 CREDITS)
Learn to install, customize, and administer different servers and operating systems in a multiuser environment. This course is based on a number of servers and operating systems. Explore topics such as operating system prioritization and load balancing, and server load analytics.

ITH265 BUSINESS PROCESS MANAGEMENT (4 CREDITS)
Business Process Management provides an overview of the business and technological aspects of managing business processes focused to affect business impact and outcomes. The course will use an architectural method to teach how to determine business impacts of IT elements and map IT elements to a customer's critical business processes. The prerequisites for this course are an understanding of information technology (IT) devices and categories, and completion of Foundations in IT Services.
Prerequisites: ITH205 IT Foundations

ITH280 INTRODUCTION TO MIDRANGE PLATFORMS (4 CREDITS)
This course will introduce the IBM power midrange platform: i/os, aix, and Linux as well as the business role for power i in both the smb and lug customer bases. Focus will be on business value, tco, os operations, lpar configuration, navigation, cl programming, os

scripting, qsys.lib vs. Ifs, and i18n/l10n, i.e., global distribution of the platform. An overview of power I navigator will also be included.
Prerequisites: CSC105 Using Modern Operating Systems

ITH365 SERVICE ORIENTED ARCHITECTURE OVERVIEW (4 CREDITS)
The SOA overview course begins with an introduction to what business process and information technology IT architecture are and what functions business process and IT architects perform. The course then describes the concepts of service orientation to a business process or information technology. Components of Service Oriented Architecture are described including and Enterprise Service Bus (ESB), and service connection methods such as Extensible Markup Language. Additionally, concepts such as Component Business Modeling (CBM), Business Process Execution Language (BPEL), and Web Services Description Language (WSDL the XML-based language which provides the model for describing Web Services) are also introduced. The reusability of services, the primary goal of SOA, emerges as a common theme through supporting sessions in SOA tools, the SOA Lifecycle, SOA Standards, and SOA Reference Architectures. Prerequisites for the SOA overview course are a thorough understanding of IT categories and elements including database, software, middleware, and network; familiarity with IT services, business processes and techniques, and some understanding of project management. The SOA overview course is multi-disciplinary, bridging between business, business management, and technology.
Prerequisites: ITH265 Business Process Management

ITH465 IT ARCHITECTURE (4 CREDITS)
The IT Architecture overview course begins with an introduction to what information technology architecture is and what functions an IT architect performs in the context of a full product or solution life cycle. From that basis, the course explores several IT architecture components including architectural guiding principles, functional and non-functional requirements, and business and technology requirements. The course will introduce the concept of architectural building blocks, system context diagrams, and business-to-technology requirements translation. An underlying theme of architectural disciplines focuses on types of IT activities, such as application development, infrastructure computing platforms, networks, and security. The course concludes with discussion of architectural frameworks and reference architectures. Prerequisites for the IT architecture overview course are a thorough understanding of IT categories and elements including database, software, middleware, and network; familiarity with business processes and techniques; and some understanding of project management. The IT Architecture course is multi-disciplinary across IT landscapes and bridges between business, business management, and technology.
Prerequisites: ITH365 Service Oriented Architecture Overview

INFORMATION SECURITY

ITS220 HACKING, FORENSICS, AND COUNTERMEASURES (4 CREDITS)
Students will learn the ethical use of Information Security tools, tricks and procedures that are used in real world enterprises. Discussions will include how to protect systems and networks through the use of tools and expertise. Students will learn how a hacker would penetrate a system for exploit, how to use forensics analysis and procedures to catch criminals, and how to use countermeasures to protect vulnerable systems.
Prerequisites: ITH210 Networking

ITS320 SYSTEMS AND NETWORK SECURITY (4 CREDITS)
Students will learn networking and systems basics, designs, architecture and tools that are required for an enterprise to protect and defend hardware and software systems. Students learn how systems and networks play a role in today's public and private networks. In addition, a discussion will be presented, and hands-on labs will be used to show the use of Information Security tools in the creation, protection and management of systems and networks, including multiple platforms, operating systems and environments.
Prerequisites: ITH210 Networking

ITS380 AUDITING, GOVERNANCE, AND COMPLIANCE (4 CREDITS)
Students will understand the processes and procedures that are needed to protect a company's assets and how law enforcement, government agencies and auditors use tools to check and balance these protections against laws and requirements. The course will cover various information security standards of operation, protection and governance including legislation and existing case law around Information Security topics. Students will learn the very important role that information technology auditors take in a corporation and how they have an effect on their success or failure.

ITS410 DEVELOPING SECURE CODE (4 CREDITS)
Students will be taught the correct methods of incorporating secure code into software development projects and why it is important. Students will have the opportunity to learn about various platforms, languages and methods that are conducive to secure code development including .Net, Java and other technologies. They will understand the importance of thinking about security when creating software and not just features and functionality.
Prerequisites: CSC250 Algorithms and Data Structures I

MATH

MAT105 COLLEGE ALGEBRA (3 CREDITS)
This course introduces students to basic algebraic concepts. Students learn practical applications of algebraic concepts by finding solutions to appropriate applied problems. Topics include mathematical expressions, linear equations, functions and graphs, polynomials, exponents, and problem solving. This course provides foundational algebraic skills to succeed in subsequent math classes.

MAT110 SETS, PROBABILITY, AND NUMBER SYSTEMS (3 CREDITS)
Students are introduced to a variety of mathematical topics including basic set theory, practical applications in probability, and representation of numbers in floating point, binary, and other numeric representations.

MAT150 TRIGONOMETRY (3 CREDITS)
This introductory Trigonometry course explores functions and equations, polar coordinates, angles and triangles, similar triangles, inverse trigonometric functions, and laws of sines and cosines.

MAT210 LINEAR ALGEBRA (3 CREDITS)
This course gives students an opportunity to examine Linear Algebra and Geometry, Calculus and Planar/Solid Analytic Geometry.
Prerequisites: MAT110 Sets, Probability, and Number Systems

MAT250 CALCULUS (3 CREDITS)
This course examines several Calculus techniques including differentiation and integration.
Prerequisites: MAT150 Trigonometry

MAT260 STATISTICS (3 CREDITS)
Students will learn descriptive and inferential statistical methods with emphasis on sampling design, descriptive statistics, linear regression, and correlation. Other areas covered include probability, sampling distributions, hypothesis testing and confidence intervals.
Prerequisites: MAT110 Sets, Probability, and Number Systems

MAT305 PROBLEM SOLVING (3 CREDITS)
Students are introduced to a variety of problem solving techniques. Those techniques are applied to various mathematical topics including algebra, calculus and number theory. A programming project will be presented for solution.
Prerequisites: MAT250 Calculus

MAT320 NUMERICAL ANALYSIS (3 CREDITS)
This course introduces students to numerical analysis, direct and iterative methods of solving linear systems, optimization techniques, least squares methods, and numerical handling of ordinary and partial differential equations.
Prerequisites: MAT210 Linear Algebra

MAT410 DISCRETE STRUCTURES (3 CREDITS)
This course introduces students to the study of mathematics devoted to objects that are distinct or unconnected. Students will be exposed to problems which relate to logic, probability, and operations research. Discrete mathematics is a gateway and foundation for many other Computer Science courses including: algorithms, data structures, database theory, automata, formal languages, compiler theory, computer security, and operating systems.

MANAGEMENT

MGT210 PROJECT COST AND SCOPE MANAGEMENT (4 CREDITS)
This course provides an overview of project management, then focuses on project scope management and project cost management. Topics will include activities required to plan, tools to manage, and knowledge of deliverable documents for scope and cost, work breakdown structure (WBS), scope verification and scope control as well as project cost management principles, types of cost estimates, preparing a cost estimate and budget for a project and various techniques to measure the performance of a project to date.

MGT310 PROJECT SCHEDULE AND PERFORMANCE MANAGEMENT (4 CREDITS)
This course provides an overview of project management, then focuses on project schedule and performance management. Topics will include activity definition, activity sequencing, activity resource estimating, activity duration estimating, schedule development and schedule control.

MGT350 MGT. OF PROJECT TEAMS AND TEAM OPTIMIZATION (4 CREDITS)
This course provides an overview of project management, then focuses on management of project teams and the optimization of teams. Topics will include the definition of human resource management and its importance to a project, key concepts for managing people, human resource planning, project organizational charts, staff acquisition, team development and tools and techniques used to manage resources.

MGT410 QUALITY CONTROL, ASSURANCE, AND TESTING (4 CREDITS)
This course provides an overview of project management, then focuses on quality aspects of a software project. Topics will include what project quality management is and entails, how to plan for quality, the importance of quality assurance, the major tasks and outputs of quality process control, the tools used for quality control, how testing relates to quality control and assurance, and improving quality in software projects.

MODELING AND ANALYSIS

MOA140 INFORMATION MODELING I (4 CREDITS)
Students learn about modeling and querying an information system at the conceptual level and mapping between conceptual and logical (e.g. relational) levels. Object Role Modeling (ORM) is covered at an introductory level.

MOA235 INTRODUCTION TO MODEL DRIVEN DEVELOPMENT (4 CREDITS)
Students learn how to model business information needs and resources in the context of a business modeling framework. The course describes common business model elements including business rules, business objects, business processes, business narratives, business messages, business events and organizational units; and shows how these can form the basis for building software systems using languages such as UML.

MOA240 INFORMATION MODELING II (4 CREDITS)
This course builds on students' knowledge of information modeling. Object Role Modeling (ORM) and relational mapping are covered at an intermediate level. Class modeling in UML is included, as well as mapping from ORM to UML.
Prerequisites: MOA140 Information Modeling I

MOA335 BUSINESS MODELING AND SYSTEM DESIGN (3 CREDITS)
Students learn to apply concepts in modeling business information and methods for mapping business requirements onto technology realizations. Detailed coverage focuses mainly on the imple-

mentation of business objects, business processes and business rules. Students will learn how to use modern tools to facilitate the production of enterprise-scale applications.
Prerequisites: MOA235 Introduction to Model Driven Development

MOA440 ADVANCED INFORMATION MODELING (4 CREDITS)
This course covers further concepts in modeling business information and business rules. A selection will be made from topics such as Entity Relationship modeling, conceptual schema equivalence and optimization, reverse engineering and data migration, normalization and controlled denormalization, meta-modeling, conceptual query languages, mapping ORM to XML Schema, and model management.
Prerequisites: MOA240 Information Modeling II

MULTIMEDIA

MTM110 INTRODUCTION TO DIGITAL PHOTOGRAPHY (2 CREDITS)
This course provides an introduction to digital photography including graphic design and photographic editing. (Note that students enrolled in this course will be required to pay a class fee.)

MTM120 INTRODUCTION TO PHOTOSHOP (3 CREDITS)
This course introduces students to the basics of Adobe Photoshop CS. Students will work with Photoshop tools and features to create and edit digital imagery. Students will also learn the application of this software for web development. (Note that students enrolled in this course will be required to pay a class fee.)

MTM 130 INTRODUCTION TO DRAWING (3 CREDITS)
This is an introductory drawing course that covers basic drawing methods, media and concepts. This course emphasizes drawing from observation with development of relative value, negative/positive space and shape, composition, line, edge development, volumetric analysis of form, light and perspective. This class focuses on the drawing process and developing skills, as well as creating well-composed finished drawings.

MTM140 BASICS OF FILM (2 CREDITS)
This course introduces students to the art of film. Students will explore style, genre, period, and the cultural origin of films. The course will emphasize historical, theoretical, and current issues in film and their impact on current society. Students will also explore the elements of a successful film through careful analysis of various examples.

MTM220 GRAPHIC DESIGN (2 CREDITS)
Students actively develop and apply design and layout skills in order to complete a variety of design projects. Topics include basic principles of layout, typography, and digital imagery. The course will focus on how to create and combine these elements to successfully communicate ideas in a visually compelling manner. (Note that students enrolled in this course will be required to pay a class fee.)

MTM240 VIDEO FUNDAMENTALS (3 CREDITS)
This course will give students an introduction to the basics of shooting and editing digital video. Students will learn about composition in film and the elements of creating a visual story. Students will analyze films and other digital video to understand the art and aesthetics of film development and production. Students will complete short video projects throughout the quarter.

MTM282 INTRODUCTION TO FLASH DEVELOPMENT (4 CREDITS)
Students learn fundamentals of drawing in Flash, basic animation, Actionscript 1.0, and 2.0, Flash data communication, also how to work with video and bitmaps in Flash. (Note that students enrolled in this course will be required to pay a class fee.)

MTM312 MULTIMEDIA, GAME AND ENTERTAINMENT SYSTEMS (4 CREDITS)
Students learn fundamentals of computer graphics, content integration, AI concepts, and industry practices, standards, and tools in multimedia, game and entertainment systems. An analysis of the difference between a business application and a gaming application in all phases of the software lifecycle will be discussed. (Note that students enrolled in this course will be required to pay a class fee.)
Prerequisites: CSC260 .NET II OR CSC280 Java II

MTM316 ADVANCED FLASH (4 CREDITS)
This course helps students develop a solid understanding of programmatically controlling a Flash movie with Actionscript. Students will become familiar with Actionscript by learning how to work with the Flash Drawing API, animating with Actionscript, posting form data, working with Flash Components, controlling Actionscript through the use of control structures and loops and loading information from XML. (Note that students enrolled in this course will be required to pay a class fee.)
Prerequisites: MTM282 Introduction to Flash Development

MTM355 DIGITAL DESIGN (3 CREDITS)
This course is designed to increase the student's ability to creatively design within the digital domain. Major topics include: essentials for successful digital design, color and color accuracy in the digital world, symmetric and asymmetric layout techniques, creative use of shapes and space, large file management techniques, theoretical and applied typography, professional production methods to increase workflow, and stereographic imagery.
Recommended: Basic Photoshop Knowledge.

MTM380 CREATIVE WRITING AND STORYBOARDING (3 CREDITS)
Students explore the art of creative writing specifically as it relates to storyboarding and video game development. Time is spent developing, observing, interpreting and expressing the skill. The central focus throughout the course will be on unearthing a unique and personal voice and relaying that to an alternative reality as seen in video games. Students will experiment with critical reading and thinking about creative writing through written and oral exercises.

MTM412 ADVANCED ENTERTAINMENT SYSTEMS (4 CREDITS)
Students will explore development of higher end entertainment systems. Topics will include 3D animation, sound effects, advanced particle effects, network programming, etc. Students will explore

concepts involved in creation of a large scale video game from concept to realization. Students will develop critical vocabulary with which to discuss the elements and craft of creative writing, become familiar with different genres of creative writing, explore and analyze the communication of meaning through writing, and produce a portfolio of original work.

PHYSICAL & BIOLOGICAL SCIENCE

PSC115 INTRODUCTION TO BIOLOGY (3 CREDITS)
This course is designed to introduce students to the fundamentals of biology including cell structure, basic chemistry as applied to photosynthesis, cellular respiration, genetics, and natural selection. Students will also explore the basic similarities and differences between plant and animal systems. Laboratory exercises will give students a hands-on opportunity to critically examine and investigate the biological processes of cell structure, energy, heredity, reproduction, and other fundamental aspects of biology.

PSC201 ASTRONOMY (2 CREDITS)
This course provides a basic introduction to the science of astronomy. Students will gain critical thinking skills as they assess the origins and evolution of our galaxy, understand stellar structure and life cycles, and gain an orientation to the night sky. Students will also examine recent advances such as the discovery of black holes.

PSC210 ENVIRONMENTAL STUDIES (2 CREDITS)
This course introduces students to the field of environmental engineering. Students study environmental and ecological systems and perform quantitative and qualitative analyses of environmental problems. Environmental legislation is also discussed.

PSC220 INTRODUCTION TO PHYSICS (3 CREDITS)
This course provides an introduction to basic physics concepts. Students will examine such principles as kinematics in one and two dimensions, forces, dynamics of uniform circular motion, waves and sound, and the principle of linear superposition.

PSC230 INTRODUCTION TO CHEMISTRY (3 CREDITS)
This course introduces the fundamentals of chemistry utilizing a virtual laboratory environment. Students will develop analytical thinking skills as they perform virtual experiments and then examine and report their findings. Topics covered will include: past and present views of atomic structure, naming compounds, balancing chemical equations, the ideal gas law, acid-base chemistry, and other basics of inorganic chemistry.
Prerequisites: MAT105 College Algebra or equivalent

PROJECTS

PRO160 .NET I PROJECT (2 CREDITS)
Students work in teams on software development projects. The projects provide experience with various phases of software development, give students opportunities to perform a variety of roles on software development teams, strengthen and integrate students' existing skills, and provide motivation for the acquisition of new skills. The project role and learning goals for each student are individualized in line with their knowledge base and growth focus. Projects may include interaction and/or collaboration with external clients and other stakeholders.
Corequisite: CSC160 Development in the .Net Environment I

PRO180 JAVA I PROJECT (2 CREDITS)
Students work in teams on software development projects. The projects provide experience with various phases of software development, give students opportunities to perform a variety of roles on software development teams, strengthen and integrate students' existing skills, and provide motivation for the acquisition of new skills. The project role and learning goals for each student are individualized in line with their knowledge base and growth focus. Projects may include interaction and/or collaboration with external clients and other stakeholders.
Corequisite: CSC180 Introduction to Java Development

PRO260 .NET II PROJECT (2 CREDITS)
Students work in teams on software development projects. The projects provide experience with various phases of software development, give students opportunities to perform a variety of roles on software development teams, strengthen and integrate students' existing skills, and provide motivation for the acquisition of new skills. The project role and learning goals for each student are individualized in line with their knowledge base and growth focus. Projects may include interaction and/or collaboration with external clients and other stakeholders.
Corequisite: CSC260 Development in the .Net Environment II

PRO280 JAVA II PROJECT (2 CREDITS)
Students work in teams on software development projects. The projects provide experience with various phases of software development, give students opportunities to perform a variety of roles on software development teams, strengthen and integrate students' existing skills, and provide motivation for the acquisition of new skills. The project role and learning goals for each student are individualized in line with their knowledge base and growth focus. Projects may include interaction and/or collaboration with external clients and other stakeholders.
Corequisite: CSC280 Introduction to Java EE Development Environment

PRO320 DEVELOPMENTAL PROJECT I (4.5 CREDITS)
Students work in teams on various projects associated with the specialization disciplines chosen by students. The projects provide experience unique to the concentrations and give students opportunities to perform and develop each of their skill sets in a chosen discipline. These projects strengthen and integrate students' existing skills, and provide motivation for the acquisition of new skills. The project role and learning goals for each student are individualized in line with their knowledge base and growth focus. Projects may include interaction and/or collaboration with external clients and other stakeholders
Corequisite: Varies based on concentration(s) chosen

PRO340 DEVELOPMENTAL PROJECT II (4.5 CREDITS)
Students work in teams on various projects associated with the specialization disciplines chosen by students. The projects provide

experience unique to the specializations and give students opportunities to perform and develop each of their skill sets in a chosen discipline. These projects strengthen and integrate students' existing skills, and provide motivation for the acquisition of new skills. The project role and learning goals for each student are individualized in line with their knowledge base and growth focus. Projects may include interaction and/or collaboration with external clients and other stakeholders.

Prerequisites: Previous corresponding project course

PRO360 .NET III PROJECT (4.5 CREDITS)

Students work in teams on software development projects using the .Net development environment. The projects provide experience with various phases of software development, give students opportunities to perform a variety of roles on software development teams, strengthen and integrate their existing skills, and provide motivation for the acquisition of new skills. The project role and learning goals are individualized in line with each student's knowledge base and growth focus. Projects may include interaction and/or collaboration with external clients and other stakeholders.

Corequisite: CSC360 .Net III: Advanced Topics

PRO380 JAVA III PROJECT (4.5 CREDITS)

Students work in teams on software development projects. The projects provide experience with various phases of software development, give students opportunities to perform a variety of roles on software development teams, strengthen and integrate students' existing skills, and provide motivation for the acquisition of new skills. The project role and learning goals for each student are individualized in line with his or her knowledge base and growth focus. Projects may include interaction and/or collaboration with external clients and other stakeholders.

Corequisite: CSC380 Java EE Integration Strategies for Service Oriented Architectures

PRO420 DEVELOPMENTAL PROJECT III (4.5 CREDITS)

Students work in teams on various projects associated with the specialization disciplines chosen by students. The projects provide experience unique to the specializations and give each student opportunities to perform and develop each of his/her skill sets in a chosen discipline. These projects strengthen and integrate students' existing skills, and provide motivation for the acquisition of new skills. The project role and learning goals for each student are individualized in line with their knowledge base and growth focus. Projects may include interaction and/or collaboration with external clients and other stakeholders.

Prerequisites: Previous corresponding project course

PRO490 ENTERPRISE PROJECTS I (6.5 CREDITS)

Students spend 20 hours per week working as part of a team to provide solutions to real clients. Enterprise projects are designed to give students experience working on projects similar to ones they may encounter upon graduation. Placement on some projects may be competitive and may require mastery of a set of competencies.

Prerequisites: CSC250 Algorithms and Data Structures I; BUS299 Professional Preparation AND enrollment requires Instructor permission.

PRO491 ENTERPRISE PROJECTS II (6.5 CREDITS)

Students spend 20 hours per week working as part of a team to provide solutions to real clients. Enterprise projects are designed to give students experience working on projects similar to ones they may encounter upon graduation. Placement on some projects may be competitive and may require mastery of a set of competencies.

Prerequisites: PRO490 Enterprise Projects I

PRO492 ENTERPRISE PROJECTS III (6.5 CREDITS)

Students spend 20 hours per week working as part of a team to provide solutions to real clients. Enterprise projects are designed to give students experience working on projects similar to ones they may encounter upon graduation. Placement on some projects may be competitive and may require mastery of a set of competencies.

Prerequisites: PRO490 Enterprise Projects I

PRO495 ENTERPRISE PROJECTS IV (9 CREDITS)

Students spend 30 hours per week working as part of a team to provide solutions to real clients. Enterprise projects are designed to give students experience working on projects similar to ones they may encounter upon graduation. Placement on some projects may be competitive and may require mastery of a set of competencies.

Prerequisites: CSC250 Algorithms and Data Structures; BUS299 Career Preparation AND enrollment requires Instructor permission.

PRO499 ENTERPRISE PROJECTS V (12 CREDITS)

Students spend 40 hours per week working as part of a team to provide solutions to real clients. Enterprise projects are designed to give students experience working on projects similar to ones they may encounter upon graduation. Placement on some projects may be competitive and may require mastery of a set of competencies.

Prerequisites: CSC250 Algorithms and Data Structures I; BUS299 Career Preparation AND enrollment requires Instructor permission.

ROBOTICS

RBT326 INTELLIGENT SYSTEMS (4 CREDITS)

Students learn a range of techniques that can be used to add 'intelligent' behavior to information systems. The course outlines the broad historical and philosophical context of Artificial Intelligence, but the primary focus is on understanding how to utilize techniques of proven value in modern industrial and commercial applications. Topics include Knowledge Representation and its automation, algorithms for searching large problem spaces, and techniques for making systems more reactive to their environment.

SOCIAL SCIENCE

SSC120 MAPPING AND GEOSPATIAL INFORMATION (3 CREDITS)

Students examine in a hands-on approach to spatial analysis related to physical and cultural geography.

SSC140 INTRODUCTION TO SOCIAL HISTORY (2 CREDITS)
Students investigate the principles, concepts, and methods of analysis used in the study of the social history of persons and places, first through the history of the American family from Native Americans and European colonists to the present. Students examine historical perspectives on the relationships within families, the history of childhood, and the changing role of the family over time. Study will include all relevant ethnic and cultural groups.

SSC215 GLOBALIZATION AND INTERNATIONAL RELATIONS IN THE INTERNET AGE (2 CREDITS)
How do people, goods and services flow across national boundaries? Students examine the history, theory and policy of globalization and international relations during the internet age. Macro and micro (enterprise) viewpoints are explored and discussed.

SSC230 WORLD CULTURES (3 CREDITS)
This course gives students an introductory view of the diversity of world cultures. Students will examine selected world cultures in depth.

SSC240 SOCIAL PSYCHOLOGY (3 CREDITS)
This course explores social behavior by the individual in the group. This includes action, interaction, dependency and interdependency as well as sensations, anticipation and adaptation.

SSC271 AMERICAN GOVERNMENT (3 CREDITS)
This course will introduce students to the American governmental system. Students should develop a working understanding of government institutions, political processes, and political behavior. This course will delve into the workings of the three branches of the national government and the role it plays in American society. This class will also discuss civil liberties and civil rights.

SSC310 AMERICAN LEGAL SYSTEM (2 CREDITS)
This course provides students with a fundamental overview of the American legal system. An understanding of the law is important to an understanding of the values of American society; this study is essential to the development of students' sense of justice and responsible judgement. This course is intended to help students understand "law" as a process of restoring, maintaining, and creating social order whose functions are to resolve disputes, facilitate and protect agreement, and constantly examine the legal concepts of a society through maintaining continuity and consistency. The student is expected to develop an analytical and logical understanding of legal principles as opposed to mere memorization of legal rules as they relate to American public policy, constitutional rights, and contractual obligations.

SSC315 CULTURE, KNOWLEDGE AND SOCIETY (3 CREDITS)
All societies have been "knowledge societies" and the culture of a society predicated on the transmission of knowledge in accordance with procedures prescribed by tradition, often belonged to the realm of privilege. The Information Society we live in has seen an explosive and unprecedented growth in the codification of theoretical knowledge. Based on several historical and current trends, this course will explain and exemplify the interdependence between culture, society and knowledge.

SSC320 GROUP DYNAMICS (3 CREDITS)
This course provides a comprehensive examination of the forces that drive the formation and activities of groups. Students will have an opportunity to investigate in-depth the principles and concepts related to group structure and lifecycle, influence and power, constructive conflict, productivity, decision-making, leadership, intergroup relations, and large group behavior. Students will learn best practices for participating in and leading groups.
Prerequisites: FAC125 Collaborative and Interpersonal Communications I

SSC350 INTELLECTUAL PROPERTY (2 CREDITS)
This course provides an overview of the intellectual property laws of the United States. The purpose of the course is to give students an understanding of copyright, patent, trademark, and trade secret law, and how those laws fit into their vocational field.

TRANSITIONAL PROJECT COURSES*

CS190 FOUNDATIONAL PROJECTS I – JAVA SE (6.5 CREDITS)
Students work in teams on software development projects. The projects provide experience with various phases of software development, give students opportunities to perform a variety of roles on software development teams, strengthen and integrate students' existing skills, and provide motivation for the acquisition of new skills. The project role and learning goals for each student are individualized in line with their knowledge base and growth focus. Projects may include interaction and/or collaboration with external clients and other stakeholders.
Prerequisites: CS120 Topics in Software Development

CS192 FOUNDATIONAL PROJECTS II - .NET WIN FORMS (6.5 CREDITS)
Students work in teams on software development projects. The projects provide experience with various phases of software development, give students opportunities to perform a variety of roles on software development teams, strengthen and integrate students' existing skills, and provide motivation for the acquisition of new skills. The project role and learning goals for each student are individualized in line with their knowledge base and growth focus. Projects may include interaction and/or collaboration with external clients and other stakeholders.
Prerequisites: CS190 Foundational Projects I – Java SE

CS194 FOUNDATIONAL PROJECTS III – JAVA EE (6.5 CREDITS)
Students work in teams on software development projects. The projects provide experience with various phases of software development, give students opportunities to perform a variety of roles on software development teams, strengthen and integrate students' existing skills, and provide motivation for the acquisition of new skills. The project role and learning goals for each student are individualized in line with their knowledge base and growth focus. Projects may include interaction and/or collaboration with external clients and other stakeholders.
Prerequisites: CS192 Foundational Projects II - .NET Win Forms

CS290 FOUNDATIONAL PROJECTS IV- .NET WEB FORMS (6.5 CREDITS)

Students work in teams on software development projects. The projects provide experience with various phases of software development, give students opportunities to perform a variety of roles on software development teams, strengthen and integrate students' existing skills, and provide motivation for the acquisition of new skills. The project role and learning goals for each student are individualized in line with their knowledge base and growth focus. Projects may include interaction and/or collaboration with external clients and other stakeholders.

Prerequisites: CS194 Foundational Projects III – Java EE

CS390 DEVELOPMENTAL PROJECTS I – INFO MODELING (6.5 CREDITS)

Students work in teams on software development projects. The projects provide experience with various phases of software development, give students opportunities to perform a variety of roles on software development teams, strengthen and integrate students' existing skills, and provide motivation for the acquisition of new skills. The project role and learning goals for each student are individualized in line with their knowledge base and growth focus. Projects may include interaction and/or collaboration with external clients and other stakeholders.

Prerequisites: CS194 Foundational Projects III – Java EE; Instructor Approval

CS391 DEVELOPMENTAL PROJECTS I – JAVA (6.5 CREDITS)

Students work in teams on software development projects. The projects provide experience with various phases of software development, give students opportunities to perform a variety of roles on software development teams, strengthen and integrate students' existing skills, and provide motivation for the acquisition of new skills. The project role and learning goals for each student are individualized in line with their knowledge base and growth focus. Projects may include interaction and/or collaboration with external clients and other stakeholders.

Prerequisites: CS194 Foundational Projects III – Java EE; Instructor approval

CS392 DEVELOPMENTAL PROJECTS I – OPEN SOURCE (6.5 CREDITS)

Students work in teams on software development projects. The projects provide experience with various phases of software development, give students opportunities to perform a variety of roles on software development teams, strengthen and integrate students' existing skills, and provide motivation for the acquisition of new skills. The project role and learning goals for each student are individualized in line with their knowledge base and growth focus. Projects may include interaction and/or collaboration with external clients and other stakeholders.

Prerequisites: CS194 Foundational Projects III – Java EE; Instructor Approval

CS393 DEVELOPMENTAL PROJECTS I - .NET (6.5 CREDITS)

Students work in teams on software development projects. The projects provide experience with various phases of software development, give students opportunities to perform a variety of roles on software development teams, strengthen and integrate students' existing skills, and provide motivation for the acquisition of new skills. The project role and learning goals for each student are individualized in line with their knowledge base and growth focus. Projects may include interaction and/or collaboration with external clients and other stakeholders.

Prerequisites: CS290 Foundational Projects IV – .Net Web Forms; Instructor approval

CS395 DEVELOPMENTAL PROJECTS II – INFO MODELING (6.5 CREDITS)

Students work in teams on software development projects. The projects provide experience with various phases of software development, give students opportunities to perform a variety of roles on software development teams, strengthen and integrate students' existing skills, and provide motivation for the acquisition of new skills. The project role and learning goals for each student are individualized in line with their knowledge base and growth focus. Projects may include interaction and/or collaboration with external clients and other stakeholders.

Prerequisites: CS390 Developmental Projects I – Info Modeling; Instructor & Dean approval

CS396 DEVELOPMENTAL PROJECTS II – JAVA (6.5 CREDITS)

Students work in teams on software development projects. The projects provide experience with various phases of software development, give students opportunities to perform a variety of roles on software development teams, strengthen and integrate students' existing skills, and provide motivation for the acquisition of new skills. The project role and learning goals for each student are individualized in line with their knowledge base and growth focus. Projects may include interaction and/or collaboration with external clients and other stakeholders.

Prerequisites: CS391 Developmental Projects I – Java; Instructor & Dean approval

CS397 DEVELOPMENTAL PROJECTS II – OPEN SOURCE (6.5 CREDITS)

Students work in teams on software development projects. The projects provide experience with various phases of software development, give students opportunities to perform a variety of roles on software development teams, strengthen and integrate students' existing skills, and provide motivation for the acquisition of new skills. The project role and learning goals for each student are individualized in line with their knowledge base and growth focus. Projects may include interaction and/or collaboration with external clients and other stakeholders.

Prerequisites: CS392 Developmental Projects I – Open Source; Instructor & Dean approval

CS398 DEVELOPMENTAL PROJECTS II – .NET (6.5 CREDITS)

Students work in teams on software development projects. The projects provide experience with various phases of software development, give students opportunities to perform a variety of roles on software development teams, strengthen and integrate students' existing skills, and provide motivation for the acquisition of new skills. The project role and learning goals for each student are individualized in line with their knowledge base and growth focus. Projects may include interaction and/or collaboration with external clients and other stakeholders.

Prerequisites: CS393 Developmental Projects I – .NET; Instructor & Dean approval

CS495 DEVELOPMENTAL PROJECTS III – INFO MODELING (6.5 CREDITS)

Students work in teams on software development projects. The projects provide experience with various phases of software development, give students opportunities to perform a variety of roles on software development teams, strengthen and integrate students' existing skills, and provide motivation for the acquisition of new skills. The project role and learning goals for each student are individualized in line with their knowledge base and growth focus. Projects may include interaction and/or collaboration with external clients and other stakeholders.

Prerequisites: CS395 Developmental Projects II – Info Modeling; Instructor & Dean approval

CS496 DEVELOPMENTAL PROJECTS III – JAVA (6.5 CREDITS)

Students work in teams on software development projects. The projects provide experience with various phases of software development, give students opportunities to perform a variety of roles on software development teams, strengthen and integrate students' existing skills, and provide motivation for the acquisition of new skills. The project role and learning goals for each student are individualized in line with their knowledge base and growth focus. Projects may include interaction and/or collaboration with external clients and other stakeholders.

Prerequisites: CS396 Developmental Projects II-Java; Instructor & Dean approval

CS497 DEVELOPMENTAL PROJECTS III – OPEN SOURCE (6.5 CREDITS)

Students work in teams on software development projects. The projects provide experience with various phases of software development, give students opportunities to perform a variety of roles on software development teams, strengthen and integrate students' existing skills, and provide motivation for the acquisition of new skills. The project role and learning goals for each student are individualized in line with their knowledge base and growth focus. Projects may include interaction and/or collaboration with external clients and other stakeholders.

Prerequisites: CS397 Developmental Projects II – Open Source; Instructor & Dean approval

CS498 DEVELOPMENTAL PROJECTS III – .NET (6.5 CREDITS)

Students work in teams on software development projects. The projects provide experience with various phases of software development, give students opportunities to perform a variety of roles on software development teams, strengthen and integrate students' existing skills, and provide motivation for the acquisition of new skills. The project role and learning goals for each student are individualized in line with their knowledge base and growth focus. Projects may include interaction and/or collaboration with external clients and other stakeholders.

Prerequisites: CS398 Developmental Projects II – .NET; Instructor & Dean approval

**These courses are being phased out and will only be available to students enrolled in the program prior to October 14, 2008*

GRADUATE PROGRAMS_

ADMISSIONS_

Neumont University's Acceptance Committee evaluates students' potential to succeed in the Master of Science in Computer Science program by evaluating academic potential, work experience, and student motivation.

To apply for admittance to Neumont University the prospective student submits the following documents for review by the Acceptance Committee:

- Application
- Proof of Bachelors Degree (official transcripts)
- Evidence of academic performance, such as GMAT scores or college transcripts

The Acceptance Committee reviews each application and evaluates the applicant in the following ways:

- Academic potential is determined by looking at college transcripts and/or GMAT scores, if available.
- Work experience is evaluated by looking at the application as well as any letters of recommendation.
- Student motivation can be evaluated by looking at the student questionnaire along with transcripts and any letters of recommendation.

As part of the admissions process prospective MSCS students will also have an interview with one or more members of the MSCS faculty.

INTERNATIONAL APPLICANTS

Neumont University is authorized under federal law to enroll non-immigrant students. An international application for admission is considered complete and ready for review when the documents and records have been received. Documents include a completed application signed, dated, and accompanied by a non-refundable international student application fee of $125. This fee must be drawn from a U.S. bank account, be an international money order, or be paid by credit card.

In order to satisfy the general admissions requirements listed above, foreign educational documents, including proof of high school graduation or its equivalent, (if the institution attended was not a U.S. institution) must be evaluated by a credential evaluation service that is a member of NACES at the applicant's own expense. For a complete list of NACES credential evaluation services visit www.naces.org.

Applicants will need to authorize the credential evaluation company to send documents directly to Neumont University after evaluation. Students must obtain approval from the Office of the Registrar for any credential evaluation.

Contact the Registrar's office for a list of authorized evaluation companies.

Proven English language proficiency is required if English is not the applicant's first language. The preferable method of proving English proficiency is official test results of the TOEFL (Test of English as a Foreign Language). Applicants with TOEFL scores of 550+ (213+ computer-based score) will be considered for admission. In addition to or in place of the TOEFL exam, the University, at its discretion, may require students to complete a telephone interview in English.

Official test results of the SAT or ACT are recommended.

Once these documents are complete, the application will be submitted for review. Admitted applicants will then need to provide the following:

An official bank statement from the bank (not just a receipt) showing sufficient funds to cover expenses for a calendar year of attendance at Neumont University. Please contact your admissions representative for the current dollar amount. F-1 students are required to provide proof of additional funds for each F-2 dependent. If the applicant has a sponsor, the sponsor will need to complete the affidavit of support. Scholarship money can be applied toward the certifying amount.

All international students who are currently studying in the United States on an F-1 student visa and who are transferring from another U.S. institution are required to submit a Transfer Eligibility Form prior to the issuing of the new I-20.

All international student scholarships are contingent on meeting I-9 eligibility requirements and lawful F-1 status. Admitted, eligible students will be issued an I-20 form from Neumont University.

TRANSFER STUDENTS

Neumont University may award transfer credit for courses that meet our evaluation criteria from an institution accredited by an agency recognized by the U.S. Department of Education. Courses taken at a foreign institution will be accepted for transfer on the basis of the report of a credential evaluation service.

For courses to be considered for transfer credit, a student must request a transfer credit review from the Office of the Registrar and submit official transcripts and course descriptions from the time period when the courses were taken. Transfer credit requests should be made within the first quarter of attendance at Neumont University.

Credit will be accepted only for courses in which a grade of 'C' or higher was earned. The number of credits awarded for a course will not exceed the number of credits offered for the related Neumont University course.

Students may not transfer more than 10 credits toward their graduate degree.

GRADUATE CERTIFICATE IN COMPUTER SCIENCE_

OVERVIEW

The Graduate Certificate is designed for students who already have a Bachelor degree in another field and want to acquire a background in Computer Science. Students can use this program as a springboard to enter the computer employment market, to learn Computer Science skills for use in their present field, or to satisfy prerequisites for graduate study in computer science. The program is designed for working professionals. Most classes will be offered in the evening and the certificate can be completed in as little as four quarters.

Students entering the Graduate Certificate Program can choose elective courses which may make them eligible for acceptance into the Neumont University Master of Science in Computer Science degree program. Students may choose to take elective credits leading to a deep, fundamental Computer Science background or choose to take courses specific to a particular technology such as .Net or Java.

Coupled with a previously earned accredited Bachelor degree, students earning a Graduate Certificate in Computer Science will possess a skill set that allows them to adapt easily to varying computer careers or allow for an entry level career in software development.

PROGRAM OBJECTIVES

Each student will receive a Graduate Certificate in Computer Science and is expected to understand, progress, and improve in each of the following:

- Understand the basics of computer programming
- Understand and employ a variety of algorithms and data structures
- Be introduced to computer architectures
- Understand information modeling and its value to business
- Understand and utilize databases in various business environments
- Become effective problem solvers and critical thinkers

PROGRAM REQUIREMENTS

To receive a Graduate Certificate in Computer Science, students are required to accomplish the following:

- Complete a minimum of 30 quarter credit hours with an average grade of 'C' (Cumulative Grade Point Average of 2.0) or higher for all work taken at the University
- Complete at least 22 credit hours in required Computer Science courses
- Complete a minimum of 8 elective credits from courses in Concentration areas
- Abide by all University rules and regulations
- Must earn a minimum of 'C' in each required course
- In order to advance to a course with a prerequisite the student must earn a minimum of 'C' in the prerequisite course, or receive permission from the Provost.

TRANSFER CREDITS

Candidates for the Graduate Certificate must complete at least four of the courses needed for the certificate in residency at Neumont. Prior approval from the Office of the Registrar is required for all requested transfer credits.

GRADUATE CERTIFICATION REQUIREMENTS

(minimum of 30 credits required)

CSC150	Object Oriented Programming	6 credits
CSC250	Algorithms and Data Structures I	4 credits
CSC340	Computer Architecture	4 credits
DBT130	Database I	4 credits
MOA140	Information Modeling I	4 credits
Computer Science Electives (2 courses required)		8 credits

TOTAL REQUIREMENTS FOR GRADUATE CERTIFICATE IN COMPUTER SCIENCE **30 CREDITS**

MASTER OF SCIENCE IN COMPUTER SCIENCE_

Master of Science in Computer Science (MSCS) students are expected to have successfully completed the Neumont University BSCS program or an approved equivalent. Additional criteria may apply to certain courses that provide advanced coverage of certain areas. Students who do not meet these criteria will be required to complete any prerequisite courses before taking the graduate courses in those areas.

PROGRAM OBJECTIVES

- Design System Architectures
- Employ established and emerging software standards
- Model and develop information systems
- Develop applications with a variety of deployment mechanisms
- Understand software development in the context of business
- Perform an effective review of the literature in a given field
- Write technical papers to a professional standard

PROGRAM DETAILS

To make the program available to the maximum number of students, it is offered on a full-time, half-time, and part-time basis. The program also offers some flexibility (under faculty advisement) in the ratio of Lecture/Lab courses to project work.

Students must complete a minimum of 54 quarter credit hours, with an average cumulative GPA of 3.0 or higher, in order to be eligible for graduation.

MSCS PROGRAM PLAN

REQUIRED LECTURE/LAB COURSES	**12 CREDITS**
(3 required courses)	
REQUIRED SEMINAR COURSES	**6 CREDITS**
ELECTIVE COURSES	**18 CREDITS**
REQUIRED RESEARCH PROJECTS	**18 CREDITS**
TOTAL REQUIRED FOR MS IN COMPUTER SCIENCE	**54 CREDITS**

LECTURE/LAB COURSES **12 CREDITS REQUIRED**

Select three courses from the list below:

CSC520	Enterprise Architecture	4 credits
CSC560	Process and Data Patterns	4 credits
DBT530	Data Warehousing and Business Intelligence	4 credits
MOA535	Business Modeling and System Design	4 credits
MOA540	Advanced Information Modeling	4 credits
MOA542	Advanced Modeling Topics I	4 credits

SEMINAR COURSES **6 CREDITS REQUIRED**

CSC581	Advanced Computing Seminars - 1	1.5 credits
CSC582	Advanced Computing Seminars - 2	1.5 credits
CSC583	Advanced Computing Seminars - 3	1.5 credits
CSC584	Advanced Computing Seminars - 4	1.5 credits
CSC585	Advanced Computing Seminars - 5	1.5 credits
CSC586	Advanced Computing Seminars - 6	1.5 credits
CSC587	Advanced Computing Seminars - 7	1.5 credits
CSC588	Advanced Computing Seminars - 8	1.5 credits

ELECTIVE COURSES **18 CREDITS REQUIRED**

Select 18 additional credits from any combination of Seminar Courses, Research Project Courses and/or Elective Lecture/Lab Courses.

ELECTIVE LECTURE/LAB COURSES

CSC500	Introduction to Software Development	4 credits
DBT500	Business Database Systems	4 credits
DBT524	Querying XML Data with XPath and XQuery	4 credits
MOA500	Business Information Modeling	4 credits
MOA544	Advanced Modeling Topics II	4 credits
MOA635	Advanced Model Driven Development	4 credits

RESEARCH PROJECT COURSES **18 CREDITS REQUIRED**

Select a minimum of 38 credit hours from this list (minimum 6 credits from Enterprise Projects):

CSC590-3 Research Project I - 9 hours/week	3 credits
CSC590-6 Research Project I - 18 hours/week	6 credits
CSC590-9 Research Project I – 27 hours/week	9 credits
CSC590-12 Research Project I - 36 hours/week	12 credits
CSC591-3 Research Project II - 9 hours/week	3 credits
CSC591-6 Research Project II - 18 hours/week	6 credits
CSC591-9 Research Project II – 27 hours/week	9 credits
CSC591-12 Research Project II - 36 hours/week	12 credits
CSC592-3 Research Project III - 9 hours/week	3 credits
CSC592-6 Research Project III - 18 hours/week	6 credits
CSC592-9 Research Project III – 27 hours/week	9 credits
CSC592-12 Research Project III - 36 hours/week	12 credits
CSC593-3 Research Project IV - 9 hours/week	3 credits
CSC593-6 Research Project IV - 18 hours/week	6 credits
CSC593-9 Research Project IV – 27 hours/week	9 credits
CSC593-12 Research Project IV - 36 hours/week	12 credits
CSC594-3 Research Project V - 9 hours/week	3 credits
CSC594-6 Research Project V - 18 hours/week	6 credits
CSC595-3 Research Project VI - 9 hours/week	3 credits
CSC595-6 Research Project VI - 18 hours/week	6 credits
CSC596-3 Research Project VII - 9 hours/week	3 credits
CSC597-3 Research Project VIII - 9 hours/week	3 credits

MSCS COURSE DESCRIPTIONS_

CSC500 INTRODUCTION TO SOFTWARE DEVELOPMENT (4 CREDITS)

This course provides an introduction to software development using Java as an example of a modern programming language. Students gain an understanding of key software concepts while building essential skills in programming. The course encourages the development of professional programming habits, and the ability to produce working solutions at a good level of quality. Students also gain an appreciation of software architectures and methodologies to link software to business requirements. No previous programming experience is required.

CSC520 ENTERPRISE ARCHITECTURE (4 CREDITS)

Enterprise Architecture is an increasingly important topic in the management of large-scale information systems and their associated resources. This course provides an introduction to the main issues involved in forming a strategic view of the enterprise in an informatics context. Students learn how the information resources of an organization can be defined by integrating different perspectives such as business, software application, data and technology. A number of case studies will be referenced during the course, including the Federal Enterprise Architecture (originated by the U.S. Office of Management and Budget).

CSC560 PROCESS AND DATA PATTERNS (4 CREDITS)

This course introduces students to the concept of repeatable business patterns and shows how they can be used in the specification and development of software solutions. The patterns cover common business object types such as Party, Product, Order, Shipment, etc. and common business process elements such as task branching and synchronization, extended transactions, event handling, etc. Students learn how such patterns can be represented using industry standard notations and how they can be realized using standard development tools.

CSC581 ADVANCED COMPUTING SEMINARS -1 (1.5 CREDITS)

This instructor-led course examines current topics in Computer Science at a graduate level. A different selection of topics will be covered each quarter so that the course remains focused on issues that are of current importance. Instruction will utilize appropriate combinations of lecture, discussion, technical walk-through, critical review, and other means of exploring advanced computing concepts. The course has two main objectives:

- Provide students with a good understanding of a range of topics at the forefront of modern Computer Science;
- Develop student skills in the critical assessment of computing concepts, particularly in areas related to technology application.

Students will be required to play an active role in class proceedings.

CSC582 ADVANCED COMPUTING SEMINARS -2 (1.5 CREDITS)

This instructor-led course examines current topics in Computer Science at a graduate level. A different selection of topics will be covered each quarter so that the course remains focused on issues that are of current importance. Instruction will utilize appropriate combinations of lecture, discussion, technical walk-through, critical review, and other means of exploring advanced computing concepts. The course has two main objectives:

- Provide students with a good understanding of a range of topics at the forefront of modern Computer Science;
- Develop student skills in the critical assessment of computing concepts, particularly in areas related to technology application.

Students will be required to play an active role in class proceedings.

CSC583 ADVANCED COMPUTING SEMINARS -3 (1.5 CREDITS)

This instructor-led course examines current topics in Computer Science at a graduate level. A different selection of topics will be covered each quarter so that the course remains focused on issues that are of current importance. Instruction will utilize appropriate combinations of lecture, discussion, technical walk-through, critical review, and other means of exploring advanced computing concepts. The course has two main objectives:

- Provide students with a good understanding of a range of topics at the forefront of modern Computer Science;
- Develop student skills in the critical assessment of computing concepts, particularly in areas related to technology application.

Students will be required to play an active role in class proceedings.

CSC584 ADVANCED COMPUTING SEMINARS - 4 (1.5 CREDITS)

This instructor-led course examines current topics in Computer Science at a graduate level. A different selection of topics will be covered each quarter so that the course remains focused on issues that are of current importance. Instruction will utilize appropriate combinations of lecture, discussion, technical walk-through, critical review, and other means of exploring advanced computing concepts. The course has two main objectives:

- Provide students with a good understanding of a range of topics at the forefront of modern Computer Science;
- Develop student skills in the critical assessment of computing concepts, particularly in areas related to technology application.

Students will be required to play an active role in class proceedings.

CSC585 ADVANCED COMPUTING SEMINARS -5 (1.5 CREDITS)

This instructor-led course examines current topics in Computer Science at a graduate level. A different selection of topics will be covered each quarter so that the course remains focused on issues that are of current importance. Instruction will utilize appropriate combinations of lecture, discussion, technical walk-through, critical review, and other means of exploring advanced computing concepts. The course has two main objectives:

- Provide students with a good understanding of a range of topics at the forefront of modern Computer Science;

- Develop student skills in the critical assessment of computing concepts, particularly in areas related to technology application.

Students will be required to play an active role in class proceedings.

CSC586 ADVANCED COMPUTING SEMINARS -6 (1.5 CREDITS)
This instructor-led course examines current topics in Computer Science at a graduate level. A different selection of topics will be covered each quarter so that the course remains focused on issues that are of current importance. Instruction will utilize appropriate combinations of lecture, discussion, technical walk-through, critical review, and other means of exploring advanced computing concepts. The course has two main objectives:

- Provide students with a good understanding of a range of topics at the forefront of modern Computer Science;
- Develop skills in the critical assessment of computing concepts, particularly in areas related to technology application.

Students will be required to play an active role in class proceedings.

CSC587 ADVANCED COMPUTING SEMINARS -7 (1.5 CREDITS)
This instructor-led course examines current topics in Computer Science at a graduate level. A different selection of topics will be covered each quarter so that the course remains focused on issues that are of current importance. Instruction will utilize appropriate combinations of lecture, discussion, technical walk-through, critical review, and other means of exploring advanced computing concepts. The course has two main objectives:

- Provide students with a good understanding of a range of topics at the forefront of modern Computer Science;
- Develop student skills in the critical assessment of computing concepts, particularly in areas related to technology application.

Students will be required to play an active role in class proceedings.

CSC588 ADVANCED COMPUTING SEMINARS -8 (1.5 CREDITS)
This instructor-led course examines current topics in Computer Science at a graduate level. A different selection of topics will be covered each quarter so that the course remains focused on issues that are of current importance. Instruction will utilize appropriate combinations of lecture, discussion, technical walk-through, critical review, and other means of exploring advanced computing concepts. The course has two main objectives:

- Provide students with a good understanding of a range of topics at the forefront of modern Computer Science;
- Develop student skills in the critical assessment of computing concepts, particularly in areas related to technology application.

Students will be required to play an active role in class proceedings.

CSC590-3 RESEARCH PROJECT I –
9 HOURS PER WEEK (3 CREDITS)
This research project provides an opportunity for students to engage in focused research, and optionally development, on the state-of-the-art in a selected area of computer science. The student will review the relevant literature to become familiar with leading-edge research in the area, and then develop theoretical and/or practical proposals to extend the relevant body of knowledge. Typically, the student will author or co-author a detailed specification for these extensions, implement parts of the specification in code, and author or co-author a technical paper suitable for submission for publication as a Neumont University technical report or as an article in a respected workshop proceedings, conference proceedings, or journal. If the theoretical content is sufficient (e.g. detailed discussion of new algorithms developed by the student), no software specification or coding is required.
Prerequisites: Instructor approval

CSC590-6 RESEARCH PROJECT I –
18 HOURS/WEEK (6 CREDITS)
This research project provides an opportunity for students to engage in focused research, and optionally development, on the state-of-the-art in a selected area of computer science. The student will review the relevant literature to become familiar with leading-edge research in the area, and then develop theoretical and/or practical proposals to extend the relevant body of knowledge. Typically, the student will author or co-author a detailed specification for these extensions, implement parts of the specification in code, and author or co-author a technical paper suitable for submission for publication as a Neumont University technical report or as an article in a respected workshop proceedings, conference proceedings, or journal. If the theoretical content is sufficient (e.g. detailed discussion of new algorithms developed by the student), no software specification or coding is required.
Prerequisites: Instructor approval

CSC590-9 RESEARCH PROJECT I –
27 HOURS/WEEK (9 CREDITS)
This research project provides an opportunity for students to engage in focused research, and optionally development, on the state-of-the-art in a selected area of computer science. The student will review the relevant literature to become familiar with leading-edge research in the area, and then develop theoretical and/or practical proposals to extend the relevant body of knowledge. Typically, the student will author or co-author a detailed specification for these extensions, implement parts of the specification in code, and author or co-author a technical paper suitable for submission for publication as a Neumont University technical report or as an article in a respected workshop proceedings, conference proceedings, or journal. If the theoretical content is sufficient (e.g. detailed discussion of new algorithms developed by the student), no software specification or coding is required.
Prerequisites: Instructor approval

CSC590-12 RESEARCH PROJECT I –
36 HOURS/WEEK (12 CREDITS)
This research project provides an opportunity for students to engage in focused research, and optionally development, on the state-of-the-art in a selected area of computer science. The student will review the relevant literature to become familiar with leading-edge research in the area, and then develop theoretical and/or practical proposals to extend the relevant body of knowledge. Typically, the student will author or co-author a detailed specification for these extensions, implement parts of the specification in code, and author or co-author a technical paper suitable for submission for publication as a Neumont University technical report or as an

article in a respected workshop proceedings, conference proceedings, or journal. If the theoretical content is sufficient (e.g. detailed discussion of new algorithms developed by the student), no software specification or coding is required.
Prerequisites: Instructor approval

CSC591-3 RESEARCH PROJECT II –
9 HOURS/WEEK (3 CREDITS)
This research project provides an opportunity for students to engage in focused research, and optionally development, on the state-of-the-art in a selected area of computer science. The student will review the relevant literature to become familiar with leading-edge research in the area, and then develop theoretical and/or practical proposals to extend the relevant body of knowledge. Typically, the student will author or co-author a detailed specification for these extensions, implement parts of the specification in code, and author or co-author a technical paper suitable for submission for publication as a Neumont University technical report or as an article in a respected workshop proceedings, conference proceedings, or journal. If the theoretical content is sufficient (e.g. detailed discussion of new algorithms developed by the student), no software specification or coding is required.
Prerequisites: Instructor approval

CSC591-6 RESEARCH PROJECT II –
18 HOURS/WEEK (6 CREDITS)
This research project provides an opportunity for students to engage in focused research, and optionally development, on the state-of-the-art in a selected area of computer science. The student will review the relevant literature to become familiar with leading-edge research in the area, and then develop theoretical and/or practical proposals to extend the relevant body of knowledge. Typically, the student will author or co-author a detailed specification for these extensions, implement parts of the specification in code, and author or co-author a technical paper suitable for submission for publication as a Neumont University technical report or as an article in a respected workshop proceedings, conference proceedings, or journal. If the theoretical content is sufficient (e.g. detailed discussion of new algorithms developed by the student), no software specification or coding is required.
Prerequisites: Instructor approval

CSC591-9 RESEARCH PROJECT II –
27 HOURS/WEEK (9 CREDITS)
This research project provides an opportunity for students to engage in focused research, and optionally development, on the state-of-the-art in a selected area of computer science. The student will review the relevant literature to become familiar with leading-edge research in the area, and then develop theoretical and/or practical proposals to extend the relevant body of knowledge. Typically, the student will author or co-author a detailed specification for these extensions, implement parts of the specification in code, and author or co-author a technical paper suitable for submission for publication as a Neumont University technical report or as an article in a respected workshop proceedings, conference proceedings, or journal. If the theoretical content is sufficient (e.g. detailed discussion of new algorithms developed by the student), no software specification or coding is required.
Prerequisites: Instructor approval

CSC591-12 RESEARCH PROJECT II –
36 HOURS/WEEK (12 CREDITS)
This research project provides an opportunity for students to engage in focused research, and optionally development, on the state-of-the-art in a selected area of computer science. The student will review the relevant literature to become familiar with leading-edge research in the area, and then develop theoretical and/or practical proposals to extend the relevant body of knowledge. Typically, the student will author or co-author a detailed specification for these extensions, implement parts of the specification in code, and author or co-author a technical paper suitable for submission for publication as a Neumont University technical report or as an article in a respected workshop proceedings, conference proceedings, or journal. If the theoretical content is sufficient (e.g. detailed discussion of new algorithms developed by the student), no software specification or coding is required.
Prerequisites: Instructor approval

CSC592-3 RESEARCH PROJECT III –
9 HOURS/WEEK (3 CREDITS)
This research project provides an opportunity for students to engage in focused research, and optionally development, on the state-of-the-art in a selected area of computer science. The student will review the relevant literature to become familiar with leading-edge research in the area, and then develop theoretical and/or practical proposals to extend the relevant body of knowledge. Typically, the student will author or co-author a detailed specification for these extensions, implement parts of the specification in code, and author or co-author a technical paper suitable for submission for publication as a Neumont University technical report or as an article in a respected workshop proceedings, conference proceedings, or journal. If the theoretical content is sufficient (e.g. detailed discussion of new algorithms developed by the student), no software specification or coding is required.
Prerequisites: Instructor approval

CSC592-6 RESEARCH PROJECT III –
18 HOURS/WEEK (6 CREDITS)
This research project provides an opportunity for students to engage in focused research, and optionally development, on the state-of-the-art in a selected area of computer science. The student will review the relevant literature to become familiar with leading-edge research in the area, and then develop theoretical and/or practical proposals to extend the relevant body of knowledge. Typically, the student will author or co-author a detailed specification for these extensions, implement parts of the specification in code, and author or co-author a technical paper suitable for submission for publication as a Neumont University technical report or as an article in a respected workshop proceedings, conference proceedings, or journal. If the theoretical content is sufficient (e.g. detailed discussion of new algorithms developed by the student), no software specification or coding is required.
Prerequisites: Instructor approval

CSC592-9 RESEARCH PROJECT III –
27 HOURS/WEEK (9 CREDITS)
This research project provides an opportunity for students to engage in focused research, and optionally development, on the state-of-the-art in a selected area of computer science. The student will

review the relevant literature to become familiar with leading-edge research in the area, and then develop theoretical and/or practical proposals to extend the relevant body of knowledge. Typically, the student will author or co-author a detailed specification for these extensions, implement parts of the specification in code, and author or co-author a technical paper suitable for submission for publication as a Neumont University technical report or as an article in a respected workshop proceedings, conference proceedings, or journal. If the theoretical content is sufficient (e.g. detailed discussion of new algorithms developed by the student), no software specification or coding is required.

Prerequisites: Instructor approval

CSC592-12 RESEARCH PROJECT III – 36 HOURS/WEEK (12 CREDITS)

This research project provides an opportunity for students to engage in focused research, and optionally development, on the state-of-the-art in a selected area of computer science. The student will review the relevant literature to become familiar with leading-edge research in the area, and then develop theoretical and/or practical proposals to extend the relevant body of knowledge. Typically, the student will author or co-author a detailed specification for these extensions, implement parts of the specification in code, and author or co-author a technical paper suitable for submission for publication as a Neumont University technical report or as an article in a respected workshop proceedings, conference proceedings, or journal. If the theoretical content is sufficient (e.g. detailed discussion of new algorithms developed by the student), no software specification or coding is required.

Prerequisites: Instructor approval

CSC593-3 RESEARCH PROJECT IV – 9 HOURS/WEEK (3 CREDITS)

This research project provides an opportunity for students to engage in focused research, and optionally development, on the state-of-the-art in a selected area of computer science. The student will review the relevant literature to become familiar with leading-edge research in the area, and then develop theoretical and/or practical proposals to extend the relevant body of knowledge. Typically, the student will author or co-author a detailed specification for these extensions, implement parts of the specification in code, and author or co-author a technical paper suitable for submission for publication as a Neumont University technical report or as an article in a respected workshop proceedings, conference proceedings, or journal. If the theoretical content is sufficient (e.g. detailed discussion of new algorithms developed by the student), no software specification or coding is required.

Prerequisites: Instructor approval

CSC593-6 RESEARCH PROJECT IV – 18 HOURS/WEEK (6 CREDITS)

This research project provides an opportunity for students to engage in focused research, and optionally development, on the state-of-the-art in a selected area of computer science. The student will review the relevant literature to become familiar with leading-edge research in the area, and then develop theoretical and/or practical proposals to extend the relevant body of knowledge. Typically, the student will author or co-author a detailed specification for these extensions, implement parts of the specification in code, and author or co-author a technical paper suitable for submission for publication as a Neumont University technical report or as an article in a respected workshop proceedings, conference proceedings, or journal. If the theoretical content is sufficient (e.g. detailed discussion of new algorithms developed by the student), no software specification or coding is required.

Prerequisites: Instructor approval

CSC593-9 RESEARCH PROJECT IV – 27 HOURS/WEEK (9 CREDITS)

This research project provides an opportunity for students to engage in focused research, and optionally development, on the state-of-the-art in a selected area of computer science. The student will review the relevant literature to become familiar with leading-edge research in the area, and then develop theoretical and/or practical proposals to extend the relevant body of knowledge. Typically, the student will author or co-author a detailed specification for these extensions, implement parts of the specification in code, and author or co-author a technical paper suitable for submission for publication as a Neumont University technical report or as an article in a respected workshop proceedings, conference proceedings, or journal. If the theoretical content is sufficient (e.g. detailed discussion of new algorithms developed by the student), no software specification or coding is required.

Prerequisites: Instructor approval

CSC593-12 RESEARCH PROJECT IV – 36 HOURS/WEEK (12 CREDITS)

This research project provides an opportunity for students to engage in focused research, and optionally development, on the state-of-the-art in a selected area of computer science. The student will review the relevant literature to become familiar with leading-edge research in the area, and then develop theoretical and/or practical proposals to extend the relevant body of knowledge. Typically, the student will author or co-author a detailed specification for these extensions, implement parts of the specification in code, and author or co-author a technical paper suitable for submission for publication as a Neumont University technical report or as an article in a respected workshop proceedings, conference proceedings, or journal. If the theoretical content is sufficient (e.g. detailed discussion of new algorithms developed by the student), no software specification or coding is required.

Prerequisites: Instructor approval

CSC594-3 RESEARCH PROJECT V – 9 HOURS/WEEK (3 CREDITS)

This research project provides an opportunity for students to engage in focused research, and optionally development, on the state-of-the-art in a selected area of computer science. The student will review the relevant literature to become familiar with leading-edge research in the area, and then develop theoretical and/or practical proposals to extend the relevant body of knowledge. Typically, the student will author or co-author a detailed specification for these extensions, implement parts of the specification in code, and author or co-author a technical paper suitable for submission for publication as a Neumont University technical report or as an article in a respected workshop proceedings, conference proceedings, or journal.

If the theoretical content is sufficient (e.g. detailed discussion of new algorithms developed by the student), no software specification or coding is required.
Prerequisites: Instructor approval

CSC594-6 RESEARCH PROJECT V –
18 HOURS/WEEK (6 CREDITS)
This research project provides an opportunity for students to engage in focused research, and optionally development, on the state-of-the-art in a selected area of computer science. The student will review the relevant literature to become familiar with leading-edge research in the area, and then develop theoretical and/or practical proposals to extend the relevant body of knowledge. Typically, the student will author or co-author a detailed specification for these extensions, implement parts of the specification in code, and author or co-author a technical paper suitable for submission for publication as a Neumont University technical report or as an article in a respected workshop proceedings, conference proceedings, or journal. If the theoretical content is sufficient (e.g. detailed discussion of new algorithms developed by the student), no software specification or coding is required.
Prerequisites: Instructor approval

CSC595-3 RESEARCH PROJECT VI –
9 HOURS/WEEK (3 CREDITS)
This research project provides an opportunity for students to engage in focused research, and optionally development, on the state-of-the-art in a selected area of computer science. The student will review the relevant literature to become familiar with leading-edge research in the area, and then develop theoretical and/or practical proposals to extend the relevant body of knowledge. Typically, the student will author or co-author a detailed specification for these extensions, implement parts of the specification in code, and author or co-author a technical paper suitable for submission for publication as a Neumont University technical report or as an article in a respected workshop proceedings, conference proceedings, or journal. If the theoretical content is sufficient (e.g. detailed discussion of new algorithms developed by the student), no software specification or coding is required.
Prerequisites: Instructor approval

CSC595-6 RESEARCH PROJECT VI –
18 HOURS/WEEK (6 CREDITS)
This research project provides an opportunity for students to engage in focused research, and optionally development, on the state-of-the-art in a selected area of computer science. The student will review the relevant literature to become familiar with leading-edge research in the area, and then develop theoretical and/or practical proposals to extend the relevant body of knowledge. Typically, the student will author or co-author a detailed specification for these extensions, implement parts of the specification in code, and author or co-author a technical paper suitable for submission for publication as a Neumont University technical report or as an article in a respected workshop proceedings, conference proceedings, or journal. If the theoretical content is sufficient (e.g. detailed discussion of new algorithms developed by the student), no software specification or coding is required.
Prerequisites: Instructor approval

CSC596-3 RESEARCH PROJECT VII –
9 HOURS/WEEK (3 CREDITS)
This research project provides an opportunity for students to engage in focused research, and optionally development, on the state-of-the-art in a selected area of computer science. The student will review the relevant literature to become familiar with leading-edge research in the area, and then develop theoretical and/or practical proposals to extend the relevant body of knowledge. Typically, the student will author or co-author a detailed specification for these extensions, implement parts of the specification in code, and author or co-author a technical paper suitable for submission for publication as a Neumont University technical report or as an article in a respected workshop proceedings, conference proceedings, or journal. If the theoretical content is sufficient (e.g. detailed discussion of new algorithms developed by the student), no software specification or coding is required.
Prerequisites: Instructor approval

CSC597-3 RESEARCH PROJECT VIII –
9 HOURS/WEEK (3 CREDITS)
This research project provides an opportunity for students to engage in focused research, and optionally development, on the state-of-the-art in a selected area of computer science. The student will review the relevant literature to become familiar with leading-edge research in the area, and then develop theoretical and/or practical proposals to extend the relevant body of knowledge. Typically, the student will author or co-author a detailed specification for these extensions, implement parts of the specification in code, and author or co-author a technical paper suitable for submission for publication as a Neumont University technical report or as an article in a respected workshop proceedings, conference proceedings, or journal. If the theoretical content is sufficient (e.g. detailed discussion of new algorithms developed by the student), no software specification or coding is required.
Prerequisites: Instructor approval

DBT500 BUSINESS DATABASE SYSTEMS (4 CREDITS)
Relational databases underpin the majority of today's business information systems. This course provides students with a working knowledge of relational database technology, emphasizing its application in practical information systems. The course covers the relational model of data, and the use of the industry-standard SQL language as a means of defining, manipulating, and controlling databases. Students use modern relational database management systems (such as SQL Server and DB2) to apply their knowledge.

DBT524 QUERYING XML DATA
WITH XPATH AND XQUERY (4 CREDITS)
XML has become the standard approach for representing structured data in a form that can be transferred between computer systems. XML can be used to capture a wide range of information, from highly structured (such as tables of statistics) to relatively loosely structured (such as a book). This course provides students with the basic knowledge and skills required to extract meaningful information from XML documents of all kinds. The course is based on the XPath and XQuery languages defined by the World Wide Web Consortium (W3C).
Prerequisite: CS230 (Relational Databases II) or equivalent

DBT530 DATA WAREHOUSING AND BUSINESS INTELLIGENCE (4 CREDITS)

This course explores a number of topics in business intelligence systems, especially data warehousing. Students learn the principles underlying efficient utilization of modern business intelligence systems, and apply these principles using the latest technologies provided by industrial DBMSs such as Microsoft's SQL Server and IBM's DB2. Students will learn how to integrate data from various sources, use controlled denormalization to design efficient data warehouses and data marts, analyze and mine data, and design appropriate reports.

Prerequisites: DBT230 (Relational Databases II) or equivalent

MOA500 BUSINESS INFORMATION MODELING (4 CREDITS)

This course provides a solid basis for modeling business information and business rules at a conceptual level, and transforming high level information models into relational database schemas for implementation in practical database management systems. While it's conceptual emphasis is on Object-Role Modeling (ORM) it also covers the class diagramming technique within the Unified Modeling Language (UML), and discusses how to transform ORM models into UML class models.

MOA535 BUSINESS MODELING AND SYSTEM DESIGN (4 CREDITS)

Students learn to apply concepts in modeling business information and methods for mapping business requirements onto technology realizations. Detailed coverage focuses mainly on the implementation of business objects, business processes and business rules. Students will learn how to use modern tools to facilitate the production of enterprise-scale applications.

Prerequisites: Students must have successfully completed at least one of the following: Neumont University course MOA235 (Introduction to Model Driven Development) or an acceptable equivalent course, or a minimum of two years experience in specifying, procuring, or developing business-facing software applications.

MOA540 ADVANCED INFORMATION MODELING (4 CREDITS)

This course covers further concepts in modeling business information and business rules. A selection will be made from topics such as Entity Relationship modeling, conceptual schema equivalence and optimization, reverse engineering and data migration, normalization and controlled denormalization, meta-modeling, conceptual query languages, mapping ORM to XML Schema, and model management.

Prerequisites: MOA240 Information Modeling II

MOA542 ADVANCED MODELING TOPICS I (4 CREDITS)

This course explores a number of advanced topics in modeling business information and business rules. It assumes familiarity with conceptual information modeling approaches such as Object-Role Modeling (ORM) and Entity Relationship (ER) modeling, as well as class diagramming within the Unified Modeling Language (UML). A selection will be made from topics such as advanced subtyping, advanced derivation, nominalization/objectification, business rule modalities, rule formalization and verbalization, conceptual joins, collection types, higher-order types, open/closed world semantics, basic temporal semantics, and data model patterns.

Prerequisites: MOA240 Information Modeling II

MOA544 ADVANCED MODELING TOPICS II (4 CREDITS)

This course explores a number of advanced topics in modeling business information and business rules. It assumes familiarity with conceptual information modeling approaches such as Object-Role Modeling (ORM) and Entity Relationship (ER) modeling, as well as the class diagramming technique within the Unified Modeling Language (UML). A selection will be made from topics such as formal textual constraints, dynamic rules, advanced temporal modeling, thing/occurrence distinctions, advanced derivation options, mapping conceptual schemas to object oriented schemas, mapping conceptual schemas to Extensible Markup Language (XML) schemas, ontologies and the semantic web, mapping conceptual schemas to the Web Ontology Language (OWL), and pragmatic issues in modeling.

Prerequisites: MOA240 Information Modeling II

MOA635 ADVANCED MODEL DRIVEN DEVELOPMENT (4 CREDITS)

Students learn further advanced concepts in model-driven development, including the application of relevant industry standards, the characteristics of successful modeling projects, and issues in managing models, such as version control, verification, validation, and governance. Coverage of specialized tools will be included as appropriate.

Prerequisites: Students must have successfully completed at least one of the following: MOA435 (Model Driven Development II) or MOA535 (Business Modeling and System Design) or an acceptable equivalent course or a minimum of two years experience in developing business-facing software applications using a modern object-oriented programming language.

STUDENT AFFAIRS_

HOUSING

A far cry from traditional dorm life, Neumont housing offers affordable, furnished, apartment-style living close to campus with shared and private rooms available. Student activities find a nucleus here.

The campus offers two housing options:

- The Falls, located approximately 1 mile from campus, is within walking distance of many shops and restaurants, and convenient to student-run shuttles, city buses, and light rail transit lines
- Sterling Village is located within an easy walk of the Neumont campus, overlooking the scenic Jordan River Parkway

All housing is fully furnished, including:

- A washer and dryer
- Couches
- Beds
- Lamps
- Two or three bedroom apartments
- Shared by three to five students.

More information about housing is available at www.neumont.edu/studenthousing.

STUDENT ADVISING

Advising encompasses several important areas of student life. The school advises and assists students in course selection and registration, dropping and adding courses, and meeting graduation requirements.

LIBRARY

The goal of the Neumont University Library is twofold:

- Serve the information needs of students and faculty members of the Neumont University community
- Offer users the convenience and flexibility of a ubiquitous digital library infrastructure, which delivers library materials to the desktop

The library achieves these goals by using on-line library services. Traditional resources include both journal publications and general periodicals. The on-line library hosts subscription-based databases, online books, journals, technical reports, reference tools, and other information products. Users have 24-hour availability from campus or remote locations. The University's library is overseen by the Librarian and the Office of Student Affairs, which works with faculty to ensure that the library collection remains current. The library is located at www.neumont.edu/library.

CAREER SERVICES

Upon completion of the program, Neumont University will assist graduates in locating career opportunities in Computer Science and related fields. We have established strong relationships with potential future employers. We will continue to foster these relationships as they help us to know what the industry considers to be necessary technologies and value skills for the success of our graduates. The Office of Career Services will assist graduates in identifying potential career paths, in the graduates' development of a positive self-image, and in assessing competencies, strengths, and career expectations.

Although the University does not, in any way, guarantee employment, it is the goal of Neumont University to help our graduates realize a high degree of personal and professional development and successful employment.

More information about the career services program can be found in the careers and alumni section of www.neumont.edu.

UNIVERSITY POLICIES_

FAMILIARITY WITH UNIVERSITY REGULATIONS

The *Course Catalog* and *Student Handbook,* which are made available to all students on the Neumont website, set forth the policies and regulations under which the institution operates. It is the responsibility of the student to become familiar with these policies and regulations and to comply accordingly.

PROGRAMS AND CHARGES

The University reserves the right to modify its tuition and fees; to add to or withdraw members from its faculty and staff; to revise its academic programs and to withdraw subjects or courses if registration falls below the required number. A specific course requirement may be changed or waived by the Provost upon written request and for reasonable cause. Course substitutions may be made only by the Curriculum Committee. The total hours specified in each area of the degree are the minimum requirements for completion.

CAMPUS SECURITY

In compliance with the crime awareness provisions of the Campus Security Act of 1990, crime statistics and campus security policies are available through the Office of Student Affairs and on the Neumont University website.

STUDENT CONDUCT

Each student is held responsible for conforming to local, state, and federal laws and for behaving in a manner consistent with the best interest of the University and of the student body. Students should not interfere with other students' rights, safety, health, or right to learn. Violations to conduct standards include, but are not limited to:

- Theft
- Disruptive behavior
- Possession or use of firearms, explosives, or other dangerous substances
- Vandalism or threats of actual damage to property or physical harm to others
- Possession, sale, transfer, or use of illegal drugs
- Appearance of being under the influence of alcohol or illegal drugs, possession or consumption of alcohol on campus
- Harassing or abusive acts which invade an individual's right to privacy including sexual harassment or abuse against members of a particular race, ethnic, religious, or cultural group
- Any activity that may be perceived as hazing, which is defined as a situation or activity which intentionally or recklessly endangers the physical or mental health or safety of an individual for the purpose of admission or initiation into any affiliation or organization associated with the University
- Reckless or intentional use of invasive software such as viruses and worms destructive to hardware, software, or data files
- Academic dishonesty
- Violence or the threat of violence
- Violation of any Housing or University policy
- Violation of the Acceptable Use Policy for school-issued equipment

Note: This list is not exhaustive. To view the full version of the Student Code, please refer to the Neumont University Student Handbook.

The University reserves the right to suspend or dismiss any student at any time for misconduct or when such action is deemed to be in the best interest of the student or the student body.

ACADEMIC HONESTY

The University adheres to the tenet that professional attitude begins in the classroom. For that reason, students and faculty of the University will not tolerate or commit any form of academic dishonesty.

Acts of academic dishonesty are defined as falsification of materials submitted for a grade, representation of another's work as one's own, or violation of test conditions as designated by the instructor. Academic dishonesty can also be collaboration beyond the scope that is allowed by an instructor, file-sharing, submitting false documentation for excused absence requests, or other deceit used to gain academic credit.

Note: This list is not exhaustive. To view the full version of the Student Code, please refer to the Neumont University Student Handbook.

ALCOHOL AND SUBSTANCE ABUSE STATEMENT

The University does not permit or condone the use or possession of alcohol, marijuana, or any other illegal drug, narcotic, or controlled substance by students or employees while on school premises. Alcohol is only permitted in designated areas in the student housing in compliance with state and local laws.

In accordance with the Drug-Free Schools and Communities Act Amendments of 1989 (Public Law 101-226), the following policy is in effect:

Students found in violation of the unlawful possession, use, or distribution of drugs or alcohol on the University campus, or as any part of the institution's activities, will be subject to disciplinary sanctions from the University.

Students are subject to all local, state, and federal laws.

Students should also be aware that the use of illicit drugs and the abuse of alcohol are dangerous to personal health and present an additional risk for pregnant women and their unborn children.

Drug and alcohol counseling referrals are available at the University to students through the Office of Student Affairs. Individuals needing treatment or rehabilitation will be referred to an appropriate community resource. Neumont University does not assume the responsibility for the cost incurred for drug treatment or rehabilitation.

SEXUAL HARASSMENT POLICY

The University strives to provide and maintain an environment free of all forms of harassment, including sexual harassment.

The following guidelines are issued which legally define sexual harassment as unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature when:

- Submission to such conduct is made either explicitly or implicitly as a term or condition of an individual's employment,
- Submission to or rejection of such conduct by an individual is used as the basis for employment or academic decisions affecting such an individual, or
- Such conduct has the purpose or effect of unreasonably interfering with an individual's academic or work performance or creating an intimidating, hostile, or offensive working environment.

The University will not tolerate sexual harassment. Behavior toward any employee or student by a member of the staff, faculty, or student body which constitutes unwelcome sexual advances, including comments of a sexual nature, or inappropriate conduct, including the display of derogatory drawings, cartoons, or posters, will be dealt with quickly and vigorously and will result in disciplinary action up to and including termination or dismissal.

The sexual harassment of any employee or student of Neumont University is forbidden. The Office of Student Affairs is responsible for receiving and investigating complaints of sexual harassment involving a student(s). Any employee, student, or administrator who is aware of an alleged incident of sexual harassment involving a student(s) should take immediate action by bringing the matter to the attention of the Office of Student Affairs.

JUDICIAL PROCEDURES

Students who violate school policies, including the Student Code, *Housing Rules and Regulations*, instructions from a faculty member, the "Acceptable Use Policy", or other school policies will be subject to judicial sanctions which may include suspension or dismissal from the University. Judicial procedures will be handled through the Office of Student Affairs. Details of the appeal process can be found in the Student Code, located in the *Student Handbook*.

STUDENT COMPLAINTS

Generally, complaints should be directed to the Office of Student Affairs. If Student Affairs is not able to address the student's complaint, the student may seek additional assistance from the following:

Academic concerns: Office of the Provost

Operational issues or concerns: President

Students will NOT be subject to unfair actions as a result of initiating a complaint.

If a student feels that the University has not adequately addressed a complaint or concern, the student may consider contacting the Accrediting Council, at 750 First Street, N.E., Suite 980, Washington, DC 20002-4241, (202) 336-6780.

Students may also contact the Utah State Commission on Postsecondary Education at the Heber Wells Building, Second Floor, 160 East 300 South, SM Box 136704, Salt Lake City, UT 84114-6704, (801) 530-6601.

Students will NOT be subject to unfair actions as a result of initiating a complaint.

STATEMENT OF NON-DISCRIMINATION

Neumont University does not discriminate on the basis of race, color, national origin, sex, religion, age, marital status, veteran status, or disability, in the administration of its educational and admissions policies, scholarship and loan programs, or other university administered programs.

Neumont University complies with Title VI of the Civil Rights Act of 1964, the Age Discrimination in Employment Act of 1967, Title IX of the Education Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, the Age Discrimination Act of 1975, and the Americans with Disabilities Act of 1990. The Americans with Disabilities Act of 1990, as amended, protects qualified applicants, students, and employees with disabilities from discrimination in hiring, promotion,

discharge, pay, job training, fringe benefits, classification, referral, and other aspects of employment on the basis of disability. The law also requires that covered entities provide qualified applicants, students, and employees with disabilities with reasonable accommodations that do not impose undue hardship.

GRADE APPEALS

Grade appeals must be made before the start of the following quarter. The initial appeal by the student must be sent no later than the first day of the quarter following the quarter for which a grade is being appealed. The Appeals Committee meetings will be held at the start of each quarter and during school breaks, as needed.

Please contact the Office of Student Affairs for the proper grade appeal documents and procedures.

FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT OF 1974

The Family Educational Rights and Privacy Act (FERPA) affords students certain rights with respect to their education records. These rights include:
(1) The right to inspect and review the student's education records within 45 days of the day the University receives a request for access.

A student should submit to the registrar a written request that identifies the record(s) the student wishes to inspect. The University official will make arrangements for access and notify the student of the time and place where the records may be inspected. If the records are not maintained by the University official to whom the request was submitted, that official shall advise the student of the correct official to whom the request should be addressed.
(2) The right to request the amendment of the student's education records that the student believes are inaccurate, misleading, or otherwise in violation of the student's privacy rights under FERPA.

A student who wishes to ask the University to amend a record should write the University official responsible for the record, clearly identify the part of the record the student wants changed, and specify why it should be changed.
If the University decides not to amend the record as requested, the University will notify the student in writing of the decision and the student's right to a hearing regarding the request for amendment. Additional information regarding the hearing procedures will be provided to the student when notified of the right to a hearing.

(3) The right to provide written consent before the University discloses personally identifiable information from the student's education records, except to the extent that FERPA authorizes disclosure without consent.

The University discloses education records without a student's prior written consent under the FERPA exception for disclosure to school officials with legitimate educational interests. A school official is a person employed by the University in an administrative, supervisory, academic or research, or support staff position (including law enforcement unit personnel and health staff); a person or company with whom the University has contracted as its agent to provide a service instead of using University employees or officials (such as an attorney, auditor, or collection agent); a person serving on the Board of Trustees; or a student serving on an official committee, such as a disciplinary or grievance committee, or assisting another school official in performing his or her tasks.

A school official has a legitimate educational interest if the official needs to review an education record in order to fulfill his or her professional responsibilities for the University.

Upon request, the University also discloses education records without consent to officials of another school in which a student seeks or intends to enroll.

(4) The right to file a complaint with the U.S. Department of Education concerning alleged failures by the University to comply with the requirements of FERPA. The name and address of the Office that administers FERPA is:

Family Policy Compliance Office
U.S. Department of Education
400 Maryland Avenue, SW
Washington, DC 20202-5902

NOTICE FOR DIRECTORY INFORMATION

The Family Educational Rights and Privacy Act (FERPA), a Federal law, requires that Neumont University, with certain exceptions, obtain your written consent prior to the disclosure of personally identifiable information from your education records. However, Neumont may disclose appropriately designated "directory information" without written consent, unless you have advised the university to the contrary in accordance with Neumont procedures.

The primary purpose of directory information is to allow Neumont University to include this type of information from your education records in certain school publications. Examples include:

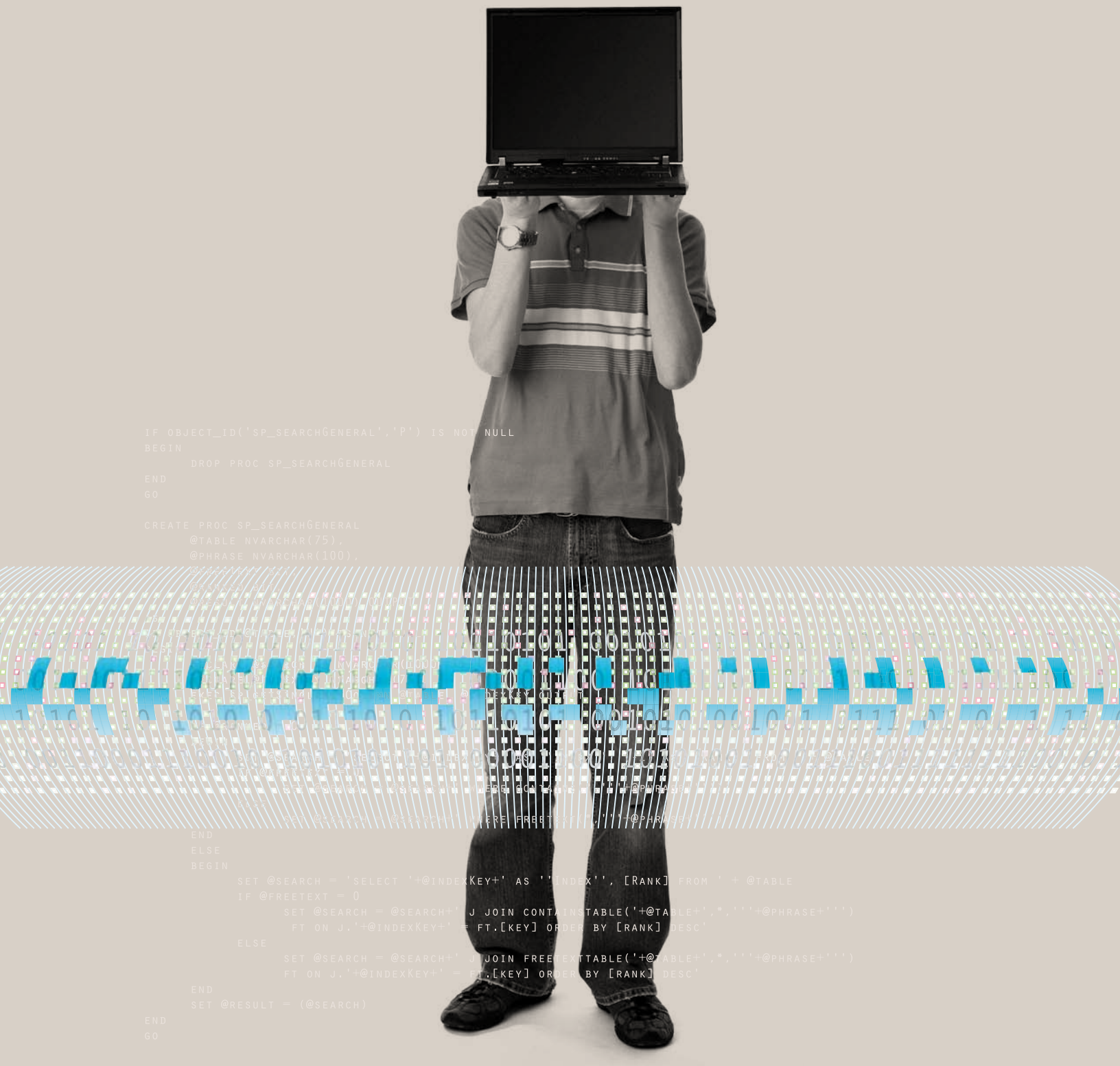
- Academic and attendance recognition;
- Commencement programs; and
- Promotional material on behalf of the university.

Directory information, which is information that is generally not considered harmful or an invasion of privacy if released, can also be disclosed to outside organizations without a student's prior written consent.
Neumont University has designated the following information as directory information:

- Student's name
- Participation in officially recognized activities
- Address
- Telephone listing
- Electronic mail address
- Photograph
- Degrees, honors, and awards received
- Date and place of birth
- Dates of attendance
- Cohort number
- Personal websites
- Internal and Enterprise project topics and partners
- The most recent educational agency or institution attended

More information on Neumont's FERPA policy is available at the Neumont website.

_SCHOLARSHIPS



SCHOLARSHIPS_

Neumont University offers tuition scholarships to encourage enrollment by qualified students into our life-changing program. To apply for scholarships, incoming students must complete the Neumont University Scholarship Application and provide additional information noted in the scholarship description. Additional materials are required and must be received in their entirety by the Scholarship Committee before the published deadline. Send all additional materials to **scholarship@neumont.edu**. Contact the admissions department for dates.

Applicants for all Neumont scholarships will be reviewed based on academic records from high school and college (if applicable), requested material, and other relevant factors. Based on the review of these criteria, the Scholarship Committee may award a scholarship to the applicant. Based on the type of award, a minimum cumulative GPA must be maintained for continued eligibility for the awarded scholarship.

Scholarships are only available to full-time enrolled students making normal progress. Normal progress is defined as ten continuous quarters from first time enrollment to graduation. Any scholarship student who drops below full-time is no longer eligible for the scholarship. Exceptions may be considered for students in their final quarter or students withdrawing for full-time community service (military, church service, etc). In addition, Master students may defer a scholarship one time for one quarter. Written requests for scholarship deferment should be submitted to the Registrar

The total dollars available to be applied to a student's account may not exceed, on a cumulative basis, more than 100% of charges for tuition.

UNDERGRADUATE SCHOLARSHIPS

Visit www.neumont.edu/scholarships for application deadlines. The scholarship committee reviews application approximately four weeks prior to the start of spring and fall quarters. Students wishing to apply for a scholarship should contact their Admissions Representative to determine the exact date of the review meeting. To be considered for a scholarship a prospective student must complete an Enrollment Agreement and pay the Registration Fee. Any changes to the Enrollment Agreement could result in the loss of the scholarship award.

Additional information regarding all scholarships, including selection criteria considered by the Scholarship Committee, can be obtained by contacting the Admissions Department.

Qualified prospective students are invited to apply for the following scholarships:

COMMUNITY SERVICE SCHOLARSHIP

To recognize Neumont students who have made a significant contribution to their community. The Community Service Scholarship, award of up to $2,500, is offered to individuals who have served at least 18 months in an organized full-time community service or military capacity. Prospective students who would like to be considered for this scholarship must submit:

- A letter describing their community service
- A letter of recommendation from an official from the sponsoring organization

Scholarship recipients must maintain a minimum 2.50 Cumulative Grade Point Average (cGPA) for continued scholarship eligibility. Scholarship recipients will be awarded $250 per quarter ($1,000 per calendar year). Students whose cGPA drops below the 2.50 minimum are given one quarter to remediate their cGPA and meet the requirement. Failure to remediate one's cGPA in the allotted timeframe will result in scholarship ineligibility for the duration of the program.

NEUMONT SCHOLARSHIP

To encourage the enrollment of highly qualified students, Neumont University grants scholarships of up to 25% of tuition costs to those students who demonstrate superior academic competency and skills. Prospective students who would like to be considered for this scholarship must:

- Complete an official standardized test (ACT or SAT)
- Send their official transcripts to Neumont University

Scholarship recipients must maintain a minimum 3.50 cGPA for continued scholarship eligibility. Scholarship recipients whose cGPA drops below the 3.50 minimum are given one quarter to remediate their cGPA and meet the requirement. Failure to remediate one's cGPA in the allotted timeframe will result in scholarship ineligibility for the duration of the program. Students awarded tuition scholar-

ships are not eligible for other institutional scholarships awarded by the University. Significant work experience may be counted in lieu of a standardized test score.

QUARTERLY SCHOLARSHIPS FOR CONTINUING STUDENTS

Qualified current Neumont students will be considered for the following scholarships:

FOUNDER'S SCHOLARSHIP

To reward students for excellent academic achievement, the Founders' Scholarship Award is available for continuing students whose term GPA is in the top 10% of the student body for the previous academic quarter and who additionally earn a term 3.80 GPA or better. Students with a 3.80 or better term GPA are not automatically guaranteed this scholarship, and the Scholarship Committee will make final determinations of scholarship awards. Award recipients will receive $500, to apply toward tuition only. The earned scholarship will be applied to the quarter following the quarter in which the award was achieved. Students in their final quarter are not eligible for the Founder's Scholarship.

GRADUATE SCHOLARSHIPS

Qualified prospective Neumont graduate students will be considered for the following scholarships:

NEUMONT GRADUATE SCHOLARSHIP

To encourage enrollment of highly qualified students to graduate programs, Neumont University grants scholarships of up to 25% of tuition costs to those students who demonstrate superior academic competency and skills. Scholarship recipients must maintain a minimum 3.50 cGPA for continued scholarship eligibility. Scholarship recipients whose cGPA drops below the 3.5 minimum are given one quarter to remediate their cGPA and meet the requirement. Failure to remediate one's cGPA in the allotted timeframe will result in scholarship ineligibility for the duration of the program.

Please note the following information regarding Neumont scholarships:

- All decisions of the Neumont University Scholarship Committee are final.
- Scholarship awards to any student, for any quarter, are limited to the total amount of tuition due that quarter.
- A student may be a recipient of no more than two ongoing scholarships.
- Scholarships are subject to cancellation for:
  - Poor academic performance
  - Judicial infractions including Academic honesty infractions
  - Delinquent student accounts
  - Withdrawal from continuous enrollment

_FINANCIAL INFORMATION

FINANCIAL INFORMATION_

TUITION AND FEES

Tuition is charged per quarter based on the full-time rate in accordance with the chart below and subject to change. Expected length of attendance for undergraduates is ten (10) quarters, assuming a normal rate of progress. The calendar contains four quarters. However, the academic year is three quarters.

UNDERGRADUATE TUITION AND FEES

Application fee (non-refundable) $35 ($125 Int'l)
Required of all applicants

Registration Fee $100
Required of all first time students.

Tuition for students enrolled prior to Fall 2008 in the 8 quarter program $9,000 per quarter

Tuition for students enrolled after Fall 2008 in the 10 quarter program $7,200 per quarter

Per Credit Charge (applies to part-time students only) $495/QCH
Per quarter credit hour, assessed in place of the quarterly charge, only when the student is carrying less than 12 units per term

Student Activity & Facility Usage Fee $150 per quarter

Computer Fee* $350 per quarter
** Various courses may require a lab or software fee*

Neumont Approved Laptop purchase price estimate* $2,000
** Price is estimated, see the Laptop Specifications Worksheet for model information. Neumont Approved Laptops, purchased through Neumont's designated Laptop Vendor are required student materials. Outside equipment is not permitted for instructional use.*

For those who qualify, laptops may be purchased using Financial Aid. Any laptop purchased using Financial Aid is the property of Neumont University until paid in full by the funding source (federal or private lender). Students who withdraw owing a balance on their laptop must return their laptop to Neumont University within (3) days of withdrawal or remaining funds will be charged to the student's account.

Graduation Fee $100
Charged in last quarter of classes

Transcript Fee $5
Students are provided one official transcript upon graduation without charge, subsequent transcript requests will incur this fee

GRADUATE TUITION AND FEES

Application Fee (non-refundable) $35 ($125 Int'l)
Required of all applicants

Registration Fee $100
Required of all first time students

Tuition (assessed on a per credit basis) $550/QCH
Per quarter credit hour, assessed quarterly

Activity, Facility, and Technology Fee $150 per quarter

Graduation Fee $100
Charged in last quarter of classes

Transcript Fee $5
Students are provided one official transcript upon graduation without charge, subsequent transcript requests will incur this fee

GRADUATE CERTIFICATE TUITION AND FEES

Application Fee $35 ($125 Int'l)
Required of all applicants

Registration Fee $100
Required of all first time students.

Tuition (assessed on a per credit basis) $495/QCH
Per quarter credit hour, assessed quarterly

Activity, Facility and Technology Fee $150/quarter

ALL PROGRAMS

Late Registration Fee $100
Assessed to students who register for a course after the registration deadline

Late Dropped Class Fee $25

PART TIME STUDENTS

The minimum full-time course load for undergraduate students is 12 credits per quarter and 8 credits per quarter for graduate students. If a student falls below a full-time load, a per unit charge will be assessed in place of the quarterly charge described above.

TEXTBOOKS

Textbook costs per quarter are dependent upon the classes for which the student is registered and the textbooks purchased. Textbooks may be purchased through the online bookstore in accordance with official university policies. At the time of issuance, textbooks become the responsibility of the student.

FINANCIAL OBLIGATION

A student who has applied, is accepted, and has begun classes at the University assumes a definite financial obligation. Each student is legally responsible for his or her own educational expenses for the period of enrollment. Tuition and fees for each term are due in full prior to the start of the term. Students who are unable to pay in full prior to the start of the term must arrange a payment plan for the balance. Any student who is delinquent in a financial obligation to the University including damage to University property, library fines, or payment of tuition and fees is subject to exclusion from any or all of the usual privileges of the University.

PAYMENT POLICY

The University requires that arrangements for payment of tuition for all courses be completed in full at the time of registration. Students may choose to pay tuition and fees by check, cash, and/or credit card.

The University offers the services of several private companies that offer alternative methods of paying for educational costs. The Financial Aid Office will assist students in budgeting a payment plan using a wide range of financing alternatives. Students eligible for employer-sponsored tuition reimbursement benefits may request a deferred payment plan. Further questions regarding these payment plans should be directed to a representative in the Financial Aid Office.

Students qualifying for federal financial assistance programs may use certain types of loans and/or grants to satisfy their financial obligations at the time of registration, even though the aid may not have been physically disbursed to them or posted to their accounts. Students seeking to meet their financial obligations in this manner must understand that it is their responsibility to provide all information and documentation necessary to obtain all forms of financial aid by the deadlines imposed by the fund source. Failure to do so may result in the student having to provide immediate payment of all applicable tuition and fees.

FINANCIAL ASSISTANCE INFORMATION

Neumont University offers Financial Aid for those who qualify. It is the goal of the University to assist all eligible students in procuring financial aid that enables them to attend the University. The University participates in various federal and private student financial assistance programs. The financial aid programs are designed to provide assistance to students who are currently enrolled or accepted for enrollment, but whose financial resources are inadequate to meet the full cost of their education. A full description of financial aid programs is included below. Students should meet with the Financial Aid Office personnel to discuss the specific financial assistance available.

The primary responsibility for meeting the cost of education rests with the student and his or her family. All financial aid is awarded on the basis of need regardless of age, sex, race, color, religion, national or ethnic origin, marital or veteran status, or disability. Need is defined as the difference between the cost of education for one academic year and the amount a student's family can be reasonably expected to contribute to this cost of education for the same period.

Additional information regarding federal student aid can be found at www.studentaid.ed.gov by searching for the *Student Guide*. The direct link is:
http://studentaid.ed.gov/students/publications/student_guide/index.html

CONSUMER INFORMATION

Most of the information dissemination activities required by the Higher Education Amendments of 1998 have been satisfied within the *Course Catalog*. However, Financial Aid Office personnel are available to discuss consumer information in more detail with current and prospective students.

FEDERAL FINANCIAL AID

To be eligible for federal financial aid, a student must:

- Be enrolled as a regular student in an eligible program of study on at least a half-time basis (with the exception of Pell Grants);
- Have a high school diploma or the equivalent;
- Be a U.S. citizen, or an eligible non-citizen. Verification of eligible non-citizen status may be required;
- Have financial need, as determined by a needs analysis system approved by the Department of Education;
- Maintain Satisfactory Academic Progress;
- Provide required documentation for the verification process and determination of dependency status;
- Not owe a refund on a Pell Grant, FSEOG, or State Grant previously received from any college;
- Not have borrowed in excess of the annual aggregate loan limits for the Title IV financial aid programs;
- Be registered for the Selective Service, if a male born after December 31, 1959; and
- Have a valid Social Security number.

APPLICATION

To apply for financial aid, a student must complete the Free Application for Federal Student Aid (FAFSA). The application must be completed with extreme care and accuracy. Financial Aid Office personnel are available to assist students in the completion of this form and to answer any questions. The FAFSA is used to determine eligibility for all types of financial aid programs. Once processed, the application will produce an Expected Family Contribution (EFC), which determines eligibility.

Financial aid from federal programs is not guaranteed from one year to the next. Each student must reapply every academic year.

NEED AND COST OF ATTENDANCE

Once the application is completed, the information will be used in a formula established by the U.S. Congress that calculates need and helps determine eligibility. When combined with other aid and resources, a student's aid package may not exceed the student's calculated need.

Tuition and fees, books, and other education expenses are considered in determining the student's cost of attendance. These include personal expenses, room and board, and transportation. Information on how those costs are derived may be obtained from the Financial Aid Office.

BORROWER RIGHTS AND RESPONSIBILITIES

When a student takes on a student loan, he or she has certain rights and responsibilities:

The borrower has the right to receive the following information before the first loan disbursement:

- The full amount of the loan,
- The interest rate,
- When the student must start repaying the loan,
- The effect borrowing will have on the student's eligibility for other types of financial aid,
- A complete list of any charges the student must pay (loan fees) and information on how those charges are collected,
- The yearly and total amounts the student can borrow,
- The maximum repayment periods and the minimum repayment amount,
- An explanation of default and its consequences,
- An explanation of available options for consolidating or refinancing the student loan, and
- A statement that the student can prepay the loan at any time without penalty.

The borrower has the right to receive the following information before leaving school:

- The amount of the student's total debt (principal and estimated interest), what the student's interest rate is, and the total interest charges on the loan(s);
- A loan repayment schedule that lets the student know when his or her first payment is due, the number and frequency of payments, and the amount of each payment;
- If the student has FFELP loans, the name of the lender or agency that holds the student's loan(s), where to send the student's payments, and where to write or call if the student has questions;
- The fees that a student should expect during the repayment period, such as late charges and collection or litigation costs if delinquent or in default;
- An explanation of available options for consolidating or refinancing the student's loan; and
- A statement that the student can repay his/her loan without penalty at any time.

The borrower has a responsibility to:

- Understand that by signing the promissory note, the student is agreeing to repay the loan according to the terms of the note;
- Make payments on the student loan even if the student does not receive a bill or repayment notice;

- Continue to make payments until notification that the request for a deferment or forbearance has been granted;
- Notify the appropriate representative (institution, agency, or lender) that manages the student's loan when the student graduates, withdraws from school, or drops below half-time status; changes his or her name, address, or Social Security number; or transfers to another institution; and
- Receive exit counseling before leaving school.

POLICIES AND PROCEDURES FOR VERIFICATION OF APPLICANT INFORMATION

Some students will be selected by the U.S. Department of Education for a process called verification. If selected for verification, the student must provide documentation to support the data elements contained on the FAFSA. Generally, this documentation would include copies of income tax returns or a certification that a return was not required to be filed, sources and amounts of income, household size, number of family members attending post-secondary schools, dependency status, etc. The following procedures will be in effect for those students who have been selected for verification:

- Selected applicants must submit required verification documents within thirty (30) days of notification;
- Students will be informed of their responsibilities regarding the verification of application information, including the institution's deadline for completion of any actions required;
- Students will be given a clear explanation of the documentation needed to satisfy the verification requirements and the process for document submission;
- The institution will inform students in a timely manner of the consequences of failing to complete the verification requirements and the actions the University will take if the student does not submit the requested documentation within the time period specified;
- The institution will assist the student in correcting erroneous information;
- If the student fails to provide the required documentation within the established time frame, the student will be treated as a cash paying student until the documents are provided;
- If the student does not meet the deadline and is not capable of making cash payments, he or she may be dismissed from the University. If dismissed, the student may re-enter the University only when he or she can provide the documentation;
- Students will be notified if the results of verification change the student's scheduled award;
- Any suspected case of fraud will be reported to the Regional Office of the Inspector General, or, if more appropriate, to a state or local law enforcement agency having jurisdiction to investigate the matter. Referrals to local or state agencies will be reported on an annual basis to the Inspector General;
- No interim disbursements of Title IV aid will be made prior to the completion of verification.

ENTRANCE AND EXIT INTERVIEW/LOAN COUNSELING

The Department of Education requires that any student receiving a Federal Family Educational Loan be notified concerning his or her loans. The University counsels each student regarding loan in debtedness and gives each student an entrance test and mails an exit interview regarding the loan to ensure that the student understands the amount borrowed and the student's rights and responsibilities regarding repayment.

The student must report to the Financial Aid Office prior to withdrawal or graduation for loan counseling. The purpose of this session is to inform the student of his/her tentative total loans received while in attendance, refunds that may be made, and to provide the student with an estimated payment schedule. If the student is unable to meet with the Financial Aid Office, an exit interview will be mailed.

FINANCIAL AID PROGRAMS

All Title IV financial aid funds received by the institution will be credited to the student's account with the exception of requirements set forth in Section 682.604 of current federal regulations. The different types of financial aid programs available to those who qualify are discussed in detail below. Additional information may be obtained at www.fafsa.ed.gov.

SELECTION OF ELIGIBLE APPLICANTS

In accordance with Title 34 of the Code of Federal Regulations, Part 668.43(B)(3), the following procedures describe how aid recipients are selected from the pool of eligible applicants.

FEDERAL PELL GRANT

This grant is designed to assist students who desire to continue their education beyond high school. Federal Pell Grants are only awarded to undergraduate students who have not earned a Bachelor or professional degree. Each student is entitled to apply for a Federal Pell Grant. Eligibility is determined by the student's need, the cost of attendance, and the amount of money appropriated by Congress to fund the program. The amount of the grant is determined by a standard formula used by the Department of Education. The amount of grant available to the student will depend on the Expected Family Contribution (EFC) and the cost of attendance. For the '08 – '09 year Pell Grant Awards range from $609 – $5350 per academic year.

For many students, the Federal Pell Grant provides a "foundation" of financial aid to which other aid may be added to defray the cost of college education. Students or prospective students may secure an application to participate in the Federal Pell Grant program from the Financial Aid Office or from a high school counselor. The application will be transmitted electronically through a federally approved needs analysis system that will determine the applicant's Expected Family Contribution (EFC).

SUPPLEMENTAL EDUCATION OPPORTUNITY GRANT

Supplemental Education Opportunity Grant (SEOG) is awarded to applicants with a zero ($0) EFC as funds are available.

ACADEMIC COMPETITIVENESS GRANT (ACG)

An Academic Competitiveness Grant will provide up to $750 for the first year of undergraduate study and up to $1,300 for the second year of undergraduate study to full-time students who are U.S. citizens, eligible for a Federal Pell Grant, and who have successfully completed a rigorous high school program, as determined by the state or local education agency and recognized by the Secretary of Education. Second year students must also have maintained a cumulative grade point average (cGPA) of at least 3.00. The program will be available for the first time for the 2006-07 school year for first year students who graduated from high school after January 1, 2006 and for second year students who graduated from high school after January 1, 2005. The Academic Competitiveness Grant award is in addition to the student's Pell Grant award.

NATIONAL SCIENCE AND MATHEMATICS ACCESS TO RETAIN TALENT GRANT OR NATIONAL SMART GRANT (SMART)

A National SMART Grant will provide up to $4,000 for each of the third and fourth years of undergraduate study to full-time students who are U.S. citizens, eligible for a Federal Pell Grant, and majoring in physical, life, or computer sciences, mathematics, technology, or engineering or in a foreign language determined critical to national security. The student must also have maintained a cumulative grade point average (GPA) of at least 3.0 in coursework required for the major. The National SMART Grant award is in addition to the student's Pell Grant award. There are additional eligibility requirements for both the ACG and SMART Grant. Please visit www.fafsa.ed.gov for more information.

FEDERAL FAMILY EDUCATIONAL LOAN PROGRAM (FFELP)

Subsidized Federal Stafford Loans, Unsubsidized Federal Stafford Loans, and Federal PLUS Loans comprise the Federal Family Educational Loan Program (FFELP) and are discussed individually below.

SUBSIDIZED FEDERAL STAFFORD LOANS

Federal Stafford loans are low interest loans that are insured by a guaranty agency and made to the student by a lender such as a bank, credit union, or savings and loan association. The subsidized Stafford loan is awarded based on financial need.

The subsidized Stafford loan is deferred while the student is enrolled and for a period of six months beyond the student's last date of attendance. During this period the interest is paid by the federal government as long as the student remains enrolled in at least a half-time status. Deferments after the student drops below half-time status are not automatic and the student must contact the lender concerning his or her loan. Applications for deferment can be obtained from the Financial Aid Office or from the lender. For additional deferment information, contact the Financial Aid Office.

For loans first disbursed on or after July 1, 2007, a Stafford loan made to any Stafford borrower, regardless of whether the borrower had FFELP loans outstanding, will have a fixed interest rate of 6.8 percent.

If the student is a dependent undergraduate student, he or she may borrow up to:

- $3,500 if he or she is a first-year student enrolled in a program of study that is at least a full academic year.
- $4,500 if he or she has completed the first year of study and the remainder of the program is at least a full academic year.
- $5,500 a year if he or she has completed two years of study and the remainder of the program is at least a full academic year.

For periods of undergraduate study that are less than an academic year, the amounts the student can borrow will be less than those previously listed. Ask Financial Aid Office personnel for specific details. The maximum indebtedness for a dependent undergraduate student is $23,000.

Graduate students may borrow up to $20,500 for each academic year with no more than $8,500 of this amount being in subsidized

loans. The maximum total indebtedness for a graduate student is $138,500 with no more than $65,500 of this amount being in subsidized loans

Origination fees and insurance premium fees, which may vary by lending institution, will be deducted proportionately from each disbursement and paid to the federal government.

UNSUBSIDIZED FEDERAL STAFFORD LOANS

The unsubsidized Stafford loan is available to eligible students, regardless of family income and is designed for those who do not qualify, in whole or in part, for subsidized Stafford loans. An unsubsidized Stafford loan is not awarded based on need. The term "unsubsidized" means that interest is not paid for the student during the "in-school" period.

The terms of an unsubsidized Stafford loan are the same as those for a subsidized Stafford loan with the exceptions of the following: the government does not pay interest on the student's behalf on an unsubsidized Stafford loan. All interest that accrues on the loan during enrollment and the grace period is required to be paid by the student. The student has two options of repayment of the accrued interest: (1) make monthly or quarterly payments to the lender; or (2) the student and the lender may agree to capitalization of the accrued interest. If the student is an independent undergraduate student or a dependent student whose parents are unable to get a PLUS loan, he or she may borrow up to:

- $9,500 if he or she is a first-year student enrolled in a program of study that is at least a full academic year. (No more than $3,500 of this amount may be in subsidized loans.)
- $10,500 if he or she completed one year of study and the remainder of the program is at least a full academic year. (No more than $4,500 of this amount may be in subsidized loans.)
- $12,500 a year if he or she completed two years of study and the remainder of the program is at least a full academic year. (No more than $5,500 of this amount may be in subsidized loans.)

For periods of undergraduate study that are less than an academic year, the amounts the student can borrow will be less than those previously listed. The maximum total indebtedness for an independent undergraduate student is $57,500. (No more than $23,000 of this amount may be in subsidized loans.)

The student will be charged an origination fee/insurance premium on the amount of the unsubsidized Stafford loan not to exceed 4 percent. The fee will be deducted proportionately from each disbursement and paid to the federal government.

FEDERAL PARENT LOANS FOR UNDERGRADUATE STUDENTS (PLUS)

The Federal PLUS loan is available to parents of dependent students to help pay for the educational expenses of the student. PLUS loans are not based on need, but when combined with other resources, cannot exceed the student's cost of education.

Parents may borrow up to cost of attendance minus other aid per eligible dependent student. There is a 3 percent origination fee on a PLUS loan made on or after July 1, 2006, and up to 1 percent insurance premium may be deducted proportionately from the loan principal after each payment. The interest rate is a fixed 8.5 percent.

Repayment begins within 60 days of the final disbursement unless the parent qualifies for and is granted a deferment by the lender. There is no grace period for these loans. Interest begins to accumulate at the time the first disbursement is made, and parents will begin repaying both the principal and interest while the student is in school. Although the minimum payment amount is $50 per month with at least five years (but no more than 10 years) of repayment, the actual payment and schedule is determined by the total amount borrowed. Applications can be obtained from the Financial Aid Office or from the lender.

For deferment information, contact the Financial Aid Office.

ALTERNATIVE FINANCING PROGRAMS

Neumont University offers alternative financing arrangements to supplement Title IV financial aid. These loans are not guaranteed by the federal government and may be subject to credit approval. Some of these loan programs are funded by the University and are administered (collection of monthly payments, servicing of the loan, etc.) by an independent servicing company. The amount that a student may borrow under these alternative loan programs is limited by several factors, including the federal guidelines which establish the amount of financial aid for which the student is eligible, less the expected family contribution toward the educational costs and any other types of financial aid for which the student has qualified or may qualify. If a student has exhausted all external sources of financial aid, both

federal and private, he or she may apply for a University-funded loan, which is serviced by the National Loan Servicing Center (NLSC). Application for this type of funding takes into consideration additional factors including the availability of funds and the academic qualifications of the applicant. More information about alternative loan programs, and the Neumont University NLSC program, may be obtained by visiting the Financial Aid Office.

VETERAN'S ASSISTANCE PROGRAMS

Programs at Neumont University are approved for veterans training.

VETERAN EDUCATION AND EMPLOYMENT ASSISTANCE ACT OF 1976 AS AMENDED

Veterans eligible for training under the Montgomery G.I. Bill are entitled to a monthly allowance while attending the University. Veterans with over three years of active duty or two years of active duty and four years in the selected reserve are entitled to a maximum of 36 months of training. The University will assist in preparing and submitting applications.

WAR ORPHAN EDUCATIONAL ASSISTANCE

This program provides financial assistance for the education of sons and daughters of veterans who died or were permanently and totally disabled in, or as a result of, service in the Armed Forces of the United States. Benefits are similar to those of the G.I. Bill. Widows and wives of disabled veterans may also be eligible for this program. The University will assist in preparing and submitting applications.

VOCATIONAL REHABILITATION FOR VETERANS

Veterans disabled during war time or in certain peace time service may be eligible for educational benefits and training under this program. Applications must be filed directly with the Veterans Administration.

Students receiving veterans' benefits are required by the Veterans Administration to provide transcripts of credit from all post-secondary schools previously attended.

SCHOLARSHIPS

The University offers many scholarship opportunities for both new and continuing students. For information on scholarships for new students, please see the Scholarship Section of this catalog for a full description of scholarships available and application deadlines.

The University has quarterly scholarship opportunities for continuing students as described in the Scholarship section of the *Course Catalog*.

CANCELLATIONS, WITHDRAWALS AND REFUND POLICY

CANCELLATIONS

The applicant's signature on the Neumont University application does not constitute admission into the University until the student has been accepted for admission by the Neumont University Acceptance Committee. The applicant may request cancellation until the end of the third day of the first term of attendance. The refund will be made within 30 days of receipt of such notice. First time students who withdraw within three calendar days after classes have commenced will not be assessed tuition charges.

WITHDRAWALS AND REFUNDS

The University employs a fair and equitable refund policy that complies with federal, state, and accreditation guidelines for the return of unearned tuition and fees in the event of withdrawal. To withdraw a student should give written notice to the Registrar's Office. Written notice may be hand delivered or mailed to Neumont University, Attention Registrar, 10701 South River Front Parkway, Suite 300, South Jordan, Utah 84095.

Any monies due a student shall be refunded within 30 days of the date on which Neumont University has determined that a withdrawal has taken place. A withdrawal is considered to have occurred on the date that the student provides to the school official notification of his or her intent to withdraw. Notification should be provided in writing to the Office of the Registrar. If the student ceases attendance without providing official notification, the withdrawal date used in the refund and federal Return to Title IV calculation is the mid-point of the quarter. Alternatively, the institution may use the last date of attendance at an academically-related activity as the withdrawal date.

If the student is unable to begin the institution's withdrawal process or otherwise provide official notification of his or her intent to withdraw because of illness, accident, or other such circumstances beyond the student's control, a third party may provide notice to the Registrar's office. The date of withdrawal will be the date that most accurately reflects when the student ceased academic attendance due to the circumstances beyond the student's control.

When a student withdraws, the institution must consider two separate calculations: the return to Title IV and the institutional refund.

RETURN TO TITLE IV

The first calculation is done only for students who have received Title IV student financial aid and is required by federal law, which specifies the formula for the calculation (see Federal Student Aid Guide).This "Return to Title IV" calculation is made to determine how much federal grant and loan assistance the student has earned under the federal policy. Any unearned funds must be returned to the federal student aid programs.

INSTITUTIONAL REFUND POLICY

The second calculation is to determine how much of the tuition and fees the institution may retain under the institutional refund policy. Students who have completed more than 60 percent of the quarter will receive no refund.

For students who terminate their schooling before completing more than 60 percent of the quarter, the University will perform a pro rata refund calculation.

Under a pro rata refund calculation, the University is entitled to retain only the percentage of charges (tuition, fees, etc.) proportional to the period of enrollment completed by the student. The period of enrollment completed by the student is calculated by dividing the total number of weeks in the term into the number of weeks completed in that period (as of the withdrawal date). The percentage of weeks attended is rounded up to the nearest 10 percent and multiplied by the institutional charges for the quarter.

The period of enrollment completed by the student is calculated by dividing the number of days in attendance by the total number of days in the term.

Any unpaid balance of tuition and fees that remains after calculating the institutional refund policy and returning the amount of unearned financial aid funds, if any, based on the Federal Return of Title IV Funds policy, must be paid by the student to the institution.

Timely notification by the student will result in the student being charged tuition and fees only for the portion of the period of enrollment that he or she attended as well as ensuring a timely return of federal funds and any other refunds that may be due. Failure of students to provide official notification to the University of the intent to withdraw means that the students will continue to be obligated for the tuition and fees and will delay both the return of federal funds to the appropriate programs and the return of any other refunds that may be due.

It is extremely important that the student understand the implications of withdrawing before completing the coursework in the quarter because of its potential impact on the student's finances. The Financial Aid Office provides assistance to students to determine the exact impact of early withdrawal on their repayment obligations.

If the student (or parent, in the case of a PLUS loan) is eligible for additional funds at the time of withdrawal, the student may receive additional SFA funds.

If the student received more SFA funds than he or she earned under the Federal Return of Title IV Funds policy, the institution, and in some cases the student, is required to return the unearned funds to the Federal program(s) or lender, as applicable.

RETURN OF STUDENT FINANCIAL AID (SFA) FUNDS

If it is determined that SFA program funds must be returned, based on the student's financial aid award, the return of SFA funds will be made in the following order:

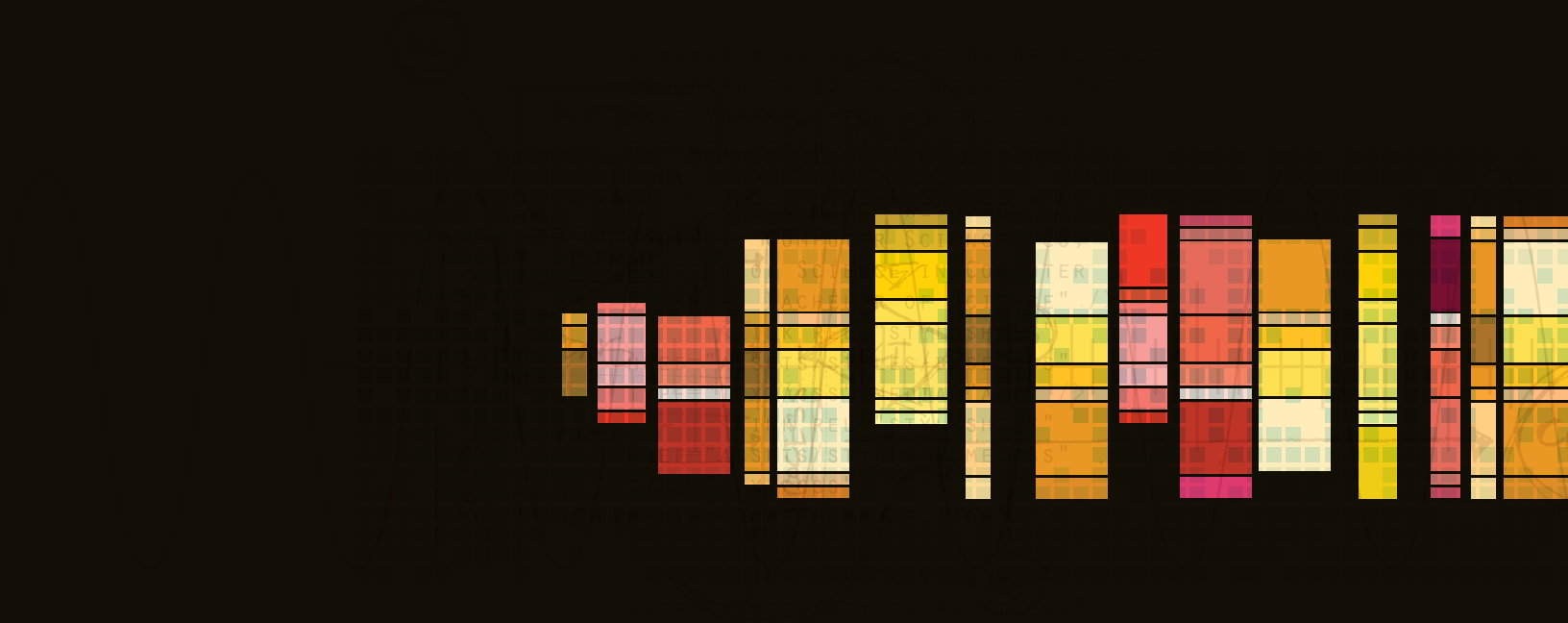
1. Unsubsidized Federal Stafford Loan Program;
2. Subsidized Stafford Loan Program;
3. Federal PLUS Loan Program;
4. Federal Pell Grant Program; and any
5. Other grant or loan assistance authorized by Title IV of the HEA.

REFUNDS UNDER EXCEPTIONAL CIRCUMSTANCES

Tuition and fees for the current term will be refunded in full under the following circumstances:

- Courses cancelled by the University;
- Involuntary call to active military duty;
- Exceptional circumstances, with approval of the President of the University (or designee).

_ACADEMIC INFORMATION



ACADEMIC INFORMATION_

DEFINITION OF CREDIT

The University awards credit in the form of quarter credits. One quarter credit is equivalent to a minimum of 10 class hours of theory or lecture instruction, a minimum of 20 hours of supervised laboratory instruction, or a minimum of 30 hours of internship and/or externship practice.

ATTENDANCE POLICY

The purpose of the Attendance Policy is to foster those behaviors that facilitate student learning and reflect the standards expected in the workplace.

Students are expected to be present at all of their regularly scheduled classes. A student may be assigned a zero for any assignment missed because of absences. Grades may be lowered because of excessive absences. Students are also expected to be in class on time and remain for the entire session. Grades may also be lowered due to violations of these policies. Attendance is particularly important at Neumont University since many of the courses require collaborative learning activities among groups.

Students with poor attendance may be subject to removal from a class and/or advising. Neumont University reserves the right to dismiss a student based upon poor attendance.

Instructors may have an even more rigid attendance policy for their individual courses that will be announced at the beginning of each quarter and included in the course syllabus.

Refer to the *Student Handbook* for the specific details regarding the Neumont University Attendance policy.

LEAVE OF ABSENCE

Students experiencing circumstances that may make it necessary to withdraw should see the Office of Student Affairs or refer to the *Student Handbook*.

GRADING SYSTEM AND PROGRESS REPORTS

Grades earned in each course are recorded on the student's permanent record. Evaluation of student achievement will be made in relation to the attainment of the specific objectives. At the beginning of a course, the instructor will provide students with a syllabus detailing these objectives and the basis upon which grades are determined. A cumulative grade point average (cGPA) of 2.00 is required for graduation. A student who fails a course is permitted to continue as long as the student makes satisfactory progress towards graduation.

Grade definitions are as follows:

GRADE	GRADE POINT	INCLUDED IN RATE OF PROGRESS	INCLUDED IN GPA
A	4.00	Y	Y
A	3.70	Y	Y
B+	3.30	Y	Y
B	3.00	Y	Y
B-	2.70	Y	Y
C+	2.30	Y	Y
C	2.00	Y	Y
C-	1.70	Y	Y
D+	1.30	Y	Y
D	1.00	Y	Y
D-	0.70	Y	Y
F *(Fail)*	0.00	Y	Y
P *(Pass)*	N/A	Y	N
TR *(Transfer)*	N/A	N	N
TO *(Test out)*	N/A	Y	N
IW *(Involuntary Withdrawal)*	N/A	N	N
W *(Withdrawal)*	N/A	Y	N
WF *(Attendance Policy Violation)*	0.00	Y	Y
WU *(Withdrawal Unsatisfactory)*	0.00	Y	Y
WS *(Withdrawal Satisfactory)*	N/A	Y	N
INC *(Incomplete)*	N/A	Y	N

GPA AND CGPA CALCULATIONS

The grade point average (GPA) for each term and cumulative grade point average (cGPA) are calculated on courses taken in residence at the University. The GPA for each term is calculated by dividing the points earned that quarter by the total cumulative credits attempted for the GPA. The cGPA is calculated by dividing the total cumulative points earned by the total cumulative credits attempted for the GPA.

The number of points awarded for each course is determined by multiplying the points listed for each letter grade by the number of credits of the course. For example, a grade of A in a four-credit course earns 4 (credits) X 4.0 (points) for a total of 16.0 points and a grade of C in a three-credit course earns 3 (credits) X 2.0 (points) for a total of 6.0 points.

W/WU/WS/WF/IW COURSE WITHDRAWAL

Students who officially withdraw from a course after the add/drop period but before the completion of the first 21 calendar days of the term will be given a 'W' (withdraw) grade for that course. Between calendar day 22 and calendar day 35 of the course, students will be given a 'WS' (withdraw satisfactory) or 'WU' (withdraw unsatisfactory), depending on the status of class work accomplished as of the withdrawal date. Students who are enrolled in the University are not allowed to withdraw from a class after calendar day 36 of the term.

A grade of 'WF' is given to a student for violation of Neumont's Attendance Policy. Refer to the Student Handbook for the specific details regarding the Neumont University Attendance Policy.

An official course withdrawal is initiated with the Office of the Registrar. A 'W' or a 'WS' grade does not apply to a student's grade point average but does apply to a student's rate of progress. A 'WU' and 'WF' grades are applicable to both a student's grade point average and course completion ratio and is the equivalent to a grade of 'F'.

An 'IW' (involuntary withdrawal) does not apply to a student's grade point average nor does it apply to a student's rate of progress.

Final grades are reported at the completion of each grading term and are provided to each student.

INCOMPLETE (INC)

An Incomplete (INC) is a temporary designation given at the instructor and Provost's discretion to a student whose course work has been of acceptable quality but who, through no fault of his or her own, is unable to complete the required course material on schedule. This designation indicates that more than 50% of the course work has been completed, the student has been in attendance, and he or she satisfactorily completed the required work. All class assignments must be completed within ten weeks of the due date, but no later than the first day of the following quarter. An Incomplete (INC) that has not been resolved by the first day of the following quarter will automatically be assigned a letter grade of 'F'. In the interim, the grade of INC will be calculated as credits attempted in the calculation of successful course completion percentage, but it will not impact the student's GPA or C GPA.

ADD/DROP PERIOD

The Add/Drop Period is defined as the first five school days of the term. Students may drop or add courses during this period.

COMMENCEMENT

Commencement exercises will be held at least once per year. All students completing their course work are included in the graduating class of that year. All students upon whom degrees are to be conferred are encouraged to participate in the commencement exercises.

Graduates must fulfill all financial obligations, including tuition charges, fees, and other expenses, before the degree is granted.

GRADUATION WITH HONORS

Undergraduate students who have earned the requisite credits for graduation with the following cumulative grade point averages are entitled to the appropriate honors: 3.5–3.75, cum laude; 3.76–3.89, magna cum laude; 3.90 and above, summa cum laude.

TRANSFER TO OTHER COLLEGES

The University neither implies nor guarantees that credits completed at the University will be accepted by other institutions. Since rules and grade requirements vary, each institution has policies that govern the acceptance of credit from other institutions. Transfer of credit is a privilege granted by the institution to which a student may seek admission. Therefore, if the student anticipates a transfer of credits earned at Neumont University, the student must have already inquired with those institutions from which recognition of academic work at the University will be sought.

ACADEMIC LOAD

A student taking twelve (12) or more quarter hours toward the Bachelors and Associates degree will be classified as a full-time student for that term. A student taking eight (8) or more quarter hours toward

the Master degree will be classified as a full-time student for that term.

REPEATING COURSES

A student may repeat a course taken at the University in order to improve their cumulative grade point average. Credit is only given for the last grade earned when repeating a course. Repeated courses will appear on the student's transcript. The first attempt will also be shown; however, the cumulative grade point average will be recomputed to count only the last attempt. All repeats will be charged at the current tuition rate.

Credits may only be earned once per course. If a student retakes a course from which they have earned credit, the credits for the first course completed will not count toward earned credits. However, those credits will count toward the rate of progress as credits attempted.

ACADEMIC DEFICIENCIES

Following the conclusion of each grading period, the grades of each student will be audited by the Registrar. As a result of this audit, it may be necessary to reschedule the student or to place the student on a status of academic probation or academic dismissal.

STANDARDS OF SATISFACTORY ACADEMIC PROGRESS

Students must maintain Satisfactory Academic Progress (SAP) in order to remain eligible to continue as regularly enrolled students of the University. Additionally, SAP must be maintained in order to remain eligible to continue receiving federal financial assistance.

Satisfactory Academic Progress is determined by measuring the student's cumulative grade point average (cGPA) and the student's rate of progress toward completion of the academic program. If a student fails to meet the required standards of SAP, he or she will be placed on academic probation. Standards of SAP apply to all students.

The elements of Satisfactory Academic Progress are as follows:

- Cumulative grade point average
- Rate of progress
- Maximum time frame

A student may not transfer to another Neumont program, or apply to transfer, while on academic probation, following dismissal from one program, or while on Extended Enrollment. That is, the student must be in good standing with the university to apply for, or complete, the transfer process.

If there is grade change (including resolution of an incomplete) SAP is calculated after the change to determine whether the student is in good standing with the university.

CUMULATIVE GRADE POINT AVERAGE (CGPA) REQUIREMENTS

Students must meet specific cumulative grade point average requirements at specific points during their enrollment in order to be considered to be making SAP. Satisfactory Academic Progress is defined as a cGPA equal to or exceeding 2.00. The quarterly and cumulative GPA will be evaluated at the end of every term, after grades have been posted, to determine if the student's cGPA is in compliance. Refer to the chart below for cGPA checkpoints and procedures.

RATE OF PROGRESS

In addition to the cGPA requirements, a student must successfully complete a certain percentage of the credits attempted. Credits attempted are defined as those credits for which students are enrolled at the end of the add/drop period of each academic term. These percentage requirements are noted in the tables below, along with the cGPA requirements. The percentage completion requirements will be reviewed at the end of each academic year, after grades have been posted, to determine if the student is progressing satisfactorily.

RATE OF PROGRESS (ROP)	cGPA** (MEASURE EVERY QUARTER)	% OF ATTEMPTED CREDITS COMPLETED
First checkpoint*	2.00	60%
Each subsequent checkpoint*	2.00	66%

* *For BSCS students, the first ROP checkpoint is 45-89 credits attempted; the second checkpoint is 90-134 credits attempted; the third checkpoint is 135-179 credits attempted; the fourth and fifth checkpoints, if needed, are 180-224 and 225-270 credits attempted. For ASCS students, the first ROP checkpoint is 30-59 credits attempted; the second checkpoint is 60-89 credits attempted; the third checkpoint, if needed, is 90-120 credits attempted.*

** *Students with a cGPA of 1.99 or lower at checkpoints 2, 3, 4, 5, etc., will be dismissed. Note that students in this situation are not eligible for probation. See Academic Dismissal Appeal procedures in this catalog.*

The Rate of Progress calculation for students who transfer from the BSCS program to ASCS program will be calculated as follows: Of the credits that transfer from the BSCS program to the ASCS program, ROP = credits attempted / credits earned. For students who transfer from the ASCS program to BSCS program, ROP will be calculated based on all credits attempted and earned at Neumont.

MAXIMUM TIME FRAME

A student must complete all of the requirements for graduation without exceeding 150 percent of the required quarter credit hours for the program in which they are enrolled. Therefore, for the Bachelors student the total number of credits that may be attempted (maximum time frame) is 270 quarter credits (150 percent of 180). For the Associates student the total number of credits that may be attempted is 135 (150 percent of 90). For the graduate student the total number of credits that may be attempted is 81 credits (150 percent of 54).

If it becomes mathematically impossible to complete the program within the maximum time frame, a student may be immediately dismissed. The student will not be eligible to appeal. However, the student may continue as a Non-Degree Seeking student at the regular tuition rate until they have completed the maximum allowable credits. (See the previous paragraph for information regarding the maximum allowable credits for each program.)

PROBATION AND DISMISSAL

If a student falls below the requirements of SAP at the end of any quarter, the student will be notified by the Office of the Registrar and placed on academic probation. The student will be notified by using his or her official Neumont student email account. Students placed on academic probation may continue as regular students and be eligible to receive financial aid. A student will be removed from probation only when he or she fully meets the standards for SAP for the academic program. If the student does not meet SAP requirements by the end of the following quarter, he or she will be notified of the deadline to appeal the dismissal or will be dismissed from the university. A student may be dismissed if it becomes impossible to cure SAP within the maximum time.

For additional information, see the *Student Handbook*.

ACADEMIC DISMISSAL APPEAL

Students that have been notified that they will be dismissed will have the opportunity to appeal the dismissal for mitigating circumstances (i.e. death in the family, sickness of the student, etc.). Please refer to the *Student Handbook*.

If the Academic Dismissal Appeal is accepted, the student is allowed one additional quarter to meet SAP requirements. The outcome of the appeal and conditions for reinstatement are recorded by the Appeal Committee and communicated to the Office of Student Affairs and the Registrar. Student Affairs then communicates the appeal decision and the conditions to the student.

If a student does not appeal within the guidelines outlined in the *Student Handbook*, or the appeal is denied, the student will be dismissed from the school. Students on dismissal will lose their eligibility to receive federal financial aid. The lender will be notified of the student status change within 30 days from the last date of attendance.
No student on probation will be allowed to graduate. Please refer to the *Student Handbook*.

EXTENDED ENROLLMENT STATUS

A student on academic dismissal may be eligible to continue in an extended-enrollment status but will be subject to the following limitations:

- The student may be in extended-enrollment status for one additional quarter beyond the quarter in which they were dismissed.
- The student will not be eligible for federal financial aid and will be charged for courses at the current tuition rate.
- Credits earned during extended enrollment may be counted toward program requirements.
- While in an extended-enrollment status, students must correct academic deficiencies. Students will not be eligible to graduate if they exceed one and one-half times the standard time frame, either as a regular student or in an extended-enrollment status.
- The student must petition the Associate Dean of Students in writing for approval of an extended-enrollment status. If extended-enrollment status is granted, the student must meet with someone from the Associate Dean of Students office and agree to a written corrective action plan. This corrective action plan will be placed in the student's academic file.
- At the end of the extended-enrollment status period, if the student has met Satisfactory Academic Progress requirements he or she will be eligible to be a regular active student and eligible for federal financial aid. If Satisfactory Academic Progress is still not met, he or she will be dismissed from classes at the University, with no opportunity to appeal.
- Approval from the Associate Dean of Students.

APPLICATION OF GRADES AND CREDITS

Transfer credits are not included in the calculation of cGPA but are included in the "Total Number of Credits Earned."

A grade for a repeated course replaces the original grade in the calculation of cGPA; however, the original course credits remain included in the "Total Number of Credits Attempted" in order to determine the required progress level. The original credits are considered as not successfully completed.

TRANSCRIPTS

All student academic records are retained, secured, and disposed of in accordance with local, state, and federal regulations. All student record information is maintained on the University computer system. Permanent records are kept in paper form or electronically. The University maintains complete records for each student that include grades, prior education and training, and awards received.

Student academic transcripts, which include grades, are available upon written request by the student. Student records may only be released to the student or his/her designee as directed by the Family Educational Rights and Privacy Act of 1974.

Transcript requests must be made in writing to the Office of the Registrar. Official transcripts will be released to students who are current with their financial obligation (i.e., tuition and fees due to the University are paid current per the student's financial agreement).

Students are provided one official transcript free of charge upon completing graduation requirements. There is a fee for each additional official transcript requested.

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