HARRISBURG UNIVERSITY

OF SCIENCE AND TECHNOLOGY

Catalog 2008–2009

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University Contact Information

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Welcome to Harrisburg University of Science and Technology

An adventure in learning and the creation of a rewarding career await the student at Harrisburg University of Science and Technology. This young and innovative university provides the best of both worlds – high quality classroom education and practical, experiential learning in business and industry. At the University, the student will learn to succeed in today's most important fields – the sciences and technology -- and they learn in new and exciting ways, taking the best from many areas of study. Applied learning that the student can put to use is at the core of the University's efforts.

To prepare students for success after graduation, the University emphasizes team-based learning, collaboration, and strong workplace ethics. Direct business and industry experience, learning through problem-solving, and frequent feedback from teachers and mentors give Harrisburg's students an advantage – the power of knowing how to do the work that people actually do. Being engaged in real-world projects and tasks prepares the student to consider multiple viewpoints and to connect new input to existing information. Learning here, in the University of the future, students get prepared for the challenging and exciting careers of the future. Learning at the University takes place in the classroom, on campus, in the business setting, and within organizations in the community.

The University welcomes and appreciates diverse perspectives. Its urban locale and diverse student body and faculty make different ways of thinking about things an exciting part of the learning environment. Just imagine how new ideas grow from multiple viewpoints and how encouraging the exchange of those ideas among various individuals, groups, organizations, cultural traditions and schools of thought inspires learning! Students at Harrisburg University learn to make reasoned decisions based on tested convictions, while also demonstrating an appreciation for the needs and views of others.

This University Catalog is updated annually and made available in electronic form from the Harrisburg University website. Paper copies can be obtained on request from the Office of Student Services at 717-901-5157. Please refer to the website at www.HarrisburgU.net for updated lists of courses and descriptions.

Harrisburg University has made every effort to make this catalog accurate; however, all policies, procedures, fees and charges are subject to change at any time by appropriate action of the faculty, University administration, or Board of Trustees.

Student Responsibility Statement

A student of Harrisburg University has the responsibility to engage fully in assigned work, make connections, and develop professional competencies. The University is new in both thought and ideas. The student should be a partner in this endeavor, now and in the future. It is the student's responsibility to become engaged in the University's community of learners and develop a strong professional and ethical foundation as an individual.

Statement of Community Values

Underlying the University's mission are basic values that all members of the campus community must respect. These indispensable community values include:

- personal integrity, honesty, and ethical decision making;
- the right of every individual to be treated with respect and dignity as a member of a learning organization;
- freedom of intellectual inquiry in the pursuit of truth- even if it defies commonly understood theories;
- acceptance and appreciation of human diversity regarding race, gender, religion, sexual orientation, age, ability, ethnicity, and political views;
- freedom from violence aimed at limiting the freedom of, interfering with, or disrupting university activities; and
- recognition that civic engagement is a component of the intellectual development of students and provides a path for knowledge in the service of the community.

History

The University was incorporated in the Commonwealth of Pennsylvania on December 12, 2001, making it the first science and technology-focused, non-profit, comprehensive university to be established in Pennsylvania in more than 100 years. Established to address the Capital Region's need for increased educational opportunities in science, technology, engineering and mathematics (STEM) careers, Harrisburg University represents a major step to attract, educate, and retain Pennsylvania's diverse 21st century knowledge-based workforce.

A grand concept that was championed for more than a decade by business leaders, government officials, and the regional news media, Harrisburg University was built from concept to reality in less than a decade. The Pennsylvania Department of Education granted the University its charter in 2005, and the inaugural class of 113 students arrived in August of that same year to begin their educational journey in the new, high-tech environment.

An independent institution, the University offers academic and research programs designed to meet the needs of the region's youth, workforce and businesses. By aligning traditional undergraduate and graduate degrees with science and technology-based economic development and experiential learning, the University serves as a catalyst for regional economic prosperity and is expanding, attracting and creating economic opportunities in Central Pennsylvania.

Recognized as fulfilling a significant need, the University is a model public-private partnership, having received millions of dollars in external support from the corporate sector, private individuals, and state and federal government. Companies such as Hershey Foods, Select Medical and PPL along with other leading businesses like Gannett Fleming, Cleveland Brothers, Tyco Electronics, Reynolds Construction, and Penn National Insurance have all supported the University.

Early public- and private-sector investments have made it possible for Harrisburg University to offer a student-centered and technologically-advanced education. The physical facilities of the University include a $73-million state-of-the-art Academic Center located at 326 Market Street in Harrisburg. The 16-story

technology-laden facility accommodates up to 1,600 students and features 24 classrooms, 6 scientific teaching labs, 12 student team meeting areas, 6 seminar rooms and a 125-seat auditorium with audio-conferencing capabilities.

The University's experiential learning model, coupled with career preparation and development, has led to partnerships aligned with the University's mission and vision. The National Science Foundation, for example, funds the Science Education for New Civic Engagements and Responsibilities (SENCER) program housed within the National Center for Science and Civic Engagement at the University. Partners from across industry, academia and government are providing students on-site internships, mentoring, and advanced learning opportunities connected to the latest trends, discoveries, and developments in biotechnology through the Department of Community Economic Development funded Capital Area Biotechnology Partnership. Carnegie Mellon University in Pittsburgh is a partner in the Advanced Center for Learning and Entertainment Technology at the University.

Mission Statement

The Harrisburg University of Science and Technology is an independent educational institution that offers academic and research programs in mathematics, science and technology designed to meet the needs of the region's youth, workforce, and businesses, and to expand, attract, and create economic opportunities in the region.

Approved by the Board of Trustees on November 12, 2002.
Re-affirmed by the Board of Trustees on January 31, 2008.

Academic Calendars

Semester Calendar 2008-2009

Harrisburg University operates on a semester calendar with intense summer sessions for selected offerings. Changes to the calendar are at http://www.HarrisburgU.net/academics/calendar.php

SEMESTER I (Fall), 2008

Registration Begins	Monday, April 7, 2008
Graduate Student Orientation	Thursday, August 28, 2008
New Student Orientation (a.m.)	Tuesday, September 2, 2008
Labor Day Holiday (University Closed)	Monday, September 1, 2008
First Day of Classes – Add/Drop Period Begins	Tuesday, September 2, 2008
Last Day to Withdraw with 75% Tuition Refund	Saturday, September 6, 2008
Add/Drop Period Ends and Census Date	Saturday, September 13, 2008
Last Day to Withdraw with 50% Tuition Refund	Saturday, September 13, 2008
Last Day to Withdraw with 25% Tuition Refund	Saturday, September 20, 2008
Mid-Semester Deficiencies Due to Office of Records and Registration	Monday, October 20, 2008
Mid-Semester Warning Letters Mailed	Wednesday, October 22, 2008
Academic Advising Week	Monday-Friday, October 27-31, 2008
Registration begins for Semester II, 2008-2009	Monday, November 3, 2008
Last Day to Withdraw from a Course with a Grade of "W"	Saturday, November 8, 2008
Thanksgiving Holiday (No classes 11/26, University Closed 11/27–30)	Wednesday-Sunday, November 26-30, 2008
Classes Resume	Monday, December 1, 2008
Last Day of Classes	Saturday, December 6, 2008
Final Examinations	Monday-Saturday, December 8-13, 2008
Final Grades Due to Office of Records & Registration	Tuesday, December 16, 2008

SEMESTER II (Spring), 2009

New Student Orientation	Saturday, January 3, 2009
First Day of Classes – Add/Drop Period Begins	Monday, January 12, 2009
Last Day to Withdraw with 75% Tuition Refund	Saturday, January 17, 2009
Martin Luther King, Jr. Birthday (University Closed)	Monday, January 19, 2009
Add/Drop Period Ends and Census Date	Saturday, January 24, 2009
Last Day to Withdraw with 50% Tuition Refund	Saturday, January 24, 2009
Last Day to Withdraw with 25% Tuition Refund	Saturday, January 31, 2009
Mid-Semester Deficiencies Due to Office of Records and Registration	Friday, February 27, 2009
Spring Recess	Monday-Saturday, March 2-7, 2009
Mid-Semester Warning Letters Mailed	Wednesday, March 4, 2009
Classes Resume	Monday, March 9, 2009
Academic Advising Week	Monday - Friday, March 9-13, 2009
Registration Begins for Semester III, 2008 and Semester I, 2009	Monday, March 16, 2009
Last Day to Withdraw from a Course with a Grade of "W"	Saturday, March 28, 2009
Reading Days / Easter Holiday (No Classes)	Thursday-Monday, April 9-13, 2009
Classes Resume	Tuesday, April 14, 2009
Last Day of Classes	Saturday, April 25, 2009
Final Examinations	Monday-Saturday, April 27 - May 2, 2009
Final Grades Due to Office of Records & Registration	Tuesday, May 5, 2009
Commencement	Thursday, May 14, 2009

SEMESTER III (Summer), 2009

New Student Orientation	Saturday, May 2, 2009
First Day of Classes – Add/Drop Period Begins	Monday, May 11, 2009
Last Day to Withdraw with 75% Tuition Refund	Saturday, May 16, 2009
Add/Drop Period Ends and Census Date	Saturday, May 23, 2009
Last Day to Withdraw with 50% Tuition Refund	Saturday, May 23, 2009
Memorial Day Holiday (University Closed)	Monday, May 25, 2009
Last Day to Withdraw with 25% Tuition Refund	Saturday, May 30, 2009
Mid-Semester Deficiencies Due to Office of Records and Registration	Monday, June 29, 2009
Mid-Semester Warning Letters Mailed	Wednesday, July 1, 2009
Independence Day Holiday (No classes 7/1-7/4, University Closed 7/3-7/5)	Wednesday-Sunday, July 1-5, 2009
Classes Resume	Monday, July 6, 2009
Last Day to Withdraw from a Course with a Grade of "W"	Saturday, July 18, 2009
Last Day of Classes	Saturday, August 15, 2009
Final Examinations	Monday-Saturday, August 17-22, 2009
Final Grades Due to Office of Records & Registration	Tuesday, August 25, 2009

8-Week Term Calendar

Harrisburg University's Master of Science in Learning Technologies Program operates on a calendar consisting of six terms of eight weeks in length. Changes to the calendar are at http://www.HarrisburgU.net/academics/calendar.php

Term 1 (Early Fall)

First Day of Classes – Add/Drop Period Begins	Tuesday, September 2, 2008
Add/Drop Period Ends	Saturday, September 6, 2008
Mid-Term Grades Due	Monday, September 29, 2008
Mid-Term Grades Mailed	Wednesday, October 1, 2008
Last Day of Classes	Saturday, October 25, 2008
Final Grades Due to Office of Records & Registration	Tuesday, October 28, 2008

Term 2 (Late Fall)

First Day of Classes – Add/Drop Period Begins	Monday, October 27, 2008
Add/Drop Period Ends	Saturday, November 1, 2008
Advising Week	Monday-Friday, October 27-31, 2008
Registration begins for Terms 3 & 4	Monday-Friday, November 3-7, 2008
Mid-Term Grades Due	Monday, November 24, 2008
Mid-Term Grades Mailed	Wednesday, November 26, 2008
Thanksgiving Holiday (No classes 11/26, University closed 11/27-30)	Wednesday-Sunday, November 26-30, 2008
Classes Resume	Monday, December 1, 2008
Last Day of Classes	Saturday, December 20, 2008
Final Grades Due to Office of Records & Registration	Tuesday, December 23, 2008

Term 3 (Winter)

First Day of Classes – Add/Drop Period Begins	Monday, January 5, 2009
Add/Drop Period Ends	Saturday, January 10, 2009
Mid-Term Grades Due	Monday, February 2, 2009
Mid-Term Grades Mailed	Wednesday, February 4, 2009
Last Day of Classes	Saturday, February 28, 2009
Final Grades Due to Office of Records & Registration	Tuesday, March 3, 2009

Term 4 (Spring)

First Day of Classes – Add/Drop Period Begins	Monday, March 9, 2009
Add/Drop Period Ends	Saturday, March 14, 2009
Advising Week	Monday-Friday, March 9-13, 2009
Registration begins for Terms 5 & 6, 2008-2009 and Terms 1 & 2 2009-2010	Monday, March 16, 2009
Mid-Term Grades Due	Monday, April 6, 2009
Mid-Term Grades Mailed	Wednesday, April 8, 2009
Reading Days/Easter Holiday (No Classes)	Thursday-Monday, April 9-13, 2009
Classes Resume	Tuesday, April 14, 2009
Last Day of Classes	Saturday, May 9, 2009
Final Grades Due to Office of Records & Registration	Tuesday, May 12, 2009

Term 5 (Summer)

First Day of Classes – Add/Drop Period Begins	Monday, May 11, 2009
Add/Drop Period Ends	Saturday, May 16, 2009
Memorial Day Holiday (University Closed)	Monday, May 25, 2009
Mid-Term Grades Due	Monday, June 8, 2009
Mid-Term Grades Mailed	Wednesday, June 10, 2009
Independence Day Holiday	Wednesday-Sunday, July 1-5, 2009
(No classes 7/1-7/3, University closed 7/3-7/5)	
Last Day of Classes	Saturday, July 11, 2009
Final Grades Due to Office of Records & Registration	Tuesday, July 14, 2009

Term 6 (Late Summer)

First Day of Classes – Add/Drop Period Begins	Monday, July 13, 2009
Add/Drop Period Ends	Saturday, July 18, 2009
Mid-Term Grades Due	Monday, August 10, 2009
Mid-Term Grades Mailed	Wednesday, August 12, 2009
Last Day of Classes	Saturday, September 5, 2009
Final Grades Due to Office of Records & Registration	Tuesday, September 8, 2009

Admission - Undergraduate

The University has a centralized Admissions Office to serve all prospective student applicants – undergraduate, graduate and non-degree. This centralized structure is intended to honor the University's commitment to lifelong learning and to offer a more fluid and comprehensive service for those seeking access to a quality educational experience.

Undergraduate Admission

Philosophy

Harrisburg University of Science and Technology seeks to admit students from a variety of backgrounds. The University considers many factors in the review of applicant files. The student's motivation and interest in science or technology and academic potential, which is generally assessed by the courses taken and grades earned in secondary school, are the key elements in considering the applicant for acceptance. The University evaluates the applicant's interest in science and technology by reviewing educational records and reading a goal statement that each applicant must submit as part of the application process.

Undergraduate Admission Process

There is no application deadline at the University. A high school student is encouraged to apply during the fall or early spring of the senior year in high school. An adult learner is encouraged to apply at least two months prior to the start of any semester. This application process allows ample time to be accepted, develop an academic schedule, and to process financial aid applications (if applicable).

Undergraduate Admission Requirements

The University will evaluate each student's candidacy once all admissions materials have been received. Offers of admission are made to qualified candidates on a rolling basis. The undergraduate admissions process requires candidates to:

- Complete the application online at www.HarrisburgU.net/Apply or via a paper application.
- Submit an official high school transcript or equivalent (not required of applicants transferring 30 + college credits). Students who have taken the General Educational Development Test (GED) may submit an official copy of their scores in lieu of the high school transcript. Documentation of successful completion of high school must be received prior to the end of the first semester of enrollment.
- Submit official college transcript(s), if applicable, for any and all college, university or career/trade schools attended (whether or not academic credit was earned).
- Submit a personal goal statement: "I am interested in science and technology because…" This statement may be handwritten, emailed or typed, and should be two to four paragraphs in length, or approximately one full page.
- An international student planning to study at the University with a student (F-1) visa must satisfy the appropriate admissions requirements and procedures, demonstrate proficiency in the English language and provide an affidavit of financial responsibility. Academic records should include courses studied, grades earned, diplomas, certificates and results of comprehensive national examinations. A certified translation of previous education records is required if the records are in a language other than English.
- An applicant whose native language is not English must submit his or her scores from the Test of English as a Foreign Language (TOEFL). Information on the TOEFL can be found

at www.toefl.org. A minimum score of 80 must be earned on the Web-based version of the TOEFL.

Optional materials:
- Request an interview via phone or, preferably, in person at the University.
- Submit results of standardized test scores from the SAT or ACT (optional, but recommended for those in high school).
- Submit a letter of recommendation (preferably from someone who can attest to the student's work ethic, motivation and strengths, or from a teacher in a subject area tied to the student's academic field of interest).

Non-Degree Admission

Philosophy
The University offers various non-degree programs at both the undergraduate and graduate levels, in the form of individual courses, specialized series of courses, and certificates. Semester hours earned will become part of the student's academic record and can be applied to a degree as defined by the appropriate policy and program requirements.

The University also offers professional development experiences in the form of certificate options, workshops, and seminars which can be taken on a non-credit or audit basis.

In some cases, courses may have prerequisites which must be met prior to registration.

Undergraduate Non-Degree Admission Process
There is no application deadline at Harrisburg University. A student is encouraged to apply at least two months prior to the start of a session or course to allow ample time to develop a finalized course registration. The University will evaluate each student's candidacy once all admissions materials have been received.

The undergraduate non-degree admissions process requires candidates to:
- Complete the non-degree application online at www.HarrisburgU.net/Apply or via a paper application.
- An applicant whose native language is not English must submit his or her scores from the Test of English as a Foreign Language (TOEFL). Information on the TOEFL can be found at www.toefl.org. A minimum score of 80 must be earned on the Web-based version of the TOEFL.

If required by a specific certificate or non-degree program, submit official college transcript(s), for any college, university or career/trade schools attended (whether or not academic credit was earned). Some non-degree programs may require evidence of completion of an associate or bachelor degree program. A student who has not yet earned at least an associate degree may be asked to take and successfully pass required placement tests in lieu of the degree.

Undergraduate Non-Degree Policies

A student may enroll in up to 21 semester hours under the non-degree status when just taking individual courses. Beyond 21 semester hours, a student will need to apply for full degree status. Non-degree admission does not guarantee admission into a degree-seeking program.

Students must maintain a 2.00 grade point average to continue from semester to semester.

College in High School Program (Dual Enrollment)

Students may take courses at the University to earn college credit while still in high school. This program provides students the opportunity to be introduced to the college environment, explore majors and get a head start on a Bachelor of Science degree at the University.

Application Timeline

There is no application deadline at the University. Application files are reviewed within two weeks of their completion. Students are encouraged to apply as soon as possible and coordinate their application with the appropriate high school personnel (often the Guidance Office) prior to high school course selection for the appropriate semester.

Dual Enrollment Admissions Requirements

The Dual Enrollment admissions process requires candidates to:

- Complete the application online at www.HarrisburgU.net/Apply or via a paper application.
- Submit an official high school transcript showing a minimum cumulative GPA of 2.75 on a 4.00 scale.
- Successfully complete the placement exam administered by the University.
- Submit consent forms from high school guidance department and parent(s) or legal guardian(s).
- An applicant whose native language is not English must submit his or her scores from the Test of English as a Foreign Language (TOEFL). Information on the TOEFL can be found at www.toefl.org. A minimum score of 80 must be earned on the Web-based version of the TOEFL.

Dual Enrollment Policies

Participation in the Dual Enrollment program is contingent on results of the placement exam and the availability of the course(s) in which the applicant desires to enroll.

Tuition Charges, Refund Policies and Business Office Policies

All tuition, charges and policies listed in this publication are effective as of July 1, 2008 and are subject to change, without notice, by the University's Board of Trustees.

Admission Application Charge
There is no charge for application for admission to the University.

Tuition – Semester Schedule
Tuition payment or satisfactory arrangement to pay tuition due is required before the first day of class. Tuition is charged at the per semester hour rate shown below. Full-time tuition charges are for 12 to 18 semester hours. A student who registers for more than 18 semester hours is subject to additional tuition costs at the per-semester hour rate (for example, tuition charged for 19 semester hours will be $7,375 + $500 or $7,875). Students who register for 11 semester hours or fewer are charged the semester hour rate multiplied by the number of registered semester hours.

Registration Schedule per Semester

	Full Time Tuition (12–18 Semester Hours)	Per Semester Hour Rate (1 to 11 semester hours or 19 or more)
Undergraduate	$7,375	$500
Graduate		$500

Tuition Deposit
A non-refundable tuition deposit of $150 must be paid in advance of final course registration for the initial semester of attendance.

Tuition Payment Late Charge
A late payment charge of $30 per month will be assessed if the student fails to make a scheduled payment when due.

ID Badge Replacement Charge
Upon enrollment, a student receives a photo-imprinted identification badge, which includes an electronic security access chip, at no cost. All students are required to wear ID badges when on campus. If a student ID badge is lost or stolen and must be replaced, a charge of $50 is assessed.

Payment Plans
Students may meet tuition expenses by enrolling in a convenient monthly payment plan. Interested persons may contact the Business Office at 717.901.5135 for more information.

Enrollment Status Determination and Financial Aid Payments
A student's enrollment status is determined at the end of the Add/Drop period (week 2). The student is charged the applicable tuition rate for the number of semester hours in which the student is enrolled. Federal and state student financial aid program assistance for which the student may be eligible is then calculated and paid during week 4 or thereafter, in accordance with regulations, based on the student's enrollment status. Stafford student loans and PLUS Loans are scheduled for disbursement on or after the 31st calendar day from the first day of the semester. University merit and need-based grants and scholarships are credited to the

student's account in week 9 of the semester. Advance payment of an estimated credit balance resulting from anticipated institutional financial aid awards is prohibited.

Refund Policy for Traditional Semester Terms

Students who withdraw from Harrisburg University prior to the end of the third week of the semester may be due a credit for the unearned portion of the tuition charge.

The rate of tuition refund for withdrawal from the University is as follows:

Prior to the first day of a semester	100%
During the first week	75%
During the second week	50%
During the third week	25%
After the third week	0%

Tuition Refund Policy

Tuition for the semester is considered fully-earned at the end of the third week of classes. For refund purposes, the semester begins on the first day of class for that semester, regardless of the student's first class day of attendance during week one. The period of time used to calculate the tuition refund is the first day of class of the semester to the University's determination date of official or unofficial withdrawal.

There will be no refund or additional charges for students who drop and add an equal number of semester hours within the same semester prior to the end of the Add/Drop period (week 2).

If a student reduces the number of courses and/or semester hours during the published Add/Drop period, a tuition adjustment for that course or semester hour reduction will be made, except the student maintains full-time enrollment status with 12 semester hours or more.

There is no tuition refund when a student withdraws from one or more courses after the Add/Drop period but remains enrolled in one or more other scheduled courses.

Scholarship payments received from a company or organization are treated as cash payments by the student. The refund policy does not apply separately to the various types of payments credited to the student's account.

Official Withdrawal

A student is encouraged to contact the Financial Aid and Business Offices in advance of any decision to withdraw from the University to obtain an explanation of the tuition and financial aid adjustments that will occur, if any, as the result of withdrawal from the program of study.

A student who decides to officially withdraw from the University must complete and return a Withdrawal form to the Office of Records and Registration.

The determination date for withdrawal purposes shall either be the actual date of formal notification by the student or some future date specified by the student as the intended last date of attendance. The determination date is used to calculate the tuition refund, if any, and the student financial assistance program refund, if applicable.

Unofficial Withdrawal

Students who discontinue attendance in all courses during a semester and who do not officially withdraw from the University are considered to have unofficially withdrawn. The determination date for unofficial withdrawals shall be the end of the semester, unless other evidence is provided to the Office of Records and Registration. There are serious federal student financial aid program implications for a student who unofficially withdraws, as explained below.

Federal Student Financial Aid Program Refund Calculation

Refunds are calculated upon official withdrawal from all classes and, if the student was deemed eligible for Title IV, HEA student financial assistance program funds, any refund due will be paid within 45 days from the date the student is determined to have withdrawn.

A student who officially withdraws before the 60 percent point in time of the semester- week 9 - will incur an adjustment to the amount of financial aid program funds awarded and/or disbursed for the term based on the percentage of time attended from the first day of class to the University's determination date of withdrawal. If a student officially withdraws during or after week 10 of the 15-week semester, 100 percent of the student's financial assistance program awards are considered earned and will be applied to the total amount of institutional charges due for the term.

For a student who unofficially withdraws during a semester, federal regulations require that only fifty percent (50%) of the student's financial assistance program awards may be paid for that semester. The student is then responsible for all tuition charges due resulting from this reduction in awards and/or payments previously credited to the student's account.

Institutional Financial Assistance Awards, Payments and Refunds

Merit- and need-based financial aid assistance awarded by the University for a semester are earned ratably through week 9 of the 15-week academic term, similar to the federal student assistance program refund calculation described above.

While payments of institutional aid may be credited to the student's account on or after week 4 of a semester, the student must remain enrolled through week 9 of the semester to fully earn the award.

For example, a student with a merit award of $2,000 who officially withdraws in week 6 of the 15-week semester would only have $800 of institutional financial aid assistance applied toward tuition due for the term [$2,000 x 6/15 = $800].

Because the institutional aid award is not fully earned until week 9 of a semester, although a credit balance may appear on a student's account due to the posting of institutional aid a credit balance refund including those funds will not be paid until week 10 of the term.

Refunds for Non-Standard Terms – Course Charge

Various programs are offered in 7- or 8-week modules and the student is charged for only the number of credit hours enrolled for a single course. Where applicable, students who withdraw from the University prior to the first day of the non-standard term may be due a refund of money paid to the University.

The rate of refund for withdrawal from the University is based on the amount charged for registered credit hours and is as follows:

> Prior to the first day of a module   100%
> After the first day of class of a module   0%

Refunds for Non-Standard Terms – Program Charge

Various programs are offered in 7- or 8-week modules and the student is charged for the total number of credit hours enrolled for the entire program. Where applicable, students who withdraw from the University prior to the first day of the non-standard term may be due a refund of money paid to the university. Tuition for each module will be earned ratably for the assigned number of credit hours and, should a student withdraw from the program, a refund will be made for all modules not yet attempted in the program.

The rate of refund for withdrawal from the University is based on the amount charged for the program and is as follows:

> Prior to the first day of class of a module 100%
> After the first day of class of a module   0%
> Remaining Modules Not Attempted   100%

Student Financial Aid Programs & Policies

The Office of Financial Aid Services assists qualified applicants who, without assistance, would otherwise be unable to pursue a college education. The Free Application for Federal Student Aid (FAFSA) and resulting need analysis is used to apply for federal, state and institutional award consideration.

A student must apply each year to renew financial aid eligibility. The amount of financial aid awarded will reflect changes in University costs as well as changes in the financial profile of the student and family.

Financial aid awards are based on the enrollment status of the student, defined as:

Full-time	12 or more semester hours
Three-quarter time	9 to 11 semester hours
Half-time	6 to 8 semester hours
Less than half-time	1 to 5 semester hours

Non-degree students are not eligible for financial aid.

Aid Sources

Federal Pell Grant - The Federal Pell Grant is awarded based on a federal formula using the information provided on the FAFSA. Awards vary from $523 - $4,731 for the 2008-2009 award year, depending on financial need.

Federal Supplemental Educational Opportunity Grant (SEOG) - A limited amount of funds from the SEOG program are available to supplement Pell-eligible students with exceptional need. Awards vary depending on need and fund availability.

Federal Academic Competitiveness Grant (ACG) - The Academic Competitiveness Grant provides up to $750 for the first year of undergraduate study and up to $1,300 for the second year of undergraduate study. The Academic Competitiveness Grant award is in addition to a student's Pell Grant award for those U.S. citizen applicants who completed a rigorous high school program of study, as specified in U.S. Department of Education regulations, and are attending college for the first time in a degree program as a full-time student. An official high school transcript, or equivalent, is required to evaluate an applicant's eligibility for an ACG Grant.

Federal Science & Mathematics Access to Retain Talent Grant (SMART) - A SMART Grant is available during the third and fourth years of undergraduate study to full-time students who are Pell-eligible and are majoring in physical, life or computer science, mathematics, technology, engineering or in a foreign language determined critical to national security. The student must also have maintained a cumulative grade point average of at least 3.00 in coursework required for the eligible major. The SMART grant award is $4,000 per academic year.

Federal Stafford Loan - The Federal Stafford Loan is available for students through participating lenders and credit unions. There are two types of Federal Stafford Loans: subsidized and unsubsidized. The subsidized loan is interest-free while the student is in school, and is awarded based on financial need. Interest accrues on the unsubsidized loan while the student is enrolled in school. The borrower may opt to pay it as it accrues, or allow it to accrue and capitalize. The unsubsidized loan is a non-need based loan program.

The maximum Federal Stafford Loan per academic year is $3,500 for freshmen, $4,500 for sophomores, and $5,500 for juniors and beyond. An independent student may borrow an additional $6,000 per year as a freshman and sophomore, and an additional $7,000 per year as a junior and beyond.

Federal Parent Loan for Undergraduate Students (PLUS) Loan - The PLUS is available for parents of undergraduate students through participating lenders and credit unions. A parent may borrow up to the cost of attendance less any other financial aid received. Repayment begins 60 days after this loan is fully disbursed.

Federal PLUS Loan for Graduate or Professional Students – A graduate or professional student is eligible to borrow under the PLUS Loan Program up to their cost of attendance minus other estimated financial assistance in the Federal Family Education Loans (FFEL) loan program. The terms and conditions applicable to Parent PLUS Loans also apply to Graduate/Professional PLUS loans. The requirements include a determination that the applicant does not have an adverse credit history. Repayment begins on the date of the last disbursement of the loan. The student must have applied for the annual loan maximum eligibility under the Federal Subsidized and Unsubsidized Stafford Loan Program before applying for a Graduate/Professional PLUS loan.

Federal Work-Study – An eligible student can seek part-time employment either on-campus or in community service positions off-campus. A student may work up to 20 hours per week during a semester and up to 35 hours per week when classes are not in session.

Pennsylvania Higher Education Assistance Agency (PHEAA) State Grants & Special Programs – PHEAA State Grants are awarded to eligible Pennsylvania residents based on need. Awards vary from $200 to $4,000 for the 2008-09 academic year. A student applies for the State Grant by completing the FAFSA. Renewal applicants must apply before PHEAA's May 1 deadline. Information from the FAFSA is automatically submitted to PHEAA. After the initial application is filed, students and parents should respond directly to the PHEAA Grant Division if additional information is required to process the state grant award. Other special programs are offered to eligible applicants as determined by PHEAA. An official high school transcript, or equivalent, may be required to evaluate an applicant's eligibility for these programs.

Other Programs – The following federal, state or private financial aid sources are available to a student based upon the individual's affiliations or experiences.

> Veterans Administration Education Benefits
> Pennsylvania Office of Vocational Rehabilitation
> Job Training Agencies
> Employer Sponsorship

Institutional Grant and Scholarship Programs – The University offers a variety of merit- and need-based grant assistance programs. First-year student merit awards are determined using the record of high school achievement. An official high school transcript, or equivalent, is required to evaluate an applicant's eligibility for these programs. Renewal provisions apply to certain merit-based awards.

Need-based grants are awarded to students who have remaining need after receiving available federal and state grant sources of aid and borrow a Stafford and/or PLUS loan for the academic year. Award amounts are discretionary and may change from year to year. Although a student may meet the criteria for multiple gift aid grant awards, receiving any particular award is not assured.

Several scholarship awards are made through funded programs coordinated by the Office of Financial Aid Services.

Satisfactory Academic Progress

Satisfactory academic progress (SAP) is defined as the minimum progress required toward the completion of a degree, and must be maintained in order to receive federal and institutional financial aid. The Pennsylvania State Grant Program, administered through PHEAA, may have different criteria to determine academic progress.

Federal regulations require the University to establish Standards of Academic Progress in each of the following areas:
- earned new credit requirements, referred to as "program pursuit;"
- the student's cumulative grade point average or qualitative measure; and,
- the maximum time limit for completing the program of study, the quantitative measure.

Financial aid recipients must maintain the standards in all three areas, regardless of whether aid was received in the past. Students who are not in compliance with one or more of the standards are ineligible for further financial aid until all standards are met. In order to receive financial aid, students enrolled in non-degree or certificate programs must meet the same Standards of Academic Progress as degree-seeking students.

Students who are academically eligible to continue their enrollment at the University, but do not meet the Standards of Academic Progress (SAP), may attend classes at their own expense until they regain eligibility to receive financial aid. Students should contact the Office of Financial Aid Services to discuss strategies for meeting the standards, as well as to inquire about options for financial assistance that do not require satisfactory academic progress.

Earned Credit Requirements
Full-time baccalaureate degree-seeking students must complete required semester credit hours, exclusive of College Skills courses (ENGL 005, GEND 001, and MATH 081), according to the following schedule to maintain "program pursuit:"

Semester	Must Receive a Passing Grade For:
1	at least 6 semester hours [50% of FT]
2	at least 6 semester hours [50% of FT]
3	at least 9 semester hours [75% of FT]
4	at least 9 semester hours [75% of FT]
5 and subsequent	at least 12 semester hours [100% of FT]

Notes:
1. The total number of credits attempted for a semester is determined by the student's enrollment on the last day of the Add/Drop period for the semester.
2. Incomplete grades, in progress grades, failing grades, or withdrawal from a course after the Add/Drop period with a grade of "W" will count as zero (0) credits earned for the course.
3. Repeated courses will count as new credits earned only if the student originally received an "F" in the course. Repeated courses with a previous grade of "D" or above will not count as new credits unless the University catalog specifically states that a higher grade is required for a prerequisite or major.
4. Students who have not met the earned new credit requirements may take additional courses during the summer at Harrisburg University or another college or university. Federal financial aid will not be available to help pay for these courses.

5. Only credits earned for a course in which a student was actually enrolled at Harrisburg University contribute toward the earned new credit requirement.

Academic Standing and Financial Aid Eligibility (qualitative) - A student with a cumulative grade point average of 2.00 or higher is in satisfactory academic standing. Students not in satisfactory academic standing are subject to warning, probation and dismissal according to the following policy:

First Occurrence
If a student attains less than a 2.00 cumulative grade point average in a semester, a letter of warning will be issued.

Second Consecutive Occurrence
If a student has a cumulative grade point average below 2.00 at the end of the second semester, a letter shall be issued placing the student on probation for the subsequent semester. Conditions may be imposed at this time.

Third Consecutive Occurrence
If a student after three semesters has a cumulative grade point average that remains below 2.00, a letter of dismissal will be issued.

Maximum Time Limit for Completing the Program of Study (quantitative) - A full-time student must successfully complete a program of study within one- and one-half times the normal time frame in credit hours attempted. Students enrolled less than full-time will have the policy applied on a pro-rata basis in accordance with enrollment status.

Normal Time Frame	Number of Terms	Avg. # of Sem. Hrs. Per Term	Maximum Attempted Sem. Hrs.	Maximum Number of Terms	Avg. # of Sem. Hrs. Must Be Completed Per Term
Degree Programs: 120 semester hours	8	15	180	12	10

Academic Standing and Satisfactory Academic Progress Review and Notification – The University evaluates academic standing and satisfactory academic progress at the end of each semester. All students who receive federal and state financial aid must meet the standards for satisfactory academic progress in order to establish and retain student financial aid program eligibility. The University may establish academic policies that may be different than the policies governing academic warning, probation, and dismissal for federal and state student assistance program purposes. Written notification of financial aid ineligibility is mailed to a student at the most recent permanent address.

Appeals – A student who becomes ineligible to participate in financial aid programs as a result of failure to meet Satisfactory Academic Progress (SAP), as defined above, may file an appeal by submitting a letter outlining the nature of their appeal to the Director of Financial Aid Services. An appeal will be considered only if the student's failure to meet the Standards of Academic Progress (SAP) is determined to be due to events beyond the student's control. Written documentation of the circumstances and updated financial information (if any) must be submitted with the appeal and should reference the student's name and student ID number. Appeals submitted without documentation will not be considered. Examples of circumstances for which an appeal may be considered include:

- Employment or military obligations
- Medical emergencies
- Unusual personal hardship

A timely determination will then be made and documented in the student's file.

Student Services

New Student Orientation
Orientation is a one-day program scheduled for newly admitted students. This program, held in advance of the fall and spring semesters, familiarizes students and their families with University policies and services. Topics such as financial aid assistance, registration information, library services and student services are discussed. The goal of the orientation program is to assist the student in making a transition to the college experience.

Housing Partners
Students who desire housing have several attractive options which are located close to the University complex. These are independently owned and operated.

   International House - This facility has several rooms, suites, and apartment style housing arrangements for University students which include laundry facilities, kitchen areas, private rooms, and group living spaces. A listing and tours of the rooms are available.

   Pennsylvania Place - This apartment complex offers fully furnished units which support two students in a modern, shared-living environment.

Information about these housing partners may be obtained at the Office of Admissions.

Health Referral Services
The University does not offer health services on campus. Health care services are located within minutes of the University. Students who need additional assistance with accessing health care should refer to the Student Handbook or contact the Office of Student Services.

Disability Support Services
Harrisburg University of Science and Technology welcomes diversity among its students and, in accordance to the Americans with Disabilities Act of 1990, seeks to provide reasonable and effective support services to all students.

The Americans with Disabilities Act of 1990 and Section 504 of the Rehabilitation Act of 1973 prohibit discrimination on the basis of disability and require the university to make reasonable accommodations for those otherwise qualified individuals with a disability who request accommodations. A reasonable academic accommodation is a modification or adjustment that allows an individual to gain equal access and have equal opportunity to participate in the university's courses, services, activities, and use of the facilities. The university is not obligated to provide an accommodation that requires a substantial change in the curriculum or alteration of any essential elements or functions of a program.

University disability support services are aimed at assisting with academic adjustments and accommodations. Services include test proctoring, library research, note taking, and reader services. Information on mobility, wheelchair storage, adaptive computing, small equipment loans, specialized scholarships, and career/internship resources will also be available.

To ensure appropriate accommodations, a student needs to provide current documentation of his/her disability by a licensed professional. Please use the space provided in the Student Health and Immunization Record to notify Harrisburg University of any special needs.   Additionally, all requests for accommodations should be made to the Office of the Vice President for Student Services.

Textbook Services

Textbooks are made available for purchase by the student through the services of Validis (formerly The Nebraska Book Company). Three times during the school year, Validis establishes a physical presence on campus to sell textbooks. The bookstore opens for approximately three weeks at a time to facilitate purchases and returns. A student has access to textbook information through Moodle, the web-based student information resource.

University Library

The library supports research and study; enhances classroom teaching; and provides socially and intellectually enriching materials in all relevant formats to the University community. The library web pages offer on- and off-campus access to online catalogs, periodical databases, reference tools, internet search engines, current assignments, tutorials, and electronics reference services.

Academic Advising

Academic advising is an important component of a student's education at the University. A student has a variety of available advising opportunities, which include:

> Faculty Advisors
> One-on-one Tutoring
> Peer Tutoring
> Study Groups
> *Smarthinking*™

These services are accessed through the Student Success Center and options are individually tailored to meet each student's needs.

Student Success Center

The Student Success Center is committed to providing our students with the resources needed to succeed. The professional staff, along with our faculty and student affairs professionals, can help students be successful from their transition to college life through the senior year.

Internships

A student participates in real world learning through internship work experience placements. These co-curricular experiences will allow the student to apply classroom learning and explore possible career paths simultaneously. Learning how to build a resume and developing a potential employment network are parts of this process. A student can access www.HarrisburgU.net to reach the on-line Internship Orientation, Internship Agreement and Internship Handbook. These documents walk the student through the process of obtaining internships and direct the student to the Office of Student Services for information about placement opportunities in the surrounding community.

Business Mentors Program

The Business Mentor Program is a voluntary program in which a student is be matched with a mentor from the professional community. This program links student learning in the disciplines of science and technology with careers in these fields. The goal is to provide students with additional support from experienced professionals in the science and technology communities.

Academic Policies - Undergraduate

<u>Calendar and Credit System</u>

The University operates on a semester calendar and uses the semester hour credit system. There are three semesters per twelve-month period: Semester I (Fall), Semester II (Spring), and Semester III (Summer).

<u>Enrollment Status</u>

Student enrollment status is defined as either full time or part time. The minimum full time undergraduate student enrollment is 12 semester hours in a semester. Part time status is any number of credits fewer than 12 semester hours. The standard full-time course load is 12 through 18 semester hours. A course load greater than 18 semester hours constitutes an overload and requires the approval of the Vice President for Student Services.

Part-time status is sometimes defined further using one of the following terms:

Three-quarter time	fewer than 12 semester hours but greater than or equal to 9 semester hours
Half-time	fewer than 9 semester hours but greater than or equal to 6 semester hours

<u>Class Attendance</u>

Attendance is a critical part of a student's education. The student is expected to attend class regularly and participate fully in the activities of that course. The instructor is responsible to set forth the attendance requirements for each course in the syllabus.

Attendance will be taken by instructors during the first two weeks of the semester for enrollment status determination by the Office of Records and Registration. Following that period, instructors may or may not regularly take attendance but all instructors will engage the students with class participation assignments. These assignments will gauge the level of student engagement and assist in determining student participation in the class.

If, in the judgment of the instructor, a student is excessively absent from class or fails to complete the requested participatory assignments:

1. the instructor will notify the student of this determination;
2. the student will have one week to meet with the instructor to address the situation;
3. if the student fails to do so, the instructor will notify the Office of Records and Registration to withdraw the student from the course;
4. The Office of Records and Registration will notify the student of this action and record a grade of "W."

Progress toward a Degree

Students are classified based upon the number of semester hours completed and reported to the Director of Records and Registration. The classification is based on credits completed, not attempted, and does not include courses for which one of the following grades has been assigned: "I", "IP", "NR" or "F".

Freshman	fewer than 30 semester hours earned
Sophomore	greater than or equal to 30 semester hours earned but fewer than 60
Junior	greater than or equal to 60 semester hours earned but fewer than 90
Senior	greater than or equal to 90 semester hours earned

A transfer student without a degree is classified on the basis of total semester hours accepted by the University.

A student who has earned a baccalaureate degree and is working toward a second one is classified as a senior.

Advanced Standing

Advanced Placement (AP) – a student who participates in the College Entrance Examination Board's program in association with secondary schools may earn college credit for this work by: 1) completing the course offered in the secondary school, 2) sitting for the Advanced Placement examination offered in May of each year, and 3) arranging for an official AP score report from College Entrance Examination Board (CEEB) to be forwarded to the Office of Records and Registration at the University. The required minimum score for each discipline and the University's course equivalencies for which credit may be awarded appear below and on the following pages.

Subject Examinations	Minimum Score	HU Course Granted 2008 - 2009 Curriculum	Semester Hours
Art History	3	Art portion of GEND 300 The Cultured Mind	3
Biology	3	biology elective	3
Biology	5	biology elective	6
Calculus AB	3	MATH 120 Calculus I	3
Calculus BC	3	Calculus II	3
Chemistry	3	CHEM 150 General Chemistry I	4
Chemistry	5	CHEM 150 & 160 General Chemistry I & II	8
Chinese Language and Culture	4	Elementary Chinese I and II and Intermediate Chinese I	9
Computer Science A	3	CISC 120 Programming Fundamentals I	4
Computer Science AB	3	CISC 160 Programming Fundamentals II	4
Economics – Macro	3	Macro economics portion of GEND 201 The Civic Mind or elective	3
Economics – Micro	3	elective	3
English Language & Composition w/ essay	3	ENGL 105 College Composition I	3
English Literature & Composition w/ essay	3	ENGL 105 College Composition I	3
Environmental Science	3	Natural science component of GEND 111 The Scientific Mind	3

Subject Examinations	Minimum Score	HU Course Granted 2008 - 2009 Curriculum	Semester Hours
French Language	4	Elementary French I & II and Intermediate French I	9
French Language	5	Elementary French I & II and Intermediate French I & II	12
French Literature	3	elective	3
Geography – Human	3	GGSI 130 Geography of the World	4
German Language	4	Elementary German I & II and Intermediate German I	9
German Language	5	Elementary German I & II and Intermediate German I & II	12
Government & Politics-Comparative	3	Political Science/Policy portion of GEND 201 The Civic Mind or elective	3
Government & Politics-US	3	Political Science/Policy portion of GEND 201 The Civic Mind or elective	3
History – European	3	History portion of GEND 201 The Civic Mind or elective	3
History – US	3	History portion of GEND 201 The Civic Mind and elective	6
History – World	3	History portion of GEND 201 The Civic Mind and elective	6
Italian Language and Culture	4	Elementary Italian I & II and Intermediate Italian I	9
Japanese Language and Culture	4	Elementary Japanese I & II and Intermediate Japanese I	9
Latin Literature	3	elective	3
Latin: Virgil	3	elective	3
Music Theory	3	elective	3
Physics B	3	PHYS 210 General Physics I	4
Psychology	3	PSYC 101 Introduction to Psychology portion of GEND 101 The Creative Mind	3
Spanish Language	4	Elementary Spanish I & II and Intermediate Spanish I	9
Spanish Language	5	Elementary Spanish I & II and Intermediate Spanish I & II	12
Spanish Literature	3	elective	3
Statistics	3	Math 280 Introductory Statistics	3
Studio Art	3	elective	3

Armed Services Training Programs – A student who is a veteran of the U. S. Armed Services may receive academic credit for service training programs completed during the time of service under the following conditions: 1) the student must present a copy of the discharge notice (completed DD-214 form); 2) the veteran's military occupational specialty (MOS) designation appears on the discharge; and, 3) the student's MOS as described in the American Council on Education's Educational Experiences in The Armed Services volumes 1–3 . Credit is awarded based upon the ACE recommendation and the closeness of the match between the training program and a University course.

Transfer Credit – Unofficial or student copies of transcripts may be used to initiate the transfer credit evaluation process. However, official final transcripts from the institution of origin are required before the transfer evaluation process can be finalized by the Director of Records and Registration and academic credit is posted to the student's permanent record. For transfer credit limits see Graduation Requirements, Residency Requirement section on page 30.

Domestic – In lieu of articulation agreements, academic credit earned for college-level work, not developmental course work, completed for a minimum grade of "C" or higher is considered for possible transfer of credit. The Director of Records and Registration reviews the course description, reviews the program of study at the institution of origin, and may consult Harrisburg University faculty member whose academic discipline is most closely aligned with the course(s) being reviewed. Academic credit is awarded when: 1) the course is a reasonable substitute of a University course, 2) the course is a reasonable substitute for a competency associated with one of the general education (GEND) requirements, or 3) the course is considered college-level work worthy of elective credit in the student's intended program of study and the student has sufficient unsatisfied elective credits to which this course may be applied.

International – a World Education Services (WES) transcript or American Association of Collegiate Registrars and Admissions Officers (AACRAO) international transcript evaluation is required. If the original evaluation received by the Office of Records and Registration from one of these evaluators deems the student's prior work to be at the college-level and the quality of the completed work is assessed to be at the "C" or higher level, credit is awarded for the courses that apply to the student's intended program of study at Harrisburg University as indicated above for domestic transfer credit. If the prior work was earned under an educational system that did not assign credit values, the Harrisburg University semester hour value is assigned for each course being accepted. If the student completed courses which are evaluated to be at the college level, but Harrisburg University has no comparable course(s), the student is granted elective credit unless all required elective credit hours have been satisfied.

Coursework at Other Institutions – A student may study at other institutions and transfer the credit to the student's record at Harrisburg University.

Process for Approval - The student must complete an Off-campus Coursework form at the Office of Records and Registration notifying the University of the student's intention to enroll on a visiting basis at another higher educational institution. The request will be reviewed by the Director of Records and Registration who may consult with an appropriate member of the University's faculty. Prior to enrollment, a written response will be sent to the student stating whether or not the proposed course is acceptable.

Process for Awarding of Credit – The student must arrange for an official transcript from the other college or university to be sent to Harrisburg University's Office of Records and Registration. If the approved course was completed with a final grade of "C" or higher, the semester hours earned from the course will be posted to the student's record at the University.

Catalog in Effect

Freshmen entering the University in the 2008-2009 academic year will be subject to this Catalog edition unless they elect to complete a revised set of program requirements printed in a future edition of the Catalog.

New students entering the University during the 2008-2009 academic year with advanced standing of sophomore, junior, or senior will be subject to the requirements imposed upon other full-time students at the University who have attained the same standing.

> 2006 edition – New students classified as sophomores or juniors
> 2005 edition – New students classified as seniors

A student who elects to complete a revised set of program requirements released by the University must notify the Office of Records and Registration of this decision by completing a Declaration of Major/Catalog Option Form available in that office.

Graduation Requirements

To receive a Bachelor of Science degree, a student must satisfy all of the following requirements. Verification that the student has met these requirements is made by the Director of Records and Registration. The Provost has the authority to waive a requirement under exceptional circumstances.

1. At least 120 semester hours must be accumulated.

2. A student must complete all of the requirements of the declared program of study in which the degree is to be awarded.

3. A cumulative grade point average of at least 2.00 in all course work completed at the University is required for graduation from an undergraduate certificate program or a baccalaureate degree program.

4. The program required course must be completed with a minimum grade point average of 2.00.

5. A student must earn a minimum of 33 semester hours in residence toward a baccalaureate degree from Harrisburg University of Science and Technology: 9 semester hours must be completed in experiential courses, 18 semester hours must be completed in required courses, and 6 other semester hours. No more than 70 semester hours earned at a two-year institution may be applied toward a baccalaureate degree from Harrisburg University. The number of semester hours that may be transferred from a four-year institution is limited to 87.

6. A student may receive two baccalaureate degrees if the requirements of each curriculum have been completed and the student has earned at least 30 semester hours beyond the required curriculum requiring the greater number of semester hours – minimum of 150 semester hours.

A candidate must apply for graduation two semesters before the student intends to graduate. The University expects each graduating student to attend Commencement.

A candidate may participate in Commencement who is within one semester of completion of all graduation requirements if the student has a reasonable and executable plan to complete all unsatisfied requirements by the conclusion of the subsequent semester.

Grades and Grading

Grades are awarded to each student for academic credit completed at the University. A grade is assigned by the instructor responsible for the course in which the student is enrolled, using the following grading scale to indicate the quality of the student's academic work.

Grade	Description	Numerical Value
A	Superior achievement	4.00
A-		3.67
B+		3.33
B	Above average achievement	3.00
B-		2.67
C+		2.33
C	Average achievement	2.00
C-		1.67
D+		1.33
D	Minimum achievement	1.00
F	Fail	0.00
AU	Audit	Not applicable
I	Incomplete	Not applicable
IP	In progress	Not applicable
NR	Not reported	Not applicable
P	Pass	Not applicable
TR	Transfer credit	Not applicable
W	Withdrawal	Not applicable
WA	Administrative withdrawal	Not applicable
WM	Medical withdrawal	Not applicable

Grades of "AU", "I", "IP", "NR", "P", "TR", "W", "WA" or "WM" are not included in the calculation of a student's grade point average (GPA). They are used by the University in circumstances when grades of "A" through "F" are not appropriate.

Audit (AU) – The audit grade is assigned by the instructor when the student has properly registered to audit the course, and has met all requirements of the University's course audit policy.

Incomplete (I) – Inability to complete course work due to documented circumstances beyond the student's control (such as severe illness) may, at the discretion of the instructor, result in a grade of incomplete (I). However, all work must be completed by the end of the Add/Drop Period of the subsequent semester. If all work is not completed by that time, the "I" grade will convert automatically to a grade of "F". It is the responsibility of the student to contact the instructor to make the necessary arrangements for makeup work. Students with 6 semester hours or more of incomplete work will not be permitted to register for future courses.

In Progress (IP) – This is a deferred grade assigned by the instructor to be used for research projects, internships, directed study, etc., when it is understood that the course will extend over more than one semester. An "IP" grade should be accompanied by a written plan and a schedule for completing the course within a specified time period to be no longer than 12 months.

Withdrawal (W) – This grade is recorded by the Director of Records and Registration when the student has withdrawn from the course according the policy set forth by the University for withdrawing from a course.

Administrative Withdrawal (WA) – The "WA" grade can be given only by the Provost or other designated University official. It is used when it is necessary for a student to leave the University under extenuating circumstances and when the normal withdrawal processes are not available to the student. A request for administrative withdrawal with accompanying documentation will be submitted to the Director of Records and Registration. The "WA" grade can be submitted at any time during the semester.

Medical Withdrawal (WM) – This grade can be assigned at any time during the semester when a student requests to leave the University for medical reasons and when the normal withdrawal processes are not available to the student. This grade is assigned by the Director of Records and Registration with the approval of the Provost. The student must submit well-documented evidence of the medical condition to be eligible for a medical withdrawal from the University.

Transfer (TR) – A grade of "TR" is used to indicate on the student's transcript those credits that have been earned at another institution and that will count toward the degree at Harrisburg University. While courses with a "TR" grade are counted toward the student's degree requirements, there are no quality points associated with this grade so this grade has no impact upon the calculation of the student's grade point average (GPA).

Not Reported (NR) – The temporary grade of "NR" is recorded by the Director of Records and Registration when the instructor does not report a grade for the student for the course. The Director of Records and Registration will advise the Provost when an "NR" grade has been recorded for the student, and will work with the student and the instructor to determine why a grade was not reported.

Pass (P) - The "P" grade is assigned by instructors for a student who successfully completes a course.

Grade Point Average

A grade point average (GPA) is a statistical calculation of a student's performance in a semester. The semester grade point average summarizes the student's performance during that academic term and the cumulative grade point average (CUM GPA) summarizes the student's performance during semesters completed at the University.

Calculation of the Grade Point Average

Course	Sem. Hrs. Attempted	Grade	Numerical Value	Quality Points
Course A	3	B	3.00	9.00
Course B	4	B-	2.67	10.68
Course C	2	A-	3.67	7.34
Course D	3	C	2.00	6.00
Total	**12**			**33.02**

Total Quality Points = 33.02 / 12 = **2.75**

1. Compute the quality points earned for each course by multiplying the semester hours earned for the course by the numerical value of the grade earned in the course.
   Example: A student registered for a course worth 4 semester hours who earns a final grade of "B-" in that course will earn 10.6 quality points for that course (4 semester hour x 2.67).
2. Add the quality points earned for each course in which the student is registered in the semester.
3. Add the number of semester hours attempted for all courses in which a grade of "A" through "F" was earned.
4. Divide the total number of quality points earned by the total number of semester hours attempted. The result is the grade point average.

Mid-Semester Deficiency Letters

Each instructor notifies the Office of Records and Registration of a student's poor academic performance in a course by submitting mid-semester deficiencies of "D+","D","F" or "I" at the end of the seventh week of classes as indicated on the Academic Calendar. These submissions are forwarded to the Vice President of Student Services who sends a letter to each student with a deficiency, and a copy to the student's academic advisor. A student who receives such a letter is encouraged to consult both the instructor and academic advisor and utilize the services of the Academic Success Center.

Final Grading Process

After the conclusion of a semester each instructor notifies the Office of Records and Registration of a student's academic performance in a course by submitting grades. The Office of Records and Registration posts these grades to the student's permanent record at the University and releases grade reports to each student as indicated on the Academic Calendar.

Repeated Courses

Students may repeat courses in which they have received a grade of C- or below. The original grade will remain on the student's transcript as part of the permanent academic record. Once a course is repeated, the most recent grade will be used in the calculation of the student's cumulative grade point average. Courses may only be attempted twice for credit.

Academic Standing

A student with a cumulative grade point average of 2.00 or higher is in satisfactory academic standing. Students not in satisfactory academic standing are subject to warning, probation and dismissal according to the following policy:

First Occurrence
If a student attains less than a 2.00 cumulative grade point average in a semester, a letter of warning will be issued.

Second Consecutive Occurrence
If a student has a cumulative grade point average below 2.00 at the end of the second semester, a letter shall be issued placing the student on probation for the subsequent semester. Conditions may be imposed at this time.

Third Consecutive Occurrence
If a student after three semesters has a cumulative grade point average that remains below 2.00, a letter of dismissal will be issued.

If at any time the cumulative grade point average falls below a 1.00 the University reserves the right to dismiss the student.

Academic Honors

Dean's List - A student is eligible for the Dean's List at the conclusion of a semester when:
1. the semester grade point average is 3.50 or higher; and,
2. a minimum of 9 semester hours of course work was completed, excluding those courses in which final grades were earned that are not included in the calculation of the grade point average.

Graduation Honors – A student who has earned consistently superior grades will be recognized for this achievement at graduation with the designation listed below representing the student's level of achievement. Both the student's diploma and university record will carry the appropriate honors designation as follows:

> *Summa Cum Laude* for a cumulative grade point average between 3.95 and 4.00
> *Magna Cum Laude* for a cumulative grade point average between 3.75 and 3.94
> *Cum Laude* for a cumulative grade point average between 3.50 and 3.74

Release of Grades

In accordance with the requirements of the Family Educational Rights and Privacy Act (FERPA), reports of the student's grades are not routinely sent to the student's parents or guardians. Parents or guardians of a student under 18 years of age may obtain grades by writing to the Office of the Records and Registration. The grades of a student over 18 years of age will be sent to the parents only with the written consent of the student.

Withholding of Records

Student records may be withheld by the Office of Records and Registration when directed by the appropriate University officials. The release of academic transcripts and diplomas may be on hold for a period of time.

The Vice President for Student Services determines when a student's record must be on hold for disciplinary reasons and the Business Office determines when a student's record must be on hold for financial reasons.

Deferred Examination Policy
This section applies to all examinations, including mid-term and take-home examinations, whether or not administered during the final examination period.

No Right to Defer
No student has a right to defer an examination. A student who fails to take an examination when scheduled will receive a failing grade of "F" on the examination unless the examination has been deferred according to the procedure outlined in this policy.

Policy on Deferral of Examinations
Examinations will be deferred only for "good cause." "Good cause" will be determined by the Vice President for Student Services in conjunction with the instructor of that course. The decision of the Vice President for Student Services is final. In the event of a lack of consensus between the Vice President and the instructor, a decision will be made by the Provost. Examples of "good cause" include:
- Serious personal injury or illness with appropriate documentation;
- Serious injury, illness or death in the immediate family that can be documented; or,
- Other extenuating mitigating circumstances beyond the student's control.

Procedure for Requesting Deferred Examination
If a student desires to request deferral of an examination, the student should file a request with the Vice President for Student Services and the instructor requesting deferral of the examination in a timely manner. Every student requesting a deferral of an examination must provide evidence of the event or situation which the student believes is justification for the request for deferral.

Emergency Deferral of Examination
The student must make the request in person or by telephone. If a student is unable to take an examination for good cause (as defined previously) that arises within 24 hours immediately prior to the exam time, the student may appear in person or telephone the Office of the Vice President of Student Services to obtain permission to defer an examination.

If a student cannot appear in person or by telephone, the student may miss the examination and apply for a deferral after the examination date. Such application for deferral must be made within 48 hours of the administration of the exam for which the student seeks the deferral, and in no event later than the last day of the exam period for that semester.

Timing of Make-up Examination
The deferred examination will be taken at a time determined by the Vice President of Student Services in conjunction with the instructor of the course. The make-up examination must be completed no more than five business days after the original test date.

Illness During an Examination
If a student becomes ill during an examination and is unable to continue, the student shall notify the proctor and leave all examination materials with the proctor. The student shall seek medical attention immediately and obtain a letter in support of the illness that prevented the student from completing the examination.

Leave of Absence Policy

A student may initiate a leave of absence request for extenuating mitigating circumstances or short-term active-duty military service. Students choosing to take a leave of absence should contact the Vice President of Student Services to initiate the request and coordinate expectations to ensure a smooth return to the University. Only students with a reasonable expectation of returning to the University and with the ability to complete the coursework should apply for a leave of absence.

A Leave of Absence Form must be submitted in writing, signed, and dated in advance of the onset of the leave. This form can be found in the Student Services Office and the Office of Records and Registration. Information regarding the request for the leave must be provided and may require additional supporting documents. The documents will then be forwarded to the Office of Records and Registration for processing. The recording of student enrollment and grades during a leave is as follows:

- Withdrawal (W) grades will be assigned after the Add/Drop period and one week prior to the end of classes.
- Final grades may be assigned by the instructor if the leave begins after the final week of classes have commenced.

The Business Office and Financial Aid Office will determine any tuition and financial aid implications of a leave.

Withdrawal Procedure

A student considering withdrawal from the University should meet with the Vice President for Student Services for evaluation of options. A student who wishes to officially withdraw from the University must complete and sign a withdrawal form, have a conference with the Business Office Clerk and Financial Aid Director regarding possible financial consequences of withdrawing from the University, and submit the form to the Office of Records and Registration. The last date of attendance will be determined by the official withdrawal date or the unofficial withdrawal process described in the Financial Aid section on page 41.

Students who unofficially withdraw by ceasing attendance and failing to notify the Office of Records and Registration may incur substantial penalties due to stringent federal and state regulations for the student financial assistance grant and loan programs.

Readmission – The Readmission Application form is available at the Office of Records and Registration and must be completed and submitted to that office. A student who was in good academic standing, in good social standing, and had satisfied all financial obligations to the University at the time of withdrawal will be readmitted. A student who left the University while on academic warning or probation must complete the Readmission Application but the Provost will review the student's academic records and make the readmission decision.

Reinstatement

A student with a cumulative grade point average of 1.00-2.00 dismissed for poor scholarship pursuant to this Catalog may petition the Vice President for Student Services for reinstatement. A student may not be reinstated fewer than twelve months from the date of the original dismissal. Students with a cumulative grade point average below 1.00 may not petition for reinstatement.

Filing Petition for Reinstatement

A petition for reinstatement must be filed during the fifteen-day period beginning with the day on which notice of dismissal is deemed effective. The petition shall be delivered to the Office of Student Services.

Requirements of the Petition

The student must allege and prove that the student possesses the requisite ability to perform satisfactorily at the University and that the student's current grade point average does not indicate a lack of capacity. The student must rebut the presumption of lack of capacity by proving the following:

   a. Demonstration of ability to do college-level work.
   b. Extenuating or mitigating circumstances beyond the student's control. The student must prove that the academic failure was the result of extraordinary circumstances beyond the student's control. If these circumstances claimed by the student were a result of physical or psychological incapacity suffered during a semester or before or during an examination, convincing medical proof of the condition must accompany the petition.
   c. Significant increase in grade point average. If a student's grade point average significantly improves over the course of the semesters under review, the Provost may conclude that the student's most recent grades are a more accurate reflection of the student's capacity to succeed. The Provost's decision is discretionary and a petition for reinstatement may be denied regardless of the student's increase in semester grade point average.

Dismissal Following Reinstatement

A student who has been dismissed and later reinstated is ineligible to petition if dismissed again.

Consideration of Petition for Reinstatement

Review of Petition

Petitions shall be reviewed by the Provost and Vice President for Student Services. A committee may also be convened if the Provost so chooses.

Reinstatement on Conditions

A readmitted student may be required to fulfill certain conditions such as, but not limited to, the repetition of courses.

Academic Programs – Undergraduate

Learning at Harrisburg University

The goal of learning at Harrisburg University is to ensure that all students have gained the relevant knowledge, competence, and experiences to best prepare them for self-fulfilling and enriching careers. Learning is, therefore, a multi-faceted activity that occurs throughout and across the college experience; it integrates both academic learning (acquiring and applying new knowledge) and student development (learning about oneself). Harrisburg University emphasizes competency-based learning outcomes with programs that are intentionally designed to be engaging, integrative, and experiential. There are four interdependent program characteristics that help define the Harrisburg University experience:

- **Highly Available:** The University frames learning experiences to meet the student's needs. This is demonstrated through the team-taught general education program, the use of technology inside and outside of the classroom, and the non-curricular or co-curricular learning opportunities available through the Office of Student Services and Office of Strategic Markets.
- **Highly Collaborative:** Students develop knowledge and skills through shared experience as opposed to learning in isolation or in competition with each other. Faculty are responsible for creating facilitative learning environments under the premise that knowledge can be gained from everyone. Students have the advantage of learning from the minds and experiences of classmates, business mentors, or future employers.
- **Highly Experiential:** The University deliberately ensures that learning is highly linked to both practical and professional experience. This represents a shift from one-way (faculty to student), text-heavy content delivery to a more robust learning model that deliberately values experience, both inside and outside the classroom. Experience is emphasized through the Junior and Senior Projects for undergraduates and industry-related internships and experiences for all students.
- **Highly Applied:** The learning conversation focuses on the practical application of knowledge. The intention is to shift the question from "How do I remember this information?" to "How can I act on this information in order to create knowledge that is both useful and actionable?" In this way, learning at the University becomes an exercise in both preparation for career and readiness for life.

Competencies and ePortfolio

Competency-Driven and Across-the-Curricula: A hallmark of the Harrisburg University experience is competency-driven education. That is, students will be expected to demonstrate mastery of eight university-wide competencies:

- Critical Thinking
- Communication
- Teamwork and Collaboration
- Entrepreneurship
- Information Literacy
- Ethical Decision Making
- Global Awareness
- Civic Engagement

Regardless of a student's major, employers and community leaders desire these competencies; they also serve the broader purpose of preparation for life and citizenship.

ePortfolio Requirement: Harrisburg University defines an ePortfolio as *an organized, media-rich collection of documents that allows students to demonstrate competence to a multitude of audiences.* The ePortfolio will be central in how students organize, develop, and reflect on their learning. It will also be a lever for assisting the way in which faculty develop curricula, view teaching, and deliver content. Ultimately, the ePortfolio will be a coalescing force for making tangible and visible the university-wide competency program while serving as a key tool in evaluating student success.

General Education

Definition and Purpose: The purpose of general education at Harrisburg University is to offer undergraduate students a dynamic platform for both foundational and skill-based learning that prepares them for a well-rounded life in which they will make informed decisions, contribute to society, and become lifelong learners. In developing "habits of mind," and through the lens of the desired university-wide competencies, students will obtain a breadth of knowledge and become adept at approaching and analyzing complex problems.

Given the sheer vastness of knowledge and the rate at which new knowledge is developed, students typically cannot command mastery or deep expertise in the broad areas known as the sciences, social sciences, humanities, or applied knowledge domains such as entrepreneurship or leadership. The purpose of general education is not to produce experts. Instead, the goal is to integrate contributions from multiple fields to give students more comprehensive explanations and understandings of the world. In essence, general education – and all learning at the University – extends the more traditional "learn-to-know" model by combining a "learn-how-to-learn" model with a "learn-for-action" model.

The Mind courses are six-credit, cross-disciplinary, problem-based courses team-taught by faculty of different disciplines. At Harrisburg University, general education is a degree requirement for all undergraduate students. Students are required to take at least 30 credits of general education, 24 of which must be the Mind courses.

- GEND 101: The Creative Mind
- GEND 111: The Scientific Mind
- GEND 201: The Civic Mind
- GEND 351: The Organizational Mind

The remaining six semester hours can be additional Mind courses or general education (GEND) electives. These general education courses are intended to be holistic in nature; that is, though they may be organized as two courses of three semester hours, they are intended to be taken as six semester hour integrative learning experiences. The focus is on the analysis of large problems that span the borders amongst the sciences, social sciences, humanities, and practical knowledge domains. The intention is to allow faculty from disparate disciplines the latitude to adapt and develop course themes and give students some choice in general education.

The curriculum requires a minimum of 120 semester hours to be earned in fulfillment of the Bachelor of Science degree. The courses are distributed in the following required areas: Foundation and General Education Courses, Experiential, Program, and electives. Each requirement is detailed as follows:

Foundation Courses   **18 semester hours**
      Mathematics (9 semester hours) – MATH 120 College Algebra I, MATH 280 Introductory Statistics, MATH 220 Calculus I (MATH 210 Discrete Mathematics for CISC and GGSI students)

      English (9 semester hours) – ENGL 105 College Composition I, COMM 110 Speech, and ENGL 200 Advanced Composition and Technical Writing

General Education Courses   **30 semester hours**

GEND 101 The Creative Mind	GEND 201 The Civic Mind
Introduction to Psychology	U.S. or World History
Sociology	U.S. or World Politics
Literature	Macroeconomics
GEND 111 The Scientific Mind	GEND 351 The Organizational Mind
Natural Sciences	Organizational Theory
Philosophy	World Cultures
Computer Science	Microeconomics

      Six (6) semester hours chosen from the following:

GEND 150 The Learned Mind	GEND 400 The Entrepreneurial Mind
Philosophy	Business and Social Entrepreneurship
Literature	
	GEND 425 Globalization
GEND 251 The Political Mind	Trade & Finance
International Political Systems	
International Relations	GEND 450 The Healthy Mind & Body
Macroeconomics	Personal and Environmental Health
GEND 300 The Cultured Mind	GEND 465 Professional Ethics
World Cultures	Moral, Ethical, and Professional
Art	Decision-making

Experiential Components   **13 semester hours**
      BTEC, CISC, EBUS, GGSI, or INSC (according to program of study) 265 Internship (3)
      BTEC, CISC, EBUS, GGSI, or INSC (according to program of study) 398 Junior Project (3)
      BTEC, CISC, EBUS, GGSI, or INSC (according to program of study) 498 Senior Project (3)
      SEMR 100 Cornerstone (1)
      SEMR 200 Steppingstone (1)
      SEMR 300 Keystone (1)
      SEMR 400 Capstone (1)

Electives   **9 - 19 semester hours**

Program Requirements   **40 – 50 semester hours**

Bachelor of Science degree   **total of 120 semester hours**

UNDERGRADUATE PROGRAMS

Bachelor of Science in Biotechnology Program

Biotechnology is a multidisciplinary program that incorporates the foundations of biology, microbiology, genetics, molecular biology, and chemistry. It is essentially the manipulation of living organisms, their products, or their processes to further our knowledge of and improve life for different living things using technologically advanced methods.

Biotechnology Requirements – The following courses comprise the Biotechnology requirements; 46 to 48 semester hours. The semester hour value of each course appears in parentheses ( ).

Complete all of the following courses - 40 semester hours:

BIOL 280	Cell Biology	(4)
BIOL 320	Genetics	(3)
BIOL 330	Microbiology	(4)
BIOL 340	Introduction to Biochemistry	(4)
BIOL 370	Molecular Biology	(4)
BTEC 170	Introduction to Biotechnology	(3)
BTEC 310	Biotechnology Applications	(4)
BTEC 340	Biotechnology Technologies	(3)
BTEC 360	Biotechnology Seminar	(3)
CHEM 150	General Chemistry I	(4)
CHEM 210	Organic Chemistry I	(4)

Complete two of the following courses, 6 – 8 semester hours:

BIOL 125	Forensic Science	(3)
BIOL 375	Immunology	(4)
BTEC 235	Applied Cell and Agro Culture	(4)
BTEC 370	Genetically Modified Foods	(3)
CHEM 160	General Chemistry II	(4)
CHEM 220	Organic Chemistry II	(4)
INSC 360	Forensic Case Study	(4)
PHYS 210	General Physics I	(4)
PHYS 260	General Physics II: A Life Science	(4)

Recommended Sequence for Full-time Students Completing the Biotechnology

Program – The sequence that appears below was developed based upon the availability of specific courses each semester and the successful completion of course prerequisites.

	Semester I (Fall)		Semester II (Spring)	
FRESHMAN	ENGL 105 College Composition I	(3)	BTEC 170 Intro. to Biotechnology	(3)
	GEND 101 The Creative Mind	(6)	GEND 111 The Scientific Mind	(6)
	MATH 120 College Algebra I	(3)	MATH 280 Introductory Statistics	(3)
	SEMR 100 Cornerstone	(1)	COMM 110 Speech	(3)

| | Total semester hours = 13 | | Total semester hours = 15 |

	Semester I (Fall)		Semester II (Spring)	
SOPHOMORE	BIOL 280 Cell Biology	(4)	BIOL 330 Microbiology	(4)
	CHEM 160 General Chemistry I	(4)	BIOL 320 Genetics	(3)
	ENGL 200 Advanced Composition and		BTEC elective	(3 – 4)
	Technical Writing	(3)	GEND 201 The Civic Mind	(6)
	MATH 220 Calculus I	(3)		
	SEMR 200 Steppingstone	(1)		

| | Total semester hours = 15 | | Total semester hours = 16 - 17 |

	Semester I (Fall)		Semester II (Spring)	
JUNIOR	BIOL 370 Molecular Biology	(4)	BTEC 265 Internship	(3)
	BTEC 340 Biotech. Techniques	(3)	BTEC 310 Biotechnology Applications	(4)
	CHEM 210 Organic Chemistry I	(4)	BTEC 398 Junior Project	(3)
	SEMR 300 Keystone	(1)	GEND electives	(6)
	Electives	(3)		

| | Total semester hours = 15 | | Total semester hours = 16 |

	Semester I (Fall)		Semester II (Spring)	
SENIOR	BIOL 340 Intro. to Biochemistry	(4)	BTEC 360 Biotechnology Seminar	(3)
	BTEC elective	(3 – 4)	SEMR 400 Capstone	(1)
	BTEC 498 Senior Project	(3)	Electives	(8-10)
	GEND 351The Organizational Mind	(6)		

| | Total semester hours = 16 - 17 | | Total semester hours = 12 - 14 |

Bachelor of Science in Computer and Information Sciences Program

The Computer and Information Sciences Program provides an overview of the latest programming, database administration, data visualization, networking and security technologies. Additionally, students enrolled in this program will gain experience with leading technologies.

Computer and Information Sciences Requirements – This program requires a total of 44 semester hours: 1) 28 semester hours from the courses listed below and 2) 16 semester hours completed in one of the following concentrations: Computer Security, New Media Analysis and Integration, or Information Technology Project Management and Systems Analysis. The semester hour value of each course appears in parentheses ( ).

Complete all of the following courses - 28 semester hours:

CISC 120	Programming Fundamentals I	(4)
CISC 160	Programming Fundamentals II	(4)
CISC 240	Operating Systems	(4)
CISC 260	Programming Techniques	(4)
CISC 310	Discrete Mathematics II	(4)
CISC 330	Computer and Network Security	(4)
CISC 360	Communication Networks	(4)

Recommended Sequence for Full-time Students – The sequence that appears below was developed based upon the availability of specific courses each semester and the successful completion of course prerequisites.

	Semester I (Fall)		Semester II (Spring)	
FRESHMAN	ENGL 105 College Composition I	(3)	CISC 120 Programming Fundamentals I	(4)
	GEND 101 The Creative Mind	(6)	GEND 111 The Scientific Mind	(6)
	MATH 120 College Algebra I	(3)	MATH 280 Introductory Statistics	(3)
	SEMR 100 Cornerstone	(1)	COMM 110 Speech	(3)
	Total semester hours = 13		**Total semester hours = 16**	
SOPHOMORE	CISC 160 Programming Fundamentals II	(4)	MATH 310 Discrete Mathematics II	(3)
			CISC 330 Computer and Network Security	(4)
	MATH 210 Discrete Mathematics	(3)	GEND 201 The Civic Mind	(6)
	CISC 360 Communications Networks	(4)		
	GEND 351 The Organizational Mind	(6)		
	SEMR 200 Steppingstone	(1)		
	Total semester hours = 18			
			Total semester hours = 13	

Also complete <u>one</u> of the following concentrations.

Computer Security Concentration

Complete all of the following courses - 16 semester hours:

CISC 280	Encryption Technologies	(4)
CISC 320	Computer Forensics	(4)
CISC 350	Database Security Management	(4)
CISC 450	Security Analysis	(4)

New Media Analysis and Integration Concentration

Complete all of the following courses - 16 semester hours:

CISC 290	Graphics and Visual Computing	(4)
CISC 300	Web Technologies	(4)
CISC 310	New Media Design I	(4)
CISC 420	New Media Design II	(4)

Information Technology Project Management and Systems Analysis Concentration

Complete all of the following courses - 16 semester hours:

CISC 340	Intellectual Issues and Systems	(4)
CISC 410	Information Technology Project Mgmt.	(4)
CISC 430	Software Engineering	(4)
CISC 460	Information Management	(4)

Recommended Sequence for Full-time Students Completing the Computer Security Concentration – The sequence that appears below was developed based upon the availability of specific courses each semester and the successful completion of course prerequisites.

	Semester I (Fall)		Semester II (Spring)	
	CISC 260 Programming Techniques	(4)	CISC 265 Internship (preferably Semester III)	
JUNIOR	CISC 240 Operating Systems	(4)		(3)
	ENGL 200 Advanced Composition and		CISC 280 Encryption Technologies	(4)
	Technical Writing	(3)	CISC 380 Computer Forensics	(4)
	SEMR 300 Keystone	(1)	CISC 398 Junior Project	(3)
	Electives	(3)	Elective	(3)
	Total semester hours = 15		**Total semester hours = 14 - 17**	
	CISC 350 Database Security Management		CISC 450 Security Analysis	(4)
SENIOR		(4)	SEMR 400 Capstone	(1)
	CISC 498 Senior Project	(3)	Electives	(9)
	GEND electives	(6)		
	Total semester hours = 13		**Total semester hours = 14**	

Recommended Sequence for Full-time Students Completing the New Media Analysis and Integration Concentration – The sequence that appears below was developed based upon the availability of specific courses each semester and the successful completion of course prerequisites.

	Semester I (Fall)		Semester II (Spring)	
JUNIOR	CISC 260 Programming Techniques	(4)	CISC 265 Internship (preferably Semester III)	
	CISC 240 Operating Systems	(4)		(3)
	ENGL 200 Advanced Composition and		CISC 290 Graphics and Visual Computing	(4)
	Technical Writing	(3)	CISC 300 Web Technologies	(4)
	SEMR 300 Keystone	(1)	CISC 398 Junior Project	(3)
	Electives	(3)	Electives	(3)
	Total semester hours = 15		**Total semester hours = 14 - 17**	
SENIOR	CISC 320 New Media Design I	(4)	CISC 420 New Media Design II	(4)
	CISC 498 Senior Project	(3)	SEMR 400 Capstone	(1)
	GEND electives	(6)	Electives	(9)
	Total semester hours = 13		**Total semester hours = 14**	

Recommended Sequence for Full-time Students Completing the Information Technology Project Management and Systems Analysis Concentration – The sequence that appears below was developed based upon the availability of specific courses each semester and the successful completion of course prerequisites.

	Semester I (Fall)		Semester II (Spring)	
JUNIOR	CISC 260 Programming Techniques	(4)	CISC 265 Internship (preferably Semester III)	
	CISC 240 Operating Systems	(4)		(3)
	ENGL 200 Advanced Composition and		CISC 340 Intellectual Issues and Systems	(4)
	Technical Writing	(3)	CISC 410 Information Technology Project	
	SEMR 300 Keystone	(1)	Management	(4)
	Electives	(3)	CISC 398 Junior Project	(3)
			Electives	(3)
	Total semester hours = 15		**Total semester hours = 14 - 17**	
SENIOR	CISC 430 Software Engineering	(4)	CISC 460 Information Management	(4)
	CISC 498 Senior Project	(3)	SEMR 400 Capstone	(1)
	GEND electives	(6)	Electives	(9)
	Total semester hours = 13		**Total semester hours = 14**	

Bachelor of Science in e-Business and Management Program

The e-Business and Management program encompasses a unique integration of information technology with the emerging business, e-government, and management skills needed to move companies forward in an information technology environment. Being located in the state capital, a University student has access to a diverse array of government and business sites using e-business technologies. The e-Business and Management program is designed to prepare the student for the global business environment and take advantage of electronic commerce opportunities in our new economy.

e-Business Requirements - The following courses comprise the e-Business and Management requirements. The semester hour value of each course appears in parentheses ( ).

Complete <u>all</u> of the following courses - 47 semester hours:

EBUS 110	Intro to e-Business Management	(3)
EBUS 210	Business Technologies and Applications	(3)
EBUS 220	Management Principles	(3)
EBUS 230	Marketing Principles	(3)
EBUS 310	e-Commerce & e-Government	(3)
EBUS 320	Managerial Accounting	(3)
EBUS 350	Financial Management	(3)
EBUS 420	International Management	(3)
CISC 120	Programming Fundamentals I	(4)
CISC 160	Programming Fundamental II	(4)
CISC 290	Graphic and Visual Computing	(4)
CISC 300	Web Technologies	(4)
CISC 310	New Media Design	(4)
GEND 465	Professional Ethics	(3)

Recommended Sequence for Full-time Students Completing the e-Business Program

The sequence that appears below was developed based upon the availability of specific courses each semester and the successful completion of course prerequisites.

	Semester I (Fall)		Semester II (Spring)	
FRESHMAN	ENGL 105 College Composition I	(3)	EBUS 110 Introduction to e-Business	
	GEND 101 The Creative Mind	(6)	Management	(3)
	MATH 120 College Algebra I	(3)	COMM 110 Speech	(3)
	SEMR 100 Cornerstone	(1)	GEND 111 The Scientific Mind	(6)
			MATH 280 Introductory Statistics	(3)

	Total semester hours = 13		Total semester hours = 15	

SOPHOMORE	EBUS 210 Business Technologies and		EBUS 230 Marketing Principles	(3)
	Applications	(3)	CISC 120 Programming Fundamental I	(4)
	EBUS 220 Management Principles	(3)	GEND 201 The Civic Mind	(6)
	ENGL 200 Advanced Composition and		Electives	(3)
	Technical Writing	(3)		
	MATH 220 Calculus I	(3)		
	SEMR 200 Steppingstone	(1)		
	Electives	(3)		

	Total semester hours = 16		Total semester hours = 16	

JUNIOR	EBUS 265 Internship	(3)	EBUS 350 Financial Management	(3)
	EBUS 310 e-Commerce & e-Government		EBUS 398 Junior Project	(3)
		(3)	CISC 290 Graphic & Visual Computing	(4)
	EBUS 320 Managerial Accounting	(3)	CISC 300 Web Design Fundamentals	(4)
	CISC 160 Programming		Electives	(3)
	Fundamentals II	(4)		
	SEMR 300 Keystone	(1)		

	Total semester hours = 14		Total semester hours = 17	

SENIOR	EBUS 498 Senior Project	(3)	EBUS 420 International Management	(3)
	CISC 310 New Media Design I	(4)	GEND 465 Professional Ethics	(3)
	GEND 351 Organizational Mind	(6)	SEMR 400 Capstone	(1)
	Electives	(3)	GEND elective	(6)

	Total semester hours = 16		Total semester hours = 13	

Geography and Geospatial Imaging Program

The Geography and Geospatial Imaging program provides the student with an understanding of the mathematics and science underlying today's geographic information applications. Additionally, the student will gain experience developing web-based methods of viewing and analyzing geographic data.

Students in this program will be prepared for a career in a variety of sciences ranging from geography and earth science to urban planning, architecture and ecology.

Geography and Geospatial Imaging Requirements (41 semester hours)

Complete all of the following courses - 41 semester hours:

GGSI 130	World Geography	(4)
GGSI 140	Introduction to GIS/GSI	(3)
GGSI 210	Cartography	(3)
GGSI 220	Applied Geospatial Technology	(4)
GGSI 230	Geography, Culture, & Conservation	(3)
GGSI 240	GIS/GSI Policy	(4)
GGSI 340	Spatial Statistics	(4)
GGSI 460	Satellite Remote Sensing	(4)
CISC 120	Programming Fundamentals I	(4)
CISC 160	Programming Fundamentals II	(4)
CISC 330	Computer and Network Security	(4)

Recommended Sequence for Full-time Students Completing the Geography and Geospatial Imaging Program – The sequence that appears below was developed based upon the availability of specific courses each semester and the successful completion of course prerequisites.

	Semester I (Fall)		Semester II (Spring)	
FRESHMAN	ENGL 105 College Composition I	(3)	GGSI 130 Geography of the World	(4)
	GEND 101 The Creative Mind	(6)	COMM 110 Speech	(3)
	MATH 120 College Algebra I	(3)	GEND 111 The Scientific Mind	(6)
	SEMR 100 Cornerstone	(1)	MATH 280 Introductory Statistics	(3)
	Total semester hours = 13		**Total semester hours = 16**	
SOPHOMORE	GGSI 140 Intro to GIS/GSI	(4)	GGSI 210 Cartography	(3)
	CISC 210 Discrete Mathematics	(3)	GGSI 220 Applied Geospatial	
	SEMR 200 Steppingstone	(1)	Technology	(4)
	GEND electives	(6)	CISC 120 Programming Fundamentals I	(4)
			ENGL 200 Advanced Composition and	
			Technical Writing	(3)
			Electives	(3)
	Total semester hours = 14		**Total semester hours = 17**	
JUNIOR	CISC 160 Programming Fundamentals II		CISC 330 Computer and Network	
		(4)	Security	(4)
	GGSI 230 Geography, Culture, &		GGSI 240 GIS/GSI Policy	(4)
	Conservation	(3)	GGSI 398 Junior Project	(3)
	GGSI 265 Internship	(3)	Electives	(4)
	GGSI 340 Spatial Statistics	(4)		
	SEMR 300 Keystone	(1)		
	Total semester hours = 15		**Total semester hours = 15**	
SENIOR	GGSI 460 Satellite Remote Sensing	(4)	SEMR 400 Capstone	(1)
	GGSI 498 Senior Project	(3)	GEND 201 The Civic Mind	(6)
	GEND 351 Organizational Mind	(6)	Electives	(7)
	Electives	(3)		
	Total semester hours = 16		**Total semester hours = 14**	

Bachelor of Science in Integrative Sciences Program

This program strives to produce a well-prepared student who is able to contribute to the local, regional, and global community on current scientific issues. An environment favorable to interdisciplinary learning in science and business is provided, and through classroom and experiential learning opportunities, the student is allowed to develop his or her own interests in the areas where the different disciplines overlap. In conjunction with the general education course work, students develop the skills to competently communicate with scientists and non-scientists, the motivation to be engaged citizens, the capacity to be sensitive to the needs of local and global communities, and the knowledge in the physical sciences to enter the workforce or graduate school.

Integrative Sciences Requirements - Complete all of the following courses (15 semester hours): INSC 180 Integrative Science II (3), BIOL 101 General Biology (4), CHEM 150 General Chemistry I (4), and PHYS 210 General Physics I (4). Completion of one of the following concentrations is also required: Biology, Chemistry, or Forensics. A complete list of the program requirements by concentration follows along with a recommended sequence for completion within 8 full-time semesters.

Biology Concentration - 46 semester hours

The following courses comprise the biology concentration of the Integrative Sciences program. The semester hour value of each course appears in parentheses ( ).

Complete all of the following courses - 15 semester hours:

INSC 180	Integrative Science II	(3)
BIOL 101	General Biology	(4)
CHEM 150	General Chemistry I	(4)
PHYS 210	General Physics I	(4)

Complete all of the following courses - 19 semester hours:

BIOL 280	Cell Biology	(4)
BIOL 302	Principles of Ecology	(4)
BIOL 320	Genetics	(3)
CHEM 160	General Chemistry II	(4)
CHEM 210	Organic Chemistry I	(4)

Complete 12 semester hours from the following courses:

BIOL 214	Anatomy and Physiology I	(4)
BIOL 215	Anatomy and Physiology II	(4)
BIOL 330	Microbiology	(4)
BIOL 340	Introduction to Biochemistry	(4)
BIOL 370	Molecular Biology	(4)
BIOL 375	Immunology	(4)
BIOL 225	Forensic Entomology	(4)
INSC 350	Animal Behavior	(4)

Recommended Sequence for Full-time Students Completing the Biology

Concentration – The sequence which appears below was developed based upon the availability of specific courses each semester and the successful completion of course prerequisites.

	Semester I (Fall)		Semester II (Spring)	
FRESHMAN	ENGL 105 College Composition I	(3)	BIOL 101 General Biology	(4)
	GEND 101 The Creative Mind	(6)	COMM 110 Speech	(3)
	MATH 120 College Algebra I	(3)	GEND 111 The Scientific Mind	(6)
	SEMR 100 Cornerstone	(1)	MATH 280 Introductory Statistics	(3)
	Total semester hours = 13		**Total semester hours = 16**	
SOPHOMORE	BIOL 180 Cell Biology	(4)	CHEM 160 General Chemistry II	(4)
	CHEM 150 General Chemistry I	(4)	ENGL 200 Advanced Composition and	
	MATH 220 Calculus I	(3)	Technical Writing	(3)
	SEMR 200 Steppingstone	(1)	INSC 180 Integrative Sciences II	(3)
	BIOL, GEND, or electives	(3 – 4)	INSC 265 Internship	(3)
			BIOL, GEND, or electives	(3 – 4)
	Total semester hours = 15 - 16		**Total semester hours = 16 - 17**	
JUNIOR	CHEM 210 Organic Chemistry I	(4)	BIOL 320 Genetics	(3)
	GEND 401 The Organizational Mind	(6)	BIOL 302 Principles of Ecology	(4)
	PHYS 210 General Physics I	(4)	INSC 398 Junior Project	(3)
	SEMR 300 Keystone	(1)	GEND 200 The Civic Mind	(6)
	Total semester hours = 15		**Total semester hours = 16**	
SENIOR	INSC 498 Senior Project	(3)	SEMR 400 Capstone	(1)
	BIOL, GEND, or electives	(9 – 12)	BIOL, GEND, or electives	(11-14)
	Total semester hours = 12 - 15		**Total semester hours = 12 - 15**	

Chemistry Concentration - 43 semester hours

The following courses comprise the chemistry concentration of the Integrative Sciences program. The semester hour value of each course appears in parentheses ( ).

Complete all of the following courses -15 semester hours:

INSC 180	Integrative Science II	(3)
BIOL 101	General Biology	(4)
CHEM 150	General Chemistry I	(4)
PHYS 210	General Physics I	(4)

Complete all of the following courses - 15 semester hours:

CHEM 160	General Chemistry I	(4)
CHEM 200	Environmental Chemistry I	(3)
CHEM 210	Organic Chemistry I	(4)
PHYS 260	General Physics II: A Life Science Perspective	(4)

Complete 13 semester hours from the following courses:

CHEM 220	Organic Chemistry	(4)
CHEM 310	Environmental Chemistry II	(4)
CHEM 320	Bio-Organic Chemistry	(4)
CHEM 340	Forensic Chemistry	(4)
CHEM 410	Physical Chemistry	(4)
CHEM 420	Inorganic Chemistry	(4)

Recommended Sequence for Full-time Students Completing the Chemistry Concentration – The sequence which appears below was developed based upon the availability of specific courses each semester and the successful completion of course prerequisites.

	Semester I (Fall)		**Semester II (Spring)**	
FRESHMAN	ENGL 105 College Composition I	(3)	BIOL 101 General Biology	(4)
	GEND 101 The Creative Mind	(6)	COMM 110 Speech	(3)
	MATH 120 College Algebra I	(3)	GEND 111 The Scientific Mind	(6)
	SEMR 100 Cornerstone	(1)	MATH 280 Introductory Statistics	(3)
	Total semester hours = 13		**Total semester hours = 16**	
SOPHOMORE	BIOL 180 Cell Biology	(4)	CHEM 160 General Chemistry II	(4)
	CHEM 150 General Chemistry I	(4)	ENGL 200 Advanced Composition and	
	MATH 220 Calculus I	(3)	Technical Writing	(3)
	SEMR 200 Steppingstone	(1)	INSC 180 Integrative Sciences II	(3)
	CHEM, GEND, or electives	(3 - 4)	INSC 265 Internship	(3)
			BIOL, GEND, or electives	(3 – 4)
	Total semester hours = 15 – 16		**Total semester hours = 16 - 17**	
JUNIOR	CHEM 210 Organic Chemistry I	(4)	INSC 398 Junior Project	(3)
	GEND 351 The Organizational Mind		GEND 201 The Civic Mind	(6)
		(6)	HYS 260 General Physics II: A Life Science	
	PHYS 210 General Physics I	(4)		(4)
	SEMR 300 Keystone	(1)	CHEM or elective	(4)
	Total semester hours = 15		**Total semester hours = 17**	
SENIOR	INSC 498 Senior Project	(3)	SEMR 400 Capstone	(1)
	CHEM 200 Environmental Chemistry	(3)	CHEM, GEND, or electives	(11-14)
	CHEM, GEND, or electives	(9 – 12)		
	Total semester hours = 12 - 15		**Total semester hours = 12 - 15**	

Forensics Concentration - 43 semester hours

The following courses comprise the Forensics concentration of the Integrative Sciences program. The semester hour value of each course appears in parentheses ( ).

Complete all of the following courses - 15 semester hours:

INSC 180	Integrative Science II	(3)
BIOL 101	General Biology	(4)
CHEM 150	General Chemistry I	(4)
PHYS 210	General Physics I	(4)

Complete all of the following courses - 14 semester hours:

BIOL 125	Introduction to Forensics	(3)
BIOL 270	Crime Scene Investigation	(4)
INSC 361	Criminal Profiling	(3)
INSC 360	Forensic Case Study	(4)

Complete 14 semester hours chosen from the following courses:

BIOL 315	Forensic Entomology	(3)
CISC 320	Forensic Computing	(4)
INSC 160	Introduction to Forensic Computing	(3)
INSC 362	Medico-Legal Death	(3)
INSC 363	Forensic Population Studies	(3)
INSC 361	Criminal Profiling	(3)
INSC 364	Fraud Investigation	(3)

Recommended Sequence for Full-time Students Completing the Forensics Concentration – The sequence that appears below was developed based upon the availability of specific courses each semester and the successful completion of course prerequisites.

	Semester I (Fall)		**Semester II (Spring)**	
FRESHMAN	ENGL 105 College Composition I	(3)	BIOL 101 General Biology	(4)
	GEND 101 The Creative Mind	(6)	GEND 111 The Scientific Mind	(6)
	MATH 120 College Algebra I	(3)	MATH 280 Introductory Statistics	(3)
	SEMR 100 Cornerstone	(1)	COMM 110 Speech	(3)
	Total semester hours = 13		**Total semester hours = 16**	
SOPHOMORE	CHEM 150 General Chemistry I	(4)	BIOL 125 Forensic Science	(3)
	GEND 351 The Organizational Mind	(6)	INSC 180 Integrative Sciences II	(3)
	MATH 220 Calculus I	(3)	ENGL 200 Advanced Composition and	
	SEMR 200 Steppingstone	(1)	Technical Writing	(3)
			GEND 201 The Civic Mind	(6)
	Total semester hours = 14		**Total semester hours = 15**	
JUNIOR	CHEM 210 Organic Chemistry I	(4)	INSC 265 Internship	(3)
	PHYS 210 General Physics I	(4)	INSC 270 Crime Scene Investigation	(4)
	SEMR 300 Keystone	(1)	INSC 398 Junior Project	(3)
	Forensics electives	(6 – 7)	GEND elective	(6)
	Total semester hours = 15-16		**Total semester hours = 16**	
SENIOR	INSC 361 Criminal Profiling	(3)	SEMR 400 Capstone	(1)
	INSC 498 Senior Project	(3)	INSC 360 Forensic Case Study	(4)
	Forensics electives	(3)	Forensics electives	(4)
	Electives	(6 - 7)	Electives	(6)
	Total semester hours = 15-16		**Total semester hours = 15**	

University Courses - Undergraduate

BIOLOGY (BIOL)

BIOL 101 General Biology (4 semester hours)
Prerequisites: None
Corequisites: None
Description: This course will introduce the student to the major themes of biology, including overviews of the cell, genetics, the diversity of life in both plants and animals, and evolution. Three hours of lecture/Two hours of lab per week.

BIOL 125 Forensic Science (3 semester hours)
Prerequisites: None
Corequisites: None
Description: This course explores the science and art of forensic investigations and the identification, proper collection and recognition of evidence. Students look at a variety of specialty areas such as firearms, tool marks, fiber tracing, hair paint and toxicology as well as photography. Crime scenes are explored, bringing in experts in the field and continually using critical thinking skills to produce alternative strategies by thinking creatively and "outside the box." In this course the student will learn the fundamentals of the science behind the crime. Case studies are presented as group projects and students will be expected to provide several scenarios and evidence for alternative conclusions.

BIOL 214 Anatomy & Physiology I (4 semester hours)
Prerequisites: BIOL 101
Corequisites: None
Description: This course is the first part in a two-part series discussing the structural and functional makeup of the human body. The first part of this course will deal with learning the necessary medical and anatomical terminology. Emphasis will be placed on covering the details of development, histology and functioning of the muscular, circulatory, cardiovascular and endocrine systems.

BIOL 215 Anatomy & Physiology II (4 semester hours)
Prerequisites: BIOL 214
Corequisites: None
Description: This course is a continuation of BIOL 110 Anatomy and Physiology I. The course will cover the immune system, lymphatic system, gastrointestinal tract and digestion, genitourinary system and the nervous system. The last portion of this course will deal primarily with an in-depth examination of all five senses.

BIOL 225 Entomology (4 semester hours)
Prerequisites: BIOL 214
Corequisites: None
This course introduces the biology, ecology and evolution of insects in both naturalistic and human context. Subject matter and course content will include field observation and collection techniques as well as case studies of evolutionary, economical and historical importance. This course also prepares students for Forensic Entomology.

BIOL 230 Anatomy & Physiology I & II (8 semester hours)
Prerequisites: None
Corequisites: None
Description: This course will consist of an integrated lecture/laboratory that will place emphasis on the overall structure and function of the human body. A systemic approach will be used to develop an overall understanding of how each of the various organ systems helps maintain homeostasis. Not only the normal functioning of each organ system is explored, but other discussions include microscopic anatomy, developmental biology and pathology.

BIOL 240 Introduction to Biochemistry (4 semester hours)
Prerequisites: CHEM 150
Corequisites: None
Description: This course provides an in-depth study into the life process and cellular elements governing the biochemistry of life. Topics covered allow the student an understanding of the molecular and cellular mechanisms governing metabolism, structure and function from a molecular view.

BIOL 280 Cell Biology (4 semester hours)
Prerequisites: BIOL 101 or BTEC 170
Corequisites: None
Description: This course is primarily concerned with eukaryotic cells from their evolution, organization, differentiation and biosynthesis. In this course students cover the simplicity and complexity of the macromolecules through energy, nutrition, order catabolism, and synthesis of cellular components. The course goal is to stimulate the learning of cellular mechanism and is expected to precede future offerings in molecular biology and biochemistry.

BIOL 302 Principles of Ecology (4 semester hours)
Prerequisites: BIOL 280, INSC 180 or permission of the instructor
Corequisites: None
Description: This course examines theories (including a variety of mathematical, verbal, and graphical models of important ecological processes); techniques of study (both laboratory and field-based); and natural history. Students explore 1) various questions (in a broad sense) asked by ecologists, 2) ideas (theories, models) from which hypotheses are suggested to answer the questions, and 3) ways in which ecologists go about gathering data to refute or support the proposed hypotheses. Specific ecological studies are used to illustrate what has been learned about the natural world.

BIOL 315 Forensic Entomology (3 semester hours)
Prerequisites: 45 semester hours completed and BIOL 280 or permission of the instructor
Corequisites: None
Description: The forensic entomologist can use a number of different techniques including insect species succession, larval weight, length and technical methods such as accumulated degree hour technique. Students learn about and, when practical, see standard procedures. This course is designed as a component in the forensic science concentration.

BIOL 320 Genetics (3 semester hours)
Prerequisites: BIOL 280, CHEM 150, or permission of the instructor
Corequisites: None
Description: In this course students will go beyond simple memorization to truly learn to connect the facts together to get a whole picture, apply the knowledge, and solve problems. This basic genetics course introduces students to not only the traditional elements of genetic biology, but also to contemporary

genetic issues. It is more than a survey of topics but a co-coordinated approach to modern technological manipulations, including recombinant gene techniques.

BIOL 330 Microbiology (4 semester hours)
Prerequisites: BIOL 280
Corequisites: None
Description: This course is an introduction to microbial cell structure, growth and physiology, as well as basic laboratory techniques. The relationship between host and parasite relationship is emphasized, especially as related to human disease, epidemiology and infection control. Students will learn about a broad range of infectious diseases including etiologic agent identification, modes of transmission and prevention.

BIOL 370 Molecular Biology (4 semester hours)
Prerequisites: CHEM 150 and BIOL 280
Corequisites: None
Description: The complicated process that goes on in living cells and organisms, in terms of the law of chemistry and physics, is described. The genetic message is examined, as it is carried in the form of DNA through transcription and translation as well as the biosynthesis of macromolecules. This course is a basic introduction which is designed to follow basic chemistry (general and organic), as well as biology coursework to help complete an understanding of life chemistry.

BIOL 375 Immunology (4 semester hours)
Prerequisites: BIOL 280
Corequisites: None
Description: This course explores the innate and acquired specific aspects of the immune system. Students study how host defenses protect humans and try to keep the body disease free. Through an understanding of the nature of antibodies, lymphokines and specific cellular reaction, students discover the power and limitation of the immune system.

BIOTECHNOLOGY (BTEC)

BTEC 105 The Art of Genes & Fusion (3 semester hours)
Prerequisites: None
Corequisites: None
Description: Investigations using a variety of case studies and contemporary topics in Biotechnology and genetic engineering are completed. The links of diseases and genes, such as leukemia and cancer, are examined. In this process, the student will learn about molecular concepts regarding DNA, genes, proteins, and chromosome mapping. The student will see the importance of biotechnology to help combat human diseases and disorders.

BTEC 170 Introduction to Biotechnology (3 semester hours)
Prerequisites: None
Corequisites: None
Description: This course is designed to provide a lens into the topics, scope, realities and the future of the biotechnology field. This is not a laboratory introductory course, but instead covers a variety of important and sometimes controversial topics such as cloning, stem cell use and genetic (forensic) identification of individuals, and genetic traits. This course serves as a foundation for the laboratory classes and upper division courses.

BTEC 235 Applied Cell & Agro Culture (4 semester hours)
Prerequisites: CHEM 210 and BIOL 280
Corequisites: None
Description: The fields of biology, biochemistry, molecular biology and biotechnology are increasingly dependant on growing and experimenting with cells in culture. At one time animal models predominated but today cell culture is becoming ever important. This course offers a concise, practical guide to the basic essentials of the techniques used in modern cell culture laboratory. Using hands-on laboratory experimentation, the procedures and application of cell culture are explored.

BTEC 265 Internship (3 semester hours)
Prerequisites: Permission of Internship Coordinator and completed paperwork
Corequisites: None
Description: Internships engage students in putting theory to practice in the classroom of work. This form of experiential learning propels and applies education into the world of action, where ideas are tested and career-ready skills developed. These immediate, concrete experiences in the workplace become the basis for "learning-by-doing" as students discover new opportunities to develop new skills and competencies. Students at the internship site acquire new knowledge and skills by successfully meeting interpersonal and intellectual challenges. A successful internship requires more than just 'going to work;' internships are part of a learning and reflection cycle. Throughout each internship, students work with individual faculty supervisors who together observe and reflect on what was accomplished. Students integrate these reflections into a comprehensive internship portfolio which both showcases specific achievements in the workplace and analyzes the quality of the learning throughout the internship. Students may engage in an internship during the sophomore, junior, and senior project course or through the use of elective credit. The prefix numbering of internships reflects the level of engagement and complexity of the placement.

BTEC 310 Biotechnology Applications (4 semester hours)
Prerequisites: CHEM 150 and BIOL 180
Corequisites: None
Description: This course examines the various applications in the field of biotechnology at a molecular level which aids the understanding of cellular mechanisms. This course is not laboratory intensive (BTEC 350 is laboratory intensive) but instead looks at the power, limitation, proper use and theoretical framework around the various biotechnology applications. Biotechnology-related workforce growth and the various area corporations involved in the field provide illustrations.

BTEC 350 Biotechnology Techniques (3 semester hours)
Prerequisites: CHEM 150, CHEM 160 and BIOL 280
Corequisites: None
Description: This is a laboratory intensive course created to develop the skills and competencies and the fundamental manipulations and research procedures in biotechnology. Students will be exposed to a variety of relevant biotechnology techniques in laboratory or research and commercial centers.

BTEC 360 Biotechnology Seminar (3 semester hours)
Prerequisites: 60 semester hour hours completed
Corequisites: None
Description: This seminar course will review and discuss newsworthy advances and applications in the field of biotechnology. Class activities will include primary article reviews, internet research, and meeting with guest professionals. Tours of certain facilities involved in biotechnology may also be planned. Students read and discuss current articles available online.

BTEC 370 Genetically Modified Foods (3 semester hours)
Prerequisites: BTEC 170, CHEM 150, and BIOL 280
Corequisites: None
This course explores the impact of plant and animal biotechnology on food nutrition. The advantages and disadvantages of genetically modified foods will be explored. This involves the biological and economic impact of biotechnology on our food supply. This course will draw heavily from the SENCER model series and the National Science Case Study library.

BTEC 390 Directed Study (variable credit)
Prerequisites: 60 semester hour hours completed
Corequisites: None
Description: Students are responsible for designing and selecting a topic germane to the program of study in which the student will perform in-depth reading, information research, and synthesis under the tutorage of a faculty member. The individual emphasis areas must be selected and approved by faculty advisor. The student and faculty will agree on a set of readings to be accomplished over the course of the semester. Student faculty meetings will occur every other week for a minimum of one hour. The directed study culminates in a paper that synthesizes and integrates the various readings. The semester hour value for a Directed Study can range from 1-4 semester hours and will need to be approved by a faculty advisor.

BTEC 398 Junior Project (3 semester hours)
Prerequisites: Junior Status
Corequisites: None
Description: The junior project challenges students to identify a particular topic to examine. Students must produce a research proposal paper in preparation for a senior lab-based research project. Students meet at set times and meet benchmarks to earn a desired grade. The research proposal paper includes a literature search, experimental design (how and where research is to be done) and identification of community collaborators. This project is usually undertaken in a student's junior year under the close mentorship of a faculty member and the community host. The semester hour value for a Junior Project will need to be approved by a faculty advisor.

BTEC 498 Senior Project (3 semester hours)
Prerequisites: Senior Status
Corequisites: None
Description: During the senior project the student actively completes the research proposed in the junior project's research proposal. This project should demonstrate application of the skills, methods, and knowledge of the discipline to solving a problem representative of the type to be encountered at the professional level. The Senior Project activities encompass research, development and application, involve analysis or synthesis, and emphasize a particular concentration in the major or combined aspects of several sub areas. A contract is signed that outlines dates for deliverables and public sharing of information (at Biotech Day, etc.). This project is undertaken in a student's senior year. The project is facilitated by appropriate faculty member(s).   The Senior Project will need to be approved by a faculty advisor.

CHEMISTRY (CHEM)

CHEM 150 General Chemistry I (4 semester hours)
Prerequisites: None
Corequisites: None
Description: This course with laboratory provides a general introduction to the fundamental facts and principles of chemistry and serves as a Prerequisite for advanced courses. The student will be introduced to chemical phenomena and principles, with an emphasis on developing an understanding of chemistry and an appreciation of what chemists do. Students learn to interpret chemical phenomena using chemical vocabulary and principles, and acquire skills in manipulating mathematical formulations that describe the chemical behavior of various substances. It is essential that the basic vocabulary of chemistry is learned.

CHEM 160 General Chemistry II (4 semester hours)
Prerequisites: CHEM 150 or permission of the instructor
Corequisites: None
Description: CHEM 160 (and its companion course, CHEM 150) is designed to introduce the student to chemical phenomena and principles. This course with laboratory will give the student practice in critical thinking, reading and writing, as well as an opportunity to further develop collaborative skills in problem-solving and experimental design. The importance of chemistry in the "real world" and everyday life will be emphasized. To make the course a complete learning experience, laboratory experiments will be used to supplement the lecture because chemistry is an experimental science.

CHEM 200 Environmental Chemistry I (4 semester hours)
Prerequisites: GEND 110 or permission of the instructor
Corequisites: None
Description: This course is a study with laboratory into the chemical nature of the environment. Through engagement with subjects like radon, air pollution and water quality, a social context to the very complex and capacious problems facing citizens today is examined as individuals make decisions related to issues involving environmental chemistry. This course engages the student in projects and community-based research so as to link science to the process of social and public policy. Students choose issues of interest that connect to their daily lives. Students investigate and explore those issues throughout the semester and develop recommendations for addressing or alleviating the issue/problem as the final outcome of the project.

CHEM 210 Organic Chemistry I (4 semester hours)
Prerequisites: CHEM 160
Corequisites: None
Description: This organic chemistry offering with laboratory is designed as a first-level introduction into the carbon based reactions involved in life chemistry. It sets a background for advanced study in analytic chemistry and biochemistry. Organic chemistry is simply defined as "the chemistry of carbon compounds," but the chemistry itself is not simple. The student will study fascinating and relevant elements of these components in both natural and synthetic reactions.

CHEM 220 Organic Chemistry II (4 semester hours)
Prerequisites: CHEM 210 or permission of the instructor
Corequisites: None
Description: Organic Chemistry II (CHEM 220) is the second semester course of organic chemistry with laboratory which builds upon the principles learned in the first course (CHEM 210). It is designed to provide a foundation in the fundamentals of organic compounds, their structures, reactions, and

underlying reaction mechanisms. Organic chemistry is a tool for many other disciplines including biology, environmental science, and medicine. Examples of how organic chemistry affects all of us each and every day will be shown. Laboratory experiences are designed to complement the lecture. Labs will be performed in small groups and will be student-designed.

CHEM 310 Environmental Chemistry II (4 semester hours)
Prerequisites: CHEM 200 or permission of the instructor
Corequisites: None
Description: This laboratory intensive course is concerned with several specific topics related to environmental chemistry-specifically the transport of chemicals and energy amongst soil, air, and water phases, rates of movement of solutes and the chemical impact to biological systems. This is an advanced course specifically tailored for those in the integrative sciences program of study or those with specific interest in environmental chemistry. Students who wish to complete the concentration or certificate in environmental chemistry are required to take this course; others have the opportunity to take this course as an elective.

CHEM 320 Bio Organic Chemistry (3 semester hours)
Prerequisites: CHEM 150, 160, 210, 220
Description: This organic chemistry offering is designed as an advanced undergraduate level study of the structure and reactivity of carbon-based bio-molecules. Approximately one-half of the course is devoted to a description of the structure and chemical properties of bio-organic compounds. The second half of the course draws upon the concepts from organic and inorganic chemistry in order to investigate enzymatic reactions and metabolism.

COMMUNICATION (COMM)

COMM 110 Speech (3 semester hours)
Prerequisite: ENGL 105
Corequisite: None
This course will build on the skills acquired in ENGL 105. The student will continue to develop an understanding of purpose and audience by studying the writing process. Through writing, discussion, and oral presentation, the student will learn strategies to communicate effectively to a specific audience. In addition, formal argument will be introduced through preparation for and participation in a debate. By the completion of this course, the student will have built an awareness of the basic skills needed to communicate across the disciplines.

COMPUTER AND INFORMATION SCIENCES (CISC)

CISC 100 Learning Programming Using Lego Mindstorms Robots (3 semester hours)
Prerequisites: None
Corequisites: None
Description: This course will provide an introduction to mobile robots and the fundamental concepts of programming by using Lego Mindstorms RCX robots. The course consists of lectures followed by hands-on exercises to be performed in groups (two students each). There will be a substantial final project where students will showcase their creativity. The course main goals are obtaining both visual and textual programming skills as well as promoting social aptitudes such as leadership and teamwork. Prerequisite for this course: lots of creativity.

CISC 120 Programming Fundamentals I (4 semester hours)
Prerequisites: Basic Computer Skills
Corequisites: Intermediate Algebra
Description: This course introduces the concepts and techniques of computer programming. Emphasis is placed on developing the student's ability to apply problem-solving strategies to design algorithms and to implement these algorithms in a modern, structured programming language. Topics include: fundamental programming constructs, problem solving techniques, simple data structures, Object Oriented Programming (OOP), program structure, data types and declarations, control statements, algorithm strategies, and algorithm development. This course is taught using an Object Oriented Programming Language. This course includes a laboratory component.

CISC 160 Programming Fundamentals II (4 semester hours)
Prerequisites: CISC 120
Corequisites: None
Description: This course further develops the concepts and techniques of computer programming. Emphasis is placed on structured programming, top-down design, more advanced data structures, and the proper use of the programming language and development tools. Topics include: abstract data types (ADTs), sets, records, recursion, problem solving and algorithms, fundamental computing algorithms, searching, introductory sorting, hash tables, basic algorithm analysis, Object Oriented Programming (OOP), files, linked lists, queues, stacks, and binary trees. This course is taught using an Object Oriented Programming Language. This course includes a laboratory component.

CISC 240 Operating Systems (4 semester hours)
Prerequisites: CISC 160
Corequisites: None
Description: This course provides an introduction to the design and implementation of operating systems. The student will be exposed to different operating systems on various computer platforms, and will be expected to develop a significant operating system programming project in this area. Topics include: operating systems principles, computer architecture, concurrency threads, CPU scheduling and dispatching, memory management techniques, computer security, and system administration. Specific examples such as Windows XP, Unix, and Linux will be used. This course is taught using an Object Oriented Programming Language. This course includes a laboratory component.

CISC 260 Programming Techniques (4 semester hours)
Prerequisites: CISC 160
Corequisites: None
Description: This course is a systematic study of programming languages and algorithms organized around the unifying concept of data and code abstraction. Emphasis is placed on ADT-based and object-oriented design, incremental development and testing, and comparison of data structure implementations. Topics include programming paradigms, programming language comparisons, functional programming scripting languages, objects, algorithm design and analysis, trees, graphs, sorting, and searching. This course is taught using an Object Oriented Programming Language. This course includes a laboratory component.

CISC 265 Internship (3 semester hours each)
Prerequisites: Permission of Internship Coordinator
Corequisites: None
Description: Internships engage students in putting theory to practice in the classroom of work. This form of experiential learning propels and applies education into the world of action where ideas are tested and career-ready skills developed. These immediate, concrete experiences in the workplace become the basis for "learning by doing" as students discover new opportunities to develop new skills and competencies. University students at the internship site acquire new knowledge and skills by successfully

meeting interpersonal and intellectual challenges. A successful internship requires more than just 'going to work;' internships are part of a learning and reflection cycle. Throughout each internship, students work with individual faculty supervisors who together observe and reflect on what was accomplished. Students integrate these reflections into a comprehensive internship portfolio which both showcases their specific achievements in the workplace and analyzes the quality of their learning throughout the internship. Students may engage in an internship as sophomores, juniors and/or seniors to meet the CISC Program course requirements and/or through the use of their elective credits. The prefix numbering of internships reflects the level of engagement and complexity of the placement.

CISC 280 Encryption Technologies (4 semester hours)
Prerequisites: CISC 160
Corequisites: CISC 210
Description: This course will cover the analysis of cryptographic algorithms, cryptanalysis, symmetric key cryptography, public key cryptography, Diffie-Hellman, DES, AES, RSA, Blowfish, Twofish, hash and MAC functions, digital signatures, pseudo-random generators, cryptographic protocols, SSL/TLS, SET. These algorithms represent the actual ciphers used in most standard secure applications. The student will be challenged to implement these algorithms using an Object-Oriented Programming Language such as C# or Java. This course includes a laboratory component.

CISC 290 Graphics & Visual Computing (4 semester hours)
Prerequisites: CISC 160
Corequisites: None
Description: This course introduces the essential topics in visual computing, graphics, and multimedia. Emphasis is placed on programming and using graphical content. Topics include GUI Programming, Human-Computer Interfacing, 3D Graphics Programming, Computer animation, image manipulation, window programming, mouse, events, video manipulation, multimedia, and virtual reality. This course is taught using an Object Oriented Programming Language along with software packages. This course includes a laboratory component.

CISC 300 Web Technologies (4 semester hours)
Prerequisites: CISC 160
Corequisites: 45 semester hour hours completed
Description: In this course the student will study, experiment, explore, and design a website using basic software. Students work individually and in teams to build, launch, and market a website for a community member or as a university project. This course includes a laboratory component.

CISC 310 New Media Design I (4 semester hours)
Prerequisites: CISC 290 and CISC 300
Corequisites: None
Description: This course explores the fundamental theory and practice of new media. It will prepare students for creative expression and technology application in all aspects of multimedia for effective message communication whether it be for a specific product, a game, or entertainment site, instruction or e-Commerce. In this class the student will use new and emerging interactive digital media to create, store, transmit, and sell products and services. The student may work on a project to enhance a local employer to recruit and expand business. This course includes a laboratory component.

CISC 320 Computer Forensics (4 semester hours)
Prerequisites: CISC 240, CISC 330
Corequisites: None
Description: This course is designed to provide students with a unique hands-on experience in digital forensics using specific case studies. Emphasis is placed on computer incident responses and security risk

assessments. Technical and legal issues regarding computer evidence are also covered as they have a bearing on both computer incident responses and computer-related investigations. This course stresses computer evidence preservation, cross validation of forensic tools and the documentation of computer evidence findings. Solid computer evidence processing methodologies are also taught to help overcome legal "junk science" attacks against the admissibility of computer-related evidence. This course has a laboratory component.

CISC 330 Computer & Network Security (4 semester hours)
Prerequisites: CISC 160
Corequisites: None
Description: This course will cover the essential issues in computer (digital) and network security. Topics include: viruses, Internet worms, computer crime, web server security, denial of service attacks, authentication protocols, firewalls, Trojan horses, intrusion detection, data encryption methods, public key cryptography (RSA, DES), email viruses, attachments, spy ware, digital homeland security, and issues in wireless technologies and mobile computing. The student will be expected to develop a significant programming project in this area. This course is taught using an Object Oriented Programming Language. This course includes a laboratory component.

CISC 340 Intellectual Issues & Systems (4 semester hours)
Prerequisites: CISC 260
Corequisites: None
Description: This course introduces intellectual issues and intelligent systems in the computer field. Topics include: Fundamentals of intelligent systems, Artificial Intelligence (AI), AI Search Strategies, knowledge representation, privacy issues and civil liberties, intellectual property, digital copyrights and patent issues, social and ethical issues, intelligent (Internet) agents, intelligent manufacturing systems, and robotics. This course is taught using an Object Oriented Programming Language, LISP, and/or Prolog Programming languages. This course includes a laboratory component.

CISC 350 Database Security Management (4 semester hours)
Prerequisites: CISC 280, CISC 330
Corequisites: None
Description: This course will focus on design principles of trusted computing bases (TCB). Issues regarding authentication, access control and authorization, discretionary and mandatory security policies, secure kernel design, secure operating systems, and secure databases will be covered from a systems architecture perspective. Emphasis will be on the design of security measures for critical information infrastructures. This course will also focus on the design and implementation details of secure data storage. Emphasis will be placed on multilevel security in database systems, covert channels, and security measures for relational and object-oriented database systems. This course has a laboratory component.

CISC 360 Communication Networks (4 semester hours)
Prerequisites: CISC 160
Corequisites: None
Description: This course will introduce the essential terminology, elements and architecture of communication networks, data communication systems, server management, network administration, data integrity, and network security. Topics include communication network principles, network administration, web servers, web site management, Internet and network programming, ISO, TCP/IP models, programming web and network applications, introduction to network security, wireless technologies and mobile computing. The student will be expected to develop a significant programming project in this area. This course is taught using an Object Oriented Programming Language. This course includes a laboratory component.

CISC 390 Directed Study (variable credit)
Prerequisites: 60 semester hour hours completed
Corequisites: None
Description: Students are responsible for designing and selecting a topic germane to their program of study in which they will perform in depth reading, information research, and synthesis under the tutorage of a faculty member. The individual emphasis areas must be selected and approved by faculty mentor. The student and faculty will agree on a set of readings to be accomplished over the course of the semester. Student-faculty meetings will occur every other week for a minimum of one hour. The directed study culminates in a synthesis and integration of the various readings into an integrative study report. The paper must be submitted in draft form, reviewed by the faculty member with feedback and revised. The semester hour value for a Directed Study can range from 1 to 4 semester hours and will need to be approved by a faculty advisor.

CISC 398 – Junior Project (3 semester hours)
Prerequisites: Junior Status
Corequisites: None
Description: The junior project challenges students to identify, investigate and analyze a particular topic and to examine how computer science and/or technology interact with societal structures and value systems. The problem-solving community-based research project is an ideal junior project. An objective is to enable graduates to connect and understand their role in the larger community of which they are a part. This project is usually undertaken in a student's junior year under the close mentorship of a faculty member and the community host. Approved by a faculty advisor is required.

CISC 410 – Information Technology Project Management (4 semester hours)
Prerequisites: 45 semester hour hours completed
Corequisites: None
Description: This course introduces students who have a background in computers and information sciences to a variety of skills and roles of the IT project manager. We will learn the basic techniques of project management from setting goals and objectives through managing selection of IT support products and procurement. This course includes a laboratory component.

CISC 420 – New Media Design II (4 semester hours)
Prerequisites: CISC 310
Corequisites: None
Description: This course covers advanced multimedia applications, extending the previously learned multimedia and visual computing from CISC 290 and CISC 310. This course makes use of experiential learning through the investigation of realistic 3D virtual worlds. This course will pay attention to the addition of other multimedia elements such as audio content. This course will study the effectiveness of overall 3D content. This course has a laboratory component.

CISC 430 – Software Engineering (4 semester hours)
Prerequisites: CISC 330 and CISC 360
Corequisites: None
Description: This course will introduce object-oriented software engineering concepts, methodologies and tools, requirements analysis, specification, design and implementation of object-oriented software development process using UML. Topics include: software design, using API's, software tools and environments, software requirements and specifications, software project management tools, software testing and reliability, software validation. The student will be expected to develop a significant programming project in this area. This course includes a laboratory component.

CISC 450 – Security Analysis (4 semester hours)
Prerequisites: CISC 350 and CISC 360
Corequisites: None
Description: This course integrates all of the knowledge accumulated through the previous courses and serves as a capstone for the Concentration in Cyber Security. The class focuses on techniques for protecting critical information infrastructures through case studies, application development, and systems assessment. This course has a laboratory component.

CISC 460 – Information Management (4 semester hours)
Prerequisites: CISC 260 and CISC 360
Corequisites: None
Description: This course will introduce physical and logical organization of databases, data retrieval languages, relational database languages, security and integrity, concurrency, distributed databases, and web access to database information. Emphasis is on software design using a relational database management system. Topics include: information systems, database management systems, relational databases, database design, query languages (SQL), data warehousing, data mining, database security, web site architecture and development (with database access.) The student will be expected to develop a significant programming project in this area. This course includes a laboratory component.

CISC 498 – Senior Project (3 semester hours)
Prerequisites: Senior Status and successful completion of CISC 398
Corequisites: None
Description: The Senior Project must be in the student's major area of study. This project should demonstrate application of the skills, methods, and knowledge of the discipline to solving a problem representative of the type to be encountered at the professional level. The Senior Project Experience activities encompass research, development and application. These involve analysis or synthesis in a particular concentration in the major or combined aspects of several minor areas. This project is undertaken in a student's Senior Year. The program is administered by the Director of Internship/Senior Project and is overseen by faculty members who participate as project advisors. The semester hour value of a Senior Project is 3 or 6 semester hours and will need to be approved by a faculty advisor.

E-BUSINESS & MANAGEMENT (EBUS)

EBUS 050
EBUS 050 Introduction to the World of Business (3 semester hours)
Prerequisites: None
Corequisites: None
Description: A survey course examining major aspects of business in the U.S. compared to business in Europe and Asiz. How do companies form and operate? How do industries form and die? How do economies get built, grow and/or struggle? What is the link between individual companies, industries and economies? Limited to College in High School students. *Credit will not count towards graduation requirements.*

EBUS 110 Introduction to e-Business Management (3 semester hours)
Prerequisites: None
Corequisites: None
Description: This introductory course begins with a survey of applications and delivery systems utilizing e-business and management expertise. We will explore the career options available to the technology manager and the businesses that utlize the skills and competencies of a modern e-manager. Students will

be required to interview a local manager or business executive to gain insights into the field from a practitioner.

EBUS 210 Business Technologies and Applications (3 semester hours)
Prerequisites: None
Corequisites: None
Description: The student will develop an understanding of the various business technologies utilized to manage business, people, and information. Models of successful e-Business related to human resources management, knowledge management, and emerging new business opportunities will be explored. The benefits, opportunities, and competitive advantages of implementing an e-business solution as well as identifying key deployment and support will be identified.

EBUS 220 Management Principles (3 semester hours)
Prerequisites: None
Corequisites: None
Description: The student is provided an analysis and synthesis of the traditional functions of management, while looking toward changes brought about by information technology solutions. Topics such as planning, organizing, leading and controlling the environment, as well as team approaches, collaborative program management, ethics and diversity will be examined. e-Management with telecommuting options will also be explored.

EBUS 230 Marketing Principles (3 semester hours)
Prerequisites: None
Corequisites: None
Description: An introduction to the basic function and strategies used in modern marketing campaigns from the concept to the audience and the product design. Topics include analyzing the market, brand awareness, communications media, and e-commerce methods. Basic marketing techniques and fundamentals of best practices are covered.

EBUS 265 Internship (3 semester hours)
Prerequisites: Permission of Internship Coordinator and completed paperwork
Corequisites: None
Description: Internships engage students in putting theory to practice in the classroom of work. This form of experiential learning propels and applies education into the world of action where ideas are tested and career-ready skills developed. These immediate, concrete experiences in the workplace become the basis for "learning by doing" as students discover new opportunities to develop new skills and competencies. University students at the internship site acquire new knowledge and skills by successfully meeting interpersonal and intellectual challenges. A successful internship requires more than just 'going to work;' internships are part of a learning and reflection cycle. Throughout each internship, students work with individual faculty supervisors who together observe and reflect on what was accomplished. Students integrate these reflections into a comprehensive internship portfolio which both showcases their specific achievements in the workplace and analyzes the quality of their learning throughout the internship. Students may engage in an internship during their sophomore, junior, and senior project course or through the use of their elective credit. The prefix numbering of internships reflects the level of engagement and complexity of the placement.

EBUS 310 e-Commerce & e-Government (3 semester hours)
Prerequisites: EBUS 210 and 45 semester hours completed
Corequisites: None

Description: In this course the underlying and emerging technologies that support and sustain e-commerce are studied. These include basic e-government principles and internet e-commerce site development, as well as a primer on human behavior. In this course the student explores developing economic trends and emerging technologies to better understand the technical, business, governmental, and social processes that are shaping the electronic marketplace. Local leaders in the e-commerce business are invited to discuss and develop local and global perspectives.

EBUS 320 Managerial Accounting (3 semester hours)
Prerequisites: EBUS 220 and 45 credit hours completed
Corequisites: None
Description: This course explores the basic accounting competencies needed in managing a business or product line. The course emphasizes applications of accounting strategies, decision making, and evaluation. A conceptual framework will be established to enable managers to be profitable and to read and understand ledgers. A project accounting system will also be produced.

EBUS 330 Sales and Sales Management (3 semester hours)
Prerequisites: EBUS 210 and 45 credit hours completed
Corequisites: None
Description: This course examines sales management strategies, approaches and best practices in creating an adaptive sales force. Areas explored include the human dimension of hiring and firing employees, how look proactively at how to market and sell in a global and technological environment, and identify where people skills and competencies are vitally important. The productivity and assessment of the sales force, through motivation and training, will also be explored. Current events, market trends and areas, as well as a regional association for the various sales trades, are covered.

EBUS 398 Junior Project (3 semester hours)
Prerequisites: Junior Status
Corequisites: None
Description: The junior project challenges the student to identify, investigate and analyze a particular topic and to examine how science and/or technology interact with societal structures and value systems. The problem-solving community-based research project is an ideal junior project. An objective is to enable graduates to connect and understand their role in the larger community of which the graduate will be a part. This project is usually undertaken in a student's junior year under the close mentorship of a faculty member and the community host. The credit value for a Junior Project will need to be approved by a faculty advisor.

EBUS 420 International Management (3 semester hours)
Prerequisites: EBUS 310 or permission of the instructor
Corequisites: None
Description: This course examines current international business practices and infuses how electronic communications and e-commerce can help further the introduction of business products into global markets. The power of globalization is explored and the problems associated with trade across borders. The use of specific case studies centered around countries/regions (Japan, China, India, and the Middle East) and industries (Starbucks, Wal-Mart, and Enron) will be used as examples.

EBUS 430 Business Law (4 semester hours)
Prerequisites: EBUS 110, Junior Status, or permission of the instructor
Corequisites: None
Description: This course represents a fundamental study of current, acceptable practices in business law. The course explores the major types of law that pertain to business activities and start-up companies,

including the legal environments in which business arise and the future direction desired. The course begins with a reading of the Constitution and proceeds to more specific details. The student will learn about the different types of laws, with a focus on cyber law as it applies today. Through readings, class discussions, seminars and case study analysis, the foundation of American business law is derived.

EBUS 440 Leadership in a Changing Environment (3 semester hours)
Prerequisites: 60 credit hours completed
Corequisites: None
Description: Throughout a person's career and personal life, changes occur. Those who can advantageously deal with change and who utilize change for the advancement of ideas and the organization will be able to lead an organization successfully and succeed. This course explores and examines the basic framework for change management and leadership styles, and focuses on ethical leadership in times of change and crisis through use of case studies and personal change management.

EBUS 498 Senior Project (3 semester hours)
Prerequisites: Senior Status
Corequisites: None
Description: The Senior Project must be in the student's major area of study. This project should demonstrate application of the skills, methods, and knowledge of the discipline to solving a problem representative of the type to be encountered at the professional level. The Senior Project/Internship Experience activities encompass research, development and application, involve analysis or synthesis, and emphasize a particular concentration in the major or combined aspects of several minor areas. This project is undertaken in a student's Senior Year. The program is administered by the Director of Internship/Senior Project and is overseen by faculty members who participate as project advisors. The Senior Project will need to be approved by a faculty advisor.

ENGLISH (ENGL)

ENGL 005 College Composition I Recitation (0 semester hours)
Prerequisite: Placement through our assessment program
Corequisite: ENGL 105
Description: This English course is offered as a companion to ENGL 105 for the student who enters the University without college-level composition skills as an opportunity to develop the foundations necessary to succeed in subsequent University composition courses.

ENGL 100 Composition & Literature (3 semester hours)
Prerequisites: None
Corequisites: None
Description: This course is designed to develop students' abilities to write as they interpret works of literature. Students will carefully read selections from accomplished authors and will develop precision in their own writing. Students will be challenged to read literature so as to cogently explain how the use of literary techniques develops meaning and creates style and theme. Students will examine literature from various cultures, genres and periods of time. In addition, this course will develop expository, argumentative and research-based writing skills. *Limited to College in High School students.*

ENGL 101 Composition Fundamentals (3 semester hours)
Prerequisites: None
Corequisites: None
Description: This course is designed to develop composition skills and usage of different genre. Students will be challenged to reflect, create drafts, revise, and submit a variety of writing forms. *Limited to College in High School students.*

ENGL 105 College Composition I (3 semester hours)
Prerequisites: Placement through our assessment program
Corequisites: None
Description: This is an undergraduate freshmen composition course. The course includes an introduction to college-level writing strategies with emphasis on critical reading and thinking skills, along with six major writing assignments with reading from a variety of sources. The course requires two papers with a draft, comment, revision, and draft cycle.

ENGL 200 Advanced Composition & Technical Writing (3 semester hours)
Prerequisites: 30 credit hours completed including GEND 101, ENGL 105 and COMM 110
Corequisites: None
Description: The course is divided into two sections: the first section will be devoted primarily to learning essential skills as a technical writer, and the second section will be devoted primarily to applying these skills in teams to produce a term project affiliated with a community service learning project or to design one of student's project choices. The student will keep a log of activities throughout the semester to produce a self-evaluation at semester's end. Numerous homework exercises will be completed to develop skills and knowledge of the complexities of technical communication and composition, including the practices of reading and editing, designing documents, and scrutinizing the ethos of documents. This course is computer-intensive. A web discussion forum (or comparable site) is used, word processing programs, Web page composers, file transfer protocol, and PowerPoint. Outside of class, the student will need to access many of these programs to complete classwork, either by going to a lab after class hours or by working from a networked computer elsewhere.

GENERAL EDUCATION (GEND)

GEND 001 The Creative Mind Recitation (0 semester hours)
Prerequisite: Placement through our assessment program.
Corequisite: GEND 101
Description: This reading course is offered as a companion to GEND 101 for students who enter the University without college-level reading skills as an opportunity to develop the foundations necessary to succeed in subsequent University courses.

GEND 050 Humans as Learners (3 semester hours)
Prerequisite: None
Corequisite: None
Description: High level review of psychological theories on learning. Practice study skills, time management techniques, team work, test taking techniques, and prioritization of activities. Learn what it means to synthesize experiences and develop conclusion and informed points-of-view. Limited to College in High School students. *Credit will not count towards graduation requirements.*

GEND 101 The Creative Mind (6 semester hours)
Introduction to Psychology, Sociology, and English Literature
Prerequisite: None
Corequisite: None
Description: In the psychology part, the course examines the major principles, research and applications of modern psychology. Topics covered will include the history and origins of psychology, motivation, emotion, learning, perception, intelligence, personality, and social behavior. In the research method section, the course guides students to understand the basic processes of scientific research and thought. Topics covered include formulating research ideas and questions; understanding literature review; establishing hypotheses; defining and applying concepts; employing techniques for data collection, measurement, and statistical methods; and writing a scholarly research paper. The class will undertake a variety of drafts and revisions of various composition genres.

GEND 111 The Scientific Mind (6 semester hours)
Natural Sciences, Philosophy, and Computer Science
Prerequisite: None
Corequisite: None
Description: The course examines the centrality of science and technology in providing answers to complex questions in the realm of life and nature. What measures, if any, can be taken to prevent global warming? How can species be conserved? How can global geological catastrophes be predicted? Science literacy and the connection of society to science are of paramount importance to the entire citizenry. In this course the foundations are laid for learning by contextualizing science and technology as human endeavors with social dimension, emphasizing quantitative reasoning. This six-credit course sets the basic foundation through content, reason, consequences and advancement of the scientific enterprise. In order to meet these objectives we will take two different approaches. The first approach is examine the role of science and technology throughout recorded history. The second approach is through reading, research, and investigating contemporary issues.

GEND 150 The Learned Mind (6 semester hours)
Introduction to Philosophy & English Literature
Prerequisite: ENGL 105 & COMM 110
Corequisite: None
Description: This course introduces students to the basic readings and study of philosophy. This learning opportunity includes reading and reflecting on the great philosophies of modern history, followed by class discussion. Through a study of the people and their writings (literature), a student learns to appreciate the power of the written word. Classic works are read which try to grapple with the souls and minds of citizens throughout recorded history. Through literature we try to understand how people deal with expression of thought, organization, and logic in trying to answer capacious, complex, and unresolved questions. Students will be exposed to a large number of writings and learn to carefully critique both the approach and manner of writing. Beyond the specific course objectives, philosophy and literature in order to understand the power of ideas in human history is combined and integrated.

GEND 201 The Civic Mind (6 semester hours)
U.S. or World History, U.S. or World Politics, and Macroeconomics
Prerequisite: GEND 101 & GEND 110
Corequisite: None
Description: This course introduces students to persons and events from American history that have contributed to the formation of American culture and way of life, and the political processes and

institution of American government. In the history section, the course approaches the following questions: How did Americans face the challenges of the British colonizers and then carry out resistance, revolution and reform? What was the origin of slavery and the contention between the north and the south? How did the Civil War and Reconstruction help the establishment of democratic government in America? What were the origins of industrial society and progressivism in this country? How did the United States approach WWI and WWII? How did the United States live through the Age of Containment, the Great Depression and later power and politics during the 20th century? The American Politics section the course will shift attention toward the institutions of American government, politics and civil society. The following themes will be exposed to scrutiny and close examination: the tenets of American Constitution; federalism; the role of public opinion and interest groups in the American politics; the role of political parties in democratic process in this nation; the various institutions of government including Congress, the presidency, the bureaucracy and the judiciary system; and finally the questions of civil liberties, rights and public policy in this nation. The combined themes in this course help the student to understand the evolution of American history and how it shapes American politics, political culture and institutions of government.

GEND 251 The Political Mind (6 semester hours)
International Political Systems & International Politics and Macroeconomics
Prerequisite: GEND 101 & GEND 150
Corequisite: None
Description: This course combines the three themes of international political systems, international relations and macroeconomics in order to help students understand international politics and economics. In the arena of international political systems, students are acquainted with ideas upon which authoritarian, totalitarian, democratic and socialist systems are built. These systems are compared with each other in order to understand the merits, values and shortcomings of each. In the international politics section of the course, students will be introduced to various political trends and views, such as Realism and Liberalism, and themes that impact international relations, foreign policy and economic relations among the nations. The following themes will be explored in this section: great powers rivalry and relations, state and non-state actors in the international arena, humanitarian challenges in international relations, globalization and global governance, armed conflicts and military power, and finally the road to peace in Realism and Liberalism. In the macroeconomics section of the course, students are acquainted with concepts in the realm of international economic relations that impact globalization, trade, currency and international economic order. Themes such as the governance of international monetary system, international trade, multinational corporations, trade and development, North-South and East-West economic relations, and trends in globalization for free and fair trade will be discussed. This learning community course encourages students to acquire an understanding of globalization of politics and economy, and the forces and trends that shape their international environment.

GEND 300 The Cultured Mind (6 semester hours)
World Cultures & Art
Prerequisite: GEND 101 & 110
Corequisite: None
Description: This course integrates the study of culture and art and introduces the student to a global and comparative study of culture as a key to understanding human behavior in different societies. The formation and application of art and culture is studied, in relation to the impact of religious belief and tradition in those different societies. The course explores similarities and differences in the world's major cultures and attempts to pinpoint the impacts on social institutions and human behavior. Cross-cultural perspectives are examined to discuss the structure, cycle, and functioning of family and kinship systems in

ethnography, including the family in western contemporary cultures. Key global issues in the contemporary world will be explored from various perspectives, with a focus on social relations, cultural practices and political economic links among countries.

GEND 351 Organizational Mind (6 semester hours)
Organizational Theory, World Cultures & Microeconomics
Prerequisite: GEND 101 and COMM 110
Corequisite: None
Description: The course will introduce students to organization, leadership and economic decision-making in firms and businesses. The goal of this course is to encourage students to understand the significance of organization and leadership in professional and economic activities and entrepreneurship. Organizations studied in this course are not rigid mechanical entities, but institutions that are flexible and part of social systems within which people seek to achieve goals. The changeable nature of organizations is confirmed and affected by the interests, commitments and motives of individuals.

The course explores the role of leadership and the processes of influence, change and transformation by which leaders motivate organizations to achieve defined objectives. Leaders play significant roles in changing the shape of modern organizations to achieve objectives that have organizational and structural effects, thereby reaching high levels of productivity and efficiency.

In the microeconomic section of the course, the shift is toward how individuals and firms make decisions within the context of market. The role and impact of organizations and leadership will be explored in relation to a firm's economic decisions while attempting to be successful and productive in the marketplace.

GEND 400 The Entrepreneurial Mind (3 semester hours)
Business and Social Entrepreneurship
Prerequisites: 60 credit hours completed
Corequisites: None
Description: The student will study and compare key features of entrepreneurship from two important vantage points: business entrepreneurs and social entrepreneurship. The drive and creativity of those individuals who question the status quo is examined of those to explore new opportunities and who persevere through hardship to remake this world. The student will read stories, complete case studies, and speak with community entrepreneurs. Some of our examples will be taken from business and others from the "ordinary" people who do remarkable work. An objective of this course will be to help the student identify a specific entrepreneurial spirit and how to best set goals to utilize the skills the student possesses.

GEND 425 Globalization (3 credits)
Trade & Finance
Prerequisite: 60 semester hours completed
Corequisite: None
Description: Globalization means the process of increasing interconnectedness among various societies. In a globalized world, political, economic, social and cultural events become increasingly interconnected. Globalization is at the same time identified with modernization, economic growth, economic interdependence and establishment of global culture and village. Under globalization, time and space seem to be fading, differences between people are diminishing and a cosmopolitan culture is developing. But there is also a discussion on the unevenness of globalization effect, its economic benefits and also risk culture. This course is designed to explore the nature and significance of this interconnectedness and also investigate the benefits and harms of globalization. Does globalization benefit or harm economic

development across the world? Is it the last stage of capitalist development? Does globalization strengthen or weaken non-state actors in the international arena? Does globalization encourage democratic norms and promote international security? How can globalization and its processes be improved to promote development and establish more equitable international relations? Is there a chance for globalization to help developing nations in eradicating poverty, diseases and malnutrition? These are a few of the questions that this course is designed to address.

GEND 450 The Healthy Mind & Body (3 semester hours)
Personal and Environmental Health
Prerequisites: 60 credit hours completed
Corequisites: None
Description: This course will provide the foundations for a study into health issues facing us today and has multiple integrated components. As a member of a collaborative participatory learning community, the student will study, read and discuss in seminar fashion a variety of topics and subjects related to personal and environmental health. The student will also develop and conduct an investigation into a personal health issue. The class will synthesize the results of the investigation into a final public poster presentation. This component of the learning community stresses both oral and written communications on issues of science and public policy.

GEND 465 Professional Ethics (3 semester hours)
Moral, Ethical and Professional Decision-making
Prerequisites: 60 semester hours completed
Corequisites: None
Description: This course covers contemporary concepts and fundamental issues in moral, ethical, and professional decision making. Students are introduced to issues in the realm of decision making in public and professional settings that impact the well-being of all who are directly and indirectly affected by such actions and decisions. Through case analysis, the course will organize study around topics such as professional client relations, confidentiality, professional dissent, and professional virtue in a professional setting. Students are challenged to develop respect for the principles that recognize freedom of conscience: privacy and interest of others; appreciate decisions and actions that take into account faith, values and prerogatives of others; understand the ramification of fair and unfair decisions and actions in distribution of rewards and burdens among those who are affected by them; and, enhance a vision of a society and group so that the members advance the common good, respect the interest of the others, and see that a person's own good is inextricably tied to the good of the whole. The course will also concentrate on the theme of corporate social responsibility. Students are encouraged to understand how corporations can be socially responsible by developing a commitment to behave ethically and contributing to the welfare of their workforce and the quality of life of communities and societies at large. The study will probe how companies craft a balance between increasing profit and improving the welfare of society, promoting sustainable economic development, and committing themselves to environmental issues and fair trade.

GEOGRAPHY AND GEOSPATIAL IMAGING (GGSI)

GGSI 130 Geography of the World (4 semester hours)
Prerequisites: None
Corequisites: None
Description: This introductory course has three broad goals and three specific ways of looking at the geography of the world. Through a weekly laboratory and recitation period, the student will learn the

vocabulary needed to understand the science, specific sites, regions, cities and environments of the world. Students will successfully complete a world geography "test of place" recitation section at any time before the end of the semester. A broad look at the various geographies including cultural, economic and political borders will occur. The final goal is an introduction into the use of modern digital technologies and future trends in the field.

GGSI 140 Introduction to GIS/GSI (3 semester hours)
Prerequisites: None
Corequisites: None
Description: This course includes the principles, techniques and practices of geographic and geospatial imaging and how these techniques lead to the understanding of how geography is represented and space images constructed. Since we can observe so little of the earth directly, there are a host of methods for learning about the rarely accessible regions of the globe and placing these regions amongst the whole on which science relies. One way to observe the space (land, sea and air) is through three dimensional diagrams with horizontal and vertical axis. From spatial and geographic images models can be built, representations which can be overlaid by both time and imperial or experimental data. In this course the student explores the basic foundations of geographic and geospatial imaging. This is an introduction course with both theory and laboratory practice.

GGSI 210 Cartography (3 semester hours)
Prerequisites: GGSI 130 or permission of the instructor
Corequisites: None
Description: This course is designed to study the fundamental processes of modern cartography. Topics explored are scale, function, representation, and map projections and connect these topics with GIS and geographic remote satellite sensing applications. The student will use digital cartographic information to create models and strategies using U.S. Department of Agriculture and Commerce information, as well as other databases.

GGSI 220 Applied Geospatial Technology (4 semester hours)
Prerequisites: GGSI 140 or permission of the instructor
Corequisites: None
Description: In this course theory and practice will be bridged to build competency in using ArcInfo, ArcView and ArcEditor through ArcGIS. The AcrGIS system is a scalable system of software for geographic data to build geographic literacy. Students will learn the basics of editing, analysis and modeling along with cutting edge data models and management. The system is designed for multiple uses from small niche specialties in a community to global modeling of geographic data. The student will learn how data management analysis and conversion tools are applied to a variety of different settings. With these very basic tools the student will perform data conversion, generalization, aggregation overlaps, buffer creations and statistical calculations. This course meets in the computer laboratory for all class sessions.

GGSI 230 Geography, Culture, & Conservation (3 semester hours)
Prerequisites: GGSI 140 or permission of the instructor
Corequisites: None
Description: The student will study, through case study analysis, the cultural regions of the world through the use of GIS mapping. The course connects natural resource use to culture and examines how culture has played an important role in land use and conservation. This course tries to integrate and establish connections among land, people and culture through extensive use of case studies, role-playing and use of simulations. A broad range of sub-disciplines within geography is provided and shows that cultural and conservational geography are best considered in an integrated manner with the classic views of geography and the modern geospatial imaging technologies.

GGSI 240 GIS/GSI Policy (4 semester hours)
Prerequisites: GGSI 140 and GGSI 220
Corequisites: None
Description: Through the use of geographic and geospatial information system examples, the current policy on managing data for public administration and public policy is explored. The student will utilize knowledge and skills in the field of GIS/GSI to come to an understanding of power and limits of this technology as it is used to set public policy. In the days following September 11, 2001, the urgency to put into place ethical yet aggressive policies for GIS information and its accessibility has dramatically increased. As terrorism continues to dominate foreign policy on many levels, so too are the resources of GIS/GSI put to bear to gain information for national defense purposes. In this course the knowledge of GIS/GSI systems is used to explore emerging public policy, professional standards, ethics and future directions of geographic data.

GGSI 265 Internship (3 semester hours)
Prerequisites: Permission of Internship Coordinator and completed paperwork
Corequisites: None
Description: Internships engage students in putting theory to practice in the classroom of work. This form of experiential learning propels and applies education into the world of action where ideas are tested and career-ready skills developed. These immediate, concrete experiences in the workplace become the basis for "learning by doing" as students discover new opportunities to develop new skills and competencies. University students at the internship site acquire new knowledge and skills by successfully meeting interpersonal and intellectual challenges. A successful internship requires more than just 'going to work;' internships are part of a learning and reflection cycle. Throughout each internship, students work with individual faculty supervisors who together observe and reflect on what was accomplished. Students integrate these reflections into a comprehensive internship portfolio which both showcases their specific achievements in the workplace and analyzes the quality of their learning throughout the internship. Students may engage in an internship during their sophomore, junior, and senior project course or through the use of their elective credit.

GGSI 340 Advanced Spatial Analysis (4 semester hours)
Prerequisites: GGSI 140 and GGSI 210 or permission of the instructor
Corequisites: None
Description: This course is an advanced level applied GIS course in which students will learn to use GIS technology (ArcGIS) to complete a large and complex GIS project in a team environment. Significant focus will be given to working with spatial data, including creating, editing, analysis techniques, labeling and filtering, developing data projections, trouble shooting data conversion and ensuring data quality. Cartographic layer management and viewing data are also addressed. Students will also focus on applied cartography, metadata management, and digital and hard copy cartographic output. Students will follow a standard project management methodology throughout the class and present project results in both written and verbal form.

GGSI 390 Directed Study (variable credit)
Prerequisites: 60 credit hours completed
Corequisites: None
Description: Students are responsible for designing and selecting a topic germane to their program of study in which they will perform in-depth reading, information research, and synthesis under the tutorage of a faculty member. The individual emphasis areas must be selected and approved by faculty mentor. The student and faculty will agree on a set of reading to be accomplished over the course of the semester. Student-faculty meetings will occur every other week for a minimum of one hour. The directed study

culminates in a synthesis and integration of the various readings into a 20 page integrative study. The paper must be submitted in draft form, reviewed by the faculty member with feedback, and revised. The credit value for a Directed Study can range from 1-4 semester hours and will need to be approved by a faculty advisor.

GGSI 398 Junior Project (3 semester hours)
Prerequisites: Junior Status
Corequisites: None
Description: The junior project challenges students to identify, investigate and analyze a particular topic and to examine how science and/or technology interact with societal structures and value systems. The problem-solving community-based research project is an ideal junior project. An objective is to enable graduates to connect and understand their role in the larger community of which they are a part. This project is usually undertaken in a student's junior year under the close mentorship of a faculty member and the community host. The Junior Project must be approved by a faculty advisor.

GGSI 460 Satellite Remote Sensing (4 semester hours)
Prerequisites: GGSI 140, GGSI 290 and 60 credit hours completed
Corequisites: None
Description: Remote sensing through the use of satellites is the science of acquiring and analyzing information about objects or phenomena from a distance. Humans throughout recorded history have sought to develop the technological means to increase our ability to see and record the environments in which we live. Remote sensing allows us to see what our eyes cannot. Remote sensing is recognized as a valuable tool for analyzing, viewing, characterizing and making decisions in real time. Today, we define satellite-borne sensors to observe, measure and record the electromagnetic radiation reflected or emitted by the earth and its environment for subsequent analysis and extraction of the information. Application for satellite remote sensing is predominant in military surveillance and uses a variety of landform (weather) and tracking systems.

GGSI 498 Senior Project (Geographic & Geospatial Imaging) (3 semester hours)
Prerequisites: Senior Status
Corequisites: None
Description: The Senior Project must be in the student's major area of study. This project should demonstrate application of the skills, methods, and knowledge of the discipline to solving a problem representative of the type to be encountered at the professional level. The Senior Project/Internship Experience activities encompass research, development and application, involve analysis or synthesis, and , emphasize a particular concentration in the major or combine aspects of several minor areas. This project is undertaken in a student's Senior Year. The program is administered by the Director of Internship; Senior Project and is overseen by faculty members who participate as project advisors. The Senior Project will need to be approved by a faculty advisor.

INTEGRATIVE SCIENCES (INSC)

INSC 105 Field Studies in Natural Science (3 semester hours)
Prerequisites: None
Corequisites: None
Description: In this course the student will become familiar with the natural world through discussion, multimedia and field experience. The exploration of the natural world will take the class from shores of the Susquehanna River to stellar nurseries where new stars and planets are being born. The journey

together will build the foundation for deeper studies in science and personal ownership of our own discoveries.

INSC 115 The Chemistry of Life (3 semester hours)
Prerequisites: None
Corequisites: None
Description: What's Organic about Organic Chemistry? This is one of the many discussions that will occur in the O.C. (Organic Connection). Why is organic chemistry important for a future nurse, lawyer, teacher, scientist or informed citizen? To answer this question, organic chemistry in the context of everyday life will be presented. Teamwork and outdoor expeditions will keep the student moving and thinking while studying the chemistry of life.

INSC 120 The Scientific Method and Public Opinion (4 semester hours)
Prerequisites: None
Corequisites: None
Description: Public opinion is often dictated by preconceived notions, tradition and superstition. This class will use the power of the scientific method, experimental design and statistics to explore some of the things accepted by the public as givens: lunar cycle effects; life, death and holidays; many superstitions and old wives' tales. Data mining techniques will be employed followed by a discussion and application of the appropriate quantitative methods to explore the phenomena under scrutiny. This class will have field trips, one overnight. Relations with local hospitals and police officials will be developed for access to data.

INSC 140 Integrative Science I (3 semester hours)
Prerequisites: None
Corequisites: None
Description: Many things live side-by-side with humans, often remaining hidden from our day-to-day lives yet thriving among homes and city streets. Humanity's reach has been extended through ceaseless questioning and technology to observe the very large and the very small. Telescopes, microscopes, and swarming satellites overhead all assist in understanding both the world around us and our place within it. Students will be introduced to the natural world through science and science's tools of observation, and will thereby learn to ask the questions which expand their minds and ignite their innate sense of wonder and curiosity. The natural world is where we live and this class will teach us about our home.

INSC 160 Introduction to Forensic Computing (3 semester hours)
Prequisites: None
Corequisites: None
Description: Computers are becoming increasingly critical to forensic investigations. This course will introduce students to the basics of computer-stored data as well as methods of hiding, erasing and recovering data from storage media. It will also explore the relationship between computer technology and crime scene investigation.

INSC 180 Integrative Science II (3 semester hours)
Prerequisites: INSC 140 or permission of the instructor
Corequisites: None
Description: This course represents the second in the integrative studies sequence. In this course, the student continues the use of active, collaborative approaches to help connect mechanisms, ideas, patterns, and numeracy measures amongst fields which are often considered to be distinct and separate. The nature of such vital elements as molecules of life, the earth and cosmos, diversity and biodiversity, evolution and strategies for successful ecosystems will be explored.

INSC 265 Internship (3 semester hours)
Prerequisites: Permission of Internship Coordinator and completed paperwork
Corequisites: None
Description: Internships engage students in putting theory to practice in the classroom of work. This form of experiential learning propels and applies education into the world of action where ideas are tested and career-ready skills developed. These immediate, concrete experiences in the workplace become the basis for "learning by doing" as students discover new opportunities to develop new skills and competencies. University students at the internship site acquire new knowledge and skills by successfully meeting interpersonal and intellectual challenges. A successful internship requires more than just 'going to work;' internships are part of a learning and reflection cycle. Throughout each internship, students work with individual faculty supervisors who together observe and reflect on what was accomplished. Students integrate these reflections into a comprehensive internship portfolio which both showcases their specific achievements in the workplace and analyzes the quality of their learning throughout the internship. Students may engage in an internship during their sophomore, junior, and senior project course or through the use of their elective credit.

INSC 270 Crime Scene Investigation (4 semester hours)
Prerequisites: None
Corequisites: None
Description: This is a basic fundamental course in forensic death investigations. The areas of specialized focus will include the causes, manner, physical circumstances, and mechanisms of both natural and unnatural deaths. Death scenes are examined and investigations reviewed, with evidence pertaining to how people die. In addition, the course looks at the various legal considerations and methods germane to concluding equivocal death determinations.

INSC 320 The Study of Disease (3 semester hours)
Prerequisites: BIOL 280, 45 credit hours completed, or permission of the instructor
Corequisites: None
Description: The human body is studied in health and disease with a focus on the contemporary causes of human pathology. Information on metabolic and infectious disorders that effect major body systems is explained. The study surveys system organ structure and metabolic/genetic aspects of disease, from simple to complex.

INSC 335 Field Studies in Ecology (3 semester hours)
Prerequisites: BIOL 280, 45 credit hours completed, or permission of the instructor
Corequisites: None
Description: This course introduces the student to a broad range of subject areas in different subject matter associated with the Chesapeake Bay and its watershed. During the week-long field course, the ecologically rich area is visited and studied. Historic and economically important sites are also visited. Research methods will be introduced to the student and the participation in different methodologies will lead them to a better understanding of the environment and the ways in which it is understood.

INSC 340 Community Health & Research (4 semester hours)
Prerequisites: 45 credit hours completed
Corequisites: None
Description: This course provides the foundations for a study into the new relevant community health issues facing area residents. The course has three important and integrated components: the reading and discussion in seminar fashion on a variety of topics and subjects related to community health, environmental health and research practices; the development, investigation and conduct of a community-based research project mentored by the faculty or a business/agency partner; and, the synthesis of the

results and implications of the research into a final public and poster presentation. This course stresses both oral and written communications on issues of science and public policy (content, process and competency).

INSC 350 Animal Behavior (4 semester hours)
Prerequisites: BIOL 280, INSC 180, or permission of the instructor
Corequisites: None
Description: This course is designed to expose students to a broad range of topics within the area of animal behavior from evolutionary and ecological perspectives. Natural selection and adaptation as functions of behavioral ecological and socio-biological processes are the focus. Ethological questions will also be addressed.

INSC 360 Forensic Case Study (4 semester hours)
Prerequisites: BIOL 125 and INSC 270
Corequisites: None
Description: This course is about the field work and actual applications of collected evidence in the sometimes messy real world. During the course of the semester the student will look intensely at several cases, looking beyond the verdicts or newspaper reports to the actual workings of forensic science's involvement in prosecution of criminal cases.

INSC 361 Criminal Profiling (3 semester hours)
Prerequisites: BIOL 125 and INSC 270
Corequisites: None
Description: This course examines the process of profiling during the investigation of a crime. The process of psychological profiling was first institutionally used by the Federal Bureau of Investigation but there are now multiple models for criminal profiling. This course examines the various models and how they relate both to expert witness standards and scientific methodologies. The course examines the differences of these models and their application in case studies.

INSC 362 Medico-Legal Death Investigation (3 semester hours)
Prerequisites: BIOL 125, 214 and 215
Corequisites: None
Description: This course is a study of the process known as medicolegal death investigation. The course introduces the student to the legal systems surrounding the investigation of the cause and manner of death. The role of forensic pathology and the application of pathology to law are studied in relation to crime scene investigation. Natural, accidental, homicide and suicide deaths are explored in the perspective of the forensic pathologies.

INSC 363 Forensic Population Studies (3 semester hours)
Prerequisites: BIOL 125, INSC 270, and MATH 280
Corequisites: None
Description: This course is concerned with working with large data sets to discern large scale crime patterns. Students will be introduced to crime databases and follow criminal activity patterns correlated to such variables as physical area, time or economics. This course will involve a certain degree of research design and statistical analysis. This is a group project-driven course.

INSC 364 Fraud (3 semester hours)
Prerequisites: BIOL 125 and INSC 270
Corequisites: None

Description: This course examines all aspects of fraud investigation including medical and corporate fraud. The students will be exposed to case studies and have various speakers within the field of fraud investigation. Practical knowledge of investigation techniques and knowledge of the common traits existing in most fraud cases will be examined.

INSC 390 Directed Study (variable credit)
Prerequisites: 45 credit hours completed
Corequisites: None
Description: Students are responsible for designing and selecting a topic germane to their program of study in which they will perform in depth reading, information research, and synthesis under the tutorage of a faculty member. The individual emphasis areas must be selected and approved by faculty mentor. The student and faculty will agree on a set of readings to be accomplished over the course of the semester. Student-faculty meetings will occur every other week for a minimum of one hour. The directed study culminates in a synthesis and integration of the various readings into a 20 page integrative study. The paper must be submitted in draft form, reviewed by the faculty member with feedback, and revised. The credit value for a Directed Study can range from 1-4 credits and will need to be approved by a faculty advisor.

INSC 398 Junior Project (3 semester hours)
Prerequisites: Junior Status
Corequisites: None
Description: The junior project challenges students to identify, investigate and analyze a particular topic and to examine how science and/or technology interact with societal structures and value systems. The problem-solving community-based research project is an ideal junior project. An objective is to enable graduates to connect and understand their role in the larger community of which they are a part. This project is usually undertaken in a student's junior year under the close mentorship of a faculty member and the community host. The Junior Project will need to be approved by a faculty advisor.

INSC 410 Epidemiology (3 semester hours)
Prerequisites: Junior Status
Corequisites: None
Description: This course is a study of how diseases are detected, identified, and distributed within populations. By definition, "epidemiology is the study of the distribution and determination of health related states or events in specific populations and the application of this study to the control of health problems." Through a study of epidemiology the student will learn the medical and scientific investigative skills needed to critically think, strategize, and predict new epidemics and control current ones. Mathematics will be used to model disease progression.

INSC 498 Senior Project (3 semester hours)
Prerequisites: Senior Status
Corequisites: None
Description: The Senior Project must be in the student's major area of study. This project should demonstrate application of the skills, methods, and knowledge of the discipline to solving a problem representative of the type to be encountered at the professional level. The Senior Project/Internship Experience activities encompass research, development and application, involve analysis or synthesis, and emphasize a particular concentration in the major or combine aspects of several sub areas. This project is undertaken in a student's Senior Year. The program is administered by the Director of Internship/Senior Project and is overseen by faculty members who participate as project advisors. The Senior Project will need to be approved by a faculty advisor.

MATHEMATICS (MATH)

MATH 081 Prealgebra (3 semester hours)
Prerequisite: Placement through the assessment program
Corequisites: None
Description: This course is designed for students who need additional preparation in algebra or who have been away from mathematics for several years. Subject areas to be covered include arithmetic of whole numbers, fraction and decimals, ratios and percents, and basic algebraic concepts. Math study skills are an integral part of this course. Prepares the student for College Algebra.
Credit will not count towards graduation requirements.

MATH 120 College Algebra (3 semester hours)
Prequisites: Two years of high school mathematics in algebra and trigonometry
Corequisistes: None
Description: This course is intended for the student with an elementary knowledge of algebra. Topics include properties of real numbers, problem-solving using equations and inequalities, algebraic functions, graphing, systems of equations and inequalities, polynomial functions and graphs, exponents and radicals, the binomial theorem, zeros of polynomials, inverse functions, and applications and graphs. Other topics selected from sequences, series, and complex numbers may be covered including the study of functions equations and graphs with emphasis on linear, quadratic and exponential functions. A graphing calculator is required for this course.

MATH 210 Discrete Mathematics I (3 semester hours)
Prerequisites: Algebra II or equivalent
Corequisites: CISC 160
Description: The purpose of this course is to provide students with an understanding of an array of mathematical concepts and methods, which shape the foundation of modern information science, in a form that will be relevant and useful for CISc students. Discrete mathematics plays a fundamental role for computer science which is similar to that played by calculus for physics and engineering. Many concepts in computer science are best understood from a perspective that requires expertise with mathematical tools as well as certain reasoning skills associated with mathematical maturity. The topics covered will draw on current material from several mathematical disciplines: graph theory, mathematical logic, and set theory. This course is taught using an Object Oriented Programming language. This course includes a laboratory component.

MATH 220 Calculus I (3 semester hours)
Prerequisites: MATH 120
Corequisites: None
Description: This course begins with an introduction and techniques to evaluate limits. It then covers continuity, special trigonometric limits, absolute value limits and differentiation of algebraic, trigonometric, and logarithmic functions. The course explores intermediate value theorem, mean value theorem, and extreme value theorem. The other topics for exploration in this course are application and formal definition of derivative average rate of change vs. instantaneous rate of change, velocity, and the introduction of the definite integral and its applications. A graphing calculator is required for this course.

MATH 280 Introductory Statistics (3 semester hours)
Prerequisites: MATH 120
Corequisites: None
Description: This course covers elementary topics from the probability and statistics of both discrete and continuous random variables. Topics include independence and dependence, mean, variance and

expectation, and distributions of random variables. Statistics is applied to hypothesis testing. The purpose of this course is to provide students with a broad, general knowledge and understanding of statistics. The emphasis of this course in on the utility and practical application of statistics rather than on the mathematical derivation of statistical principles.

MATH 260 Calculus II (3 semester hours)
Prerequisite: MATH 220
Description: This course focuses on exploring differential calculus, the derivatives of all functions. An emphasis is placed on the rules of differentiation and their proofs. The course will analyze graphs of functions using concept of derivative and its application. The course also includes an introduction to integral calculus, integration properties, differential equations and notation. We will also study problem solving by using elementary integration techniques, elementary trigonometric integration, and hyperbolic functions. A graphing calculator is required for this course.

MATH 310 Discrete Mathematics II (3 semester hours)
Prerequisites: CISC 160 & CISC 210
Co-requisites: None
Description: This is the second course in a two-course discrete mathematics sequence designed to ensure that the computer student reaches the level of mathematical maturity necessary for the study of Computer and Information Science. The topics covered will drew on current material from study of graphs, trees, relations, algorithms, and models of computation. This course is taught using an Object Oriented Programming language. This course includes a laboratory component

MATH 380 Mathematical Modeling (4 semester hours)
Prerequisites: MATH 220
Corequisites: None
Description: This course involves applications of mathematics to real-world problems drawn from industry, research, laboratories, the physical sciences, engineering, and the scientific literature. Techniques used in this course may include parameter estimation, curve fitting, calculus, elementary probability, optimization, computer programming, and ordinary and partial differential equations. People routinely solve problems using estimation, probability, optimization, and simulation or modeling techniques without considering themselves mathematicians. This course will broaden and strengthen the exposure of interested students to applications of mathematics frequently seen in industry, science, and government. Students planning to pursue careers in industry, science, or government will synthesize mathematical skills appropriate to these fields from topics learned in a variety of more elementary mathematics courses.

PHYSICS (PHYS)

PHYS 210 General Physics I (4 semester hours)
Prerequisites: High School Physics and Algebra II
Corequisites: None
Description: In this course the class will discuss, study and practice solving problems related to the major tenants of physics such as the scientific method, motion, energy, electricity, magnetism, waves, and sounds. The course is designed to provide students with a background in several of the major tenants, ideas and theory which form our understanding of the physical sciences. As part of this course, the student explores the major organizations, subject websites, governmental institutions and private sector industries and educational programs connected with the major topics. The course will include some math applications including principles of Algebra II and some geometry.

PHYS 260 General Physics II: A Life Science Perspective (4 semester hours)
Prerequisites: PHYS 210
Corequisites: None
Description: This course is a descriptive introduction to the basic concepts of physics that have specific application to human health in general and to the medical and paramedical professions in particular. Primary attention will be paid to the physics of various functions of the human body and to the physics of commonly-used instruments and equipment. As part of this course, the student will explore the major organizations, governmental institutions and private sector industries and educational programs connected with the major topics.

PSYCHOLOGY (PSYC)

PSYC 101 Introduction to Psychology (3 semester hours)
Prerequisites: None
Corequisites: None
Description: Introduction to Psychology presents fundamental psychological concepts derived from the application of the scientific method to the study of behavior and mental processes, including cognition and development. Creativity will be a tool employed to uncover basic psychological processes. Students will have the opportunity to study a specific psychological disorder as a means of applying theory to actual behavior.

UNIVERSITY SEMINARS (SEMR)

SEMR 050 Academic Skills (1 semester hour)
Description: This course aims to improve students' success in college by improving their study habits in ten key areas: anxiety, attitude, concentration, information processing, motivation, selecting main ideas, self-testing, study aids, test strategies, and time management. Limited to students on academic probation or financial aid appeal. *Credit earned in this course does not count toward the minimum total of 120 semester hours required for graduation.*

SEMR 100 Cornerstone (1 semester hour)
Prerequisites: None
Corequisites: None
Description: This course focuses on college skills related to goal setting, time management, research skills, and transition issues. The course meets throughout the semester and provides time for students to become comfortable with college-level expectations and adjust to college life, and offers mentorship by a faculty member.

SEMR 200 Steppingstone (1 semester hour)
Description: This course focuses on further developing the depth and range of the students' college skills in areas such as goal setting, time management, communication, and study skills. A portion of the course monitors the students' progress with their ePortfolios. A professional staffing agency and professional mentors assist in the classroom, instructing students on basic rules of professional behavior, career planning and development, resume writing, and interviewing skills. This course engages students in their chosen fields of study by examining ethics and contemporary issues in those fields.

SEMR 300 Keystone (1 semester hour)
Description: This course focuses on the refinement of students' academic and professional identities. It prepares students for the Junior Project by reviewing issues related to becoming a better researcher: writing an appropriate research proposal and getting the correct people involved in the project. Students will learn to use appropriate tools and means of communication when working collaboratively with advisors and corporate partners. Students will learn to prepare presentations of their research to both scientific and non-scientific communities. This course will encourage students' professional involvement in their field of study and civic engagement in their communities. A final portion of the course is intended to monitor the students' progress with their ePortfolios.

SEMR 400 Capstone (1 semester hour)
Description: The senior capstone course challenges the students to reflect on and integrate their academic experiences, both curricular and co-curricular, in preparation for the final transition from undergraduate education to graduate school or the workforce. Students will refine their ePortfolios to showcase their accomplishments and skills to potential employers and graduate schools. The course prepares students to present the results to both scientific and non-scientific communities. This course continues to address professional involvement in students' respective fields of study and the importance of civic engagement.

Admission – Graduate Programs

Graduate Admission Philosophy
Harrisburg University of Science and Technology seeks to admit graduate program students from a variety of backgrounds. The University considers many factors in the review of applicant files and generally admits qualified students who have completed a bachelor's degree with related undergraduate coursework, as well as those who have any bachelor's degree but possess related professional experiences or potential.

Admission Process
There is no application deadline at Harrisburg University. Graduate program applicants are encouraged to apply at least two months prior to the start of any semester. This application process allows ample time to be accepted, develop an academic schedule, and to process financial aid applications (if applicable).
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Graduate Admission Requirements
The University will evaluate each student's candidacy once all admissions materials have been received.

The graduate admissions process requires candidates to:
- Complete the application online at www.HarrisburgU.net/Apply or via a paper application.
- Submit final official college transcript(s), for any college or university attended (whether or not academic credit was earned).
- Submit a personal goal statement including:
  - Future Goals: Identify career/professional goals.
  - Leadership or Group Contributions: Describe examples of leadership experience in which you have significantly influenced others, helped resolve disputes, or contributed to group efforts over time.
- Submit a resume via hard copy or via email to Admissions@HarrisburgU.net.
- An international student planning to study at the University with a student (F-1) visa must satisfy the appropriate admissions requirements and procedures, demonstrate proficiency in the English language and provide an affidavit of financial responsibility. Academic records should include courses studied, grades earned, diplomas, certificates and results of comprehensive national examinations. A certified translation of previous education records is required if the records are in a language other than English.
- An applicant whose native language is not English must submit his or her scores from the Test of English as a Foreign Language (TOEFL). Information on the TOEFL can be found at www.toefl.org. A minimum score of 80 must be earned on the Web-based version of the TOEFL.

Optional materials:
- Request an interview via telephone or, preferably, in person at the University. Applicants without significant professional work experience are highly encouraged, and may be required, to participate in a personal interview.

Graduate Non-Degree Admission Process
The University will evaluate each student's candidacy once all admissions materials have been received. Offers of admission are made to qualified candidates on a rolling basis.

Complete the non-degree application online at www.HarrisburgU.net/Apply or via a paper application.

If required by a specific certificate or non-degree program, submit final official college transcript(s), providing evidence of completion of a bachelor degree program (no specific discipline required).

Graduate Non-Degree Policies

Students may take up to 18 credits under the non-degree status when just taking individual courses. Beyond 18 credits, students will need to apply for full degree status. Non-degree admission does not guarantee admission into a degree-seeking program. Students must maintain a 3.00 GPA to continue from semester to semester.

An applicant whose native language is not English must submit his or her scores from the Test of English as a Foreign Language (TOEFL). Information on the TOEFL can be found at www.toefl.org. A minimum score of 80 must be earned on the Web-based version of the TOEFL.

Academic Policies – Graduate

Calendar and Credit System
The University operates on a semester calendar and uses the semester hour credit system. There are three semesters per twelve month period: Semester I (Fall), Semester II (Spring), and Semester III (Summer).

Enrollment Status
Student enrollment status is defined for certification purposes as either full time or part time. Full time graduate student enrollment is 9 semester hours in a semester. Part time status is assigned to any graduate student enrolled for fewer than 9 semester hours in a semester.

Class Attendance
Attendance is a critical part of a student's education. The student is expected to attend class regularly and participate fully in the activities of that course. The instructor is responsible to set forth the attendance requirements for each course in the syllabus.

Attendance will be taken by instructors during the first two weeks of the semester for enrollment status determination by the Office of Records and Registration. Following that period, instructors may or may not regularly take attendance but all instructors will engage the students with class participation assignments. These assignments will gauge the level of student engagement and assist in determining student participation in the class.

If, in the judgment of the instructor, a student is excessively absent from class or fails to complete the requested participatory assignments:

1. the instructor will notify the student of this determination;
2. the student will have one week to meet with the instructor to address the situation;
3. if the student fails to do so, the instructor will notify the Office of Records and Registration to withdraw the student from the course;
4. The Office of Records and Registration will notify the student of this action and record a grade of "W."

Advanced Standing
Transfer Credit – Unofficial or student copies of transcripts may be used to initiate the transfer credit evaluation process. However, official final transcripts from the institution of origin are required before the transfer evaluation process can be finalized by the Director of Records and Registration and academic credit is posted to the student's permanent record. The following limitations apply:

- transfer credit is limited to six (6) semester hours from another graduate program;
- The credit must have been earned with final grades of "B" or higher;
- The credit must be reviewed by the student's program advisor and the Director of Records and Registration;
- The credit must have been earned no more than five (5) years prior to the student's initial enrollment date in Harrisburg University's program;
- Courses completed for Continuing Education Units (CEUs) are not eligible for transfer credit consideration.

Domestic –Academic credit earned for graduate work completed for a minimum grade of "B" or higher will be awarded if: 1) the course is a reasonable substitute of a University course or 2) the course(s) is considered graduate level work worthy of elective credit in the student's intended program of study.

International – a World Education Services (WES) transcript or American Association of Collegiate Registrars and Admissions Officers (AACRAO) international transcript evaluation is required. If the original evaluation received by the Office of Records and Registration from one of these evaluators deems the student's prior work to be at the graduate-level and the quality of the completed work is assessed to be at the "B" or higher level credit is awarded for the courses that apply to the student's intended program of study at Harrisburg University as indicated above for domestic transfer credit. If the prior work was earned under an educational system that did not assign credit values, the Harrisburg University semester hour value is assigned for each course being accepted. If the student completed courses which are evaluated to be at the graduate-level, but Harrisburg University has no comparable course(s), the student is granted elective credit unless all required elective credit hours have been satisfied.

Coursework at Other Institutions – A student may study at other institutions and transfer the credit to the student's record at Harrisburg University.

Process for Approval - The student must complete an Off-campus Coursework form at the Office of Records and Registration notifying the University of the student's intention to enroll on a visiting basis at another higher educational institution. The request will be reviewed by the Director of Records and Registration who may consult with an appropriate member of the University's faculty. Prior to enrollment, a written response will be sent to the student stating whether or not the proposed course is acceptable.

Process for Awarding of Credit – The student must arrange for an official transcript from the other college or university to be sent to Harrisburg University's Office of Records and Registration. If the approved course was completed with a final grade of "B" or higher, the semester hours earned from the course will be posted to the student's record at the University.

Catalog in Effect

A student entering the University in the 2008-2009 academic year will be subject to this Catalog edition unless he or she elects to complete a revised set of program requirements printed in a future edition of the Catalog.

A student who elects to complete a revised set of program requirements released by the University must notify the Office of Records and Registration of this decision by completing a Declaration of Major/Catalog Option Form available in that office.

Graduation Requirements

To receive a Master of Science degree, a student must satisfy all of the following requirements. Verification that the student has met the following requirements is made by the Director of Records and Registration. The Provost has the authority to waive a requirement under exceptional circumstances.

1. At least 36 semester hours must be accumulated.

2. A minimum cumulative grade point average of 3.00 is required for graduation from a Master of Science program and graduate certificate programs.

3. In order for any completed course to satisfy the 36 semester hours required, the course must be completed with a grade of "C" (2.00) or higher.

4. A student must earn a minimum of 30 semester hours in residence toward a Master of Science degree from the University. The number of semester hours that may be transferred from another institution's graduate program is 6.

5. A degree student will demonstrate proficiencies in the field of study and the University's competencies through use of an ePortfolio or a similar technology or evidence-based approach.

A candidate must apply for graduation two semesters before the student intends to graduate. The University expects each graduating student to attend Commencement.

A candidate may participate in Commencement who is within one semester of completion of all graduation requirements if the student has a reasonable and executable plan to complete all unsatisfied requirements by the conclusion of the subsequent semester.

Grades and Grading

Grades are awarded to each student for academic credit completed at the University. A grade is assigned by the instructor responsible for the course in which the student is enrolled, using the following grading scale to indicate the quality of the student's academic work.

Grade	Description	Numerical Value
A	Superior achievement	4.00
A-		3.67
B+		3.33
B	Above average achievement	3.00
B-		2.67
C+		2.33
C	Average achievement	2.00
C-		1.67
D+		1.33
D	Minimum achievement	1.00
F	Fail	0.00
AU	Audit	Not applicable
I	Incomplete	Not applicable
IP	In progress	Not applicable
NR	Not reported	Not applicable
P	Pass	Not applicable
TR	Transfer credit	Not applicable
W	Withdrawal	Not applicable
WA	Administrative withdrawal	Not applicable
WM	Medical withdrawal	Not applicable

Grades of "AU", "I", "IP", "NR", "P", "TR", "W", "WA", and "WM" are not included in the calculation of a student's grade point average (GPA). They are used by the University in circumstances when grades of "A" through "F" are not appropriate.

Audit (AU) – The audit grade is assigned by the instructor when the student has properly registered to audit the course, and has met all requirements of the University's course audit policy.

Incomplete (I) – Inability to complete course work due to documented circumstances beyond the student's control (such as severe illness) may, at the discretion of the instructor, result in a grade of incomplete (I). However, all work must be completed by the end of the Add/Drop Period of the subsequent semester. If all work is not completed by that time, the "I" grade will convert automatically to a grade of "F". It is the responsibility of the student to contact the instructor to make the necessary arrangements for makeup work. Students with 6 semester hours or more of incomplete work will not be permitted to register for future courses.

In Progress (IP) – This is a deferred grade assigned by the instructor to be used for research projects, internships, directed study, etc., when it is understood that the course will extend over more than one semester. An "IP" grade should be accompanied by a written plan and a schedule for completing the course within a specified time period to be no longer than 12 months.

Withdrawal (W) – This grade is recorded by the Director of Records and Registration when the student has withdrawn from the course according the policy set forth by the University for withdrawing from a course.

Administrative Withdrawal (WA) – The "WA" grade can be given only by the Provost or other designated University official. It is used when it is necessary for a student to leave the University under extenuating circumstances and when the normal withdrawal processes are not available to the student. A request for administrative withdrawal with accompanying documentation will be submitted to the Director of Records and Registration. The "WA" grade can be submitted at any time during the semester.

Medical Withdrawal (WM) – This grade can be assigned at any time during the semester when a student requests to leave the University for medical reasons and when the normal withdrawal processes are not available to the student. This grade is assigned by the Director of Records and Registration with the approval of the Provost. The student must submit well-documented evidence of the medical condition to be eligible for a medical withdrawal from the University.

Transfer (TR) – A grade of "TR" is used to indicate on the student's transcript those credits that have been earned at another institution and that will count toward the degree at Harrisburg University. While courses with a "TR" grade are counted toward the student's degree requirements, there are no quality points associated with this grade so this grade has no impact upon the calculation of the student's grade point average (GPA).

Not Reported (NR) – The temporary grade of "NR" is recorded by the Director of Records and Registration when the instructor does not report a grade for the student for the course. The Director of Records and Registration will advise the Provost when an "NR" grade has been recorded for the student, and will work with the student and the instructor to determine why a grade was not reported.

Pass (P) - The "P" grade is assigned by instructors for a student who completes successfully a course.

Grade Point Average

A grade point average (GPA) is a statistical calculation of a student's performance in a semester. The semester grade point average summarizes the student's performance during that academic term and the cumulative grade point average (CUM GPA) summarizes the student's performance during semesters completed at the University.

Calculation of the Grade Point Average

Course	Sem. Hrs. Attempted	Grade	Numerical Value	Quality Points
Course A	3	B	3.00	9.00
Course B	4	B-	2.67	10.68
Course C	2	A-	3.67	7.34
Course D	3	C	2.00	6.00
Total	**12**			**33.02**

Total Quality Points = 33.02 / 12 = **2.75**

1. Compute the quality points earned for each course by multiplying the semester hours earned for the course by the numerical value of the grade earned in the course.
   Example: A student registered for a course worth 4 semester hours who earns a final grade of "B-" in that course will earn 10.6 quality points for that course (4 semester hour x 2.67).
2. Add the quality points earned for each course in which the student is registered in the semester.
5. Add the number of semester hours attempted for all courses in which a grade of "A" through "F" was earned.
6. Divide the total number of quality points earned by the total number of semester hours attempted. The result is the grade point average.

Mid-Semester Deficiency Letters

Each instructor notifies the Office of Records and Registration of a student's poor academic performance in a course by submitting mid-semester deficiencies of "C-", "D+", "D", "F" or "I" at the end of the seventh week of classes as indicated on the Academic Calendar. These submissions are forwarded to the Vice President for Student Services who sends a letter to each student with a deficiency and a copy to the student's academic advisor. A student who receives such a letter is encouraged to consult both the instructor and academic advisor and utilize the services of the Academic Success Center.

Final Grading Process

After the conclusion of each semester each instructor notifies the Office of Records and Registration of a student's academic performance in a course by submitting grades. The Office of Records and Registration posts these grades to the student's permanent record at the University and releases grade reports to each student as indicated on the Academic Calendar.

Repeated Courses

Graduate students may not repeat courses.

Academic Standing

A student must maintain a cumulative grade point average of 3.00 at all times.

Withholding of Records

Student records may be withheld by the Office of Records and Registration when directed by the appropriate University officials. The release of academic transcripts and diplomas may be on hold for a period of time. The Vice President for Student Services determines when a student's record must be on hold for disciplinary reasons and the Business Office determines when a student's record must be on hold for financial reasons.

Deferred Examination Policy

This section applies to all examinations, including mid-term and take-home examinations, whether or not administered during the final examination period.

No Right to Defer

No student has a right to defer an examination. A student who fails to take an examination when scheduled will receive a failing grade of "F" on the examination unless the examination has been deferred according to the procedure outlined in this policy.

Policy on Deferral of Examinations

Examinations will be deferred only for "good cause." "Good cause" will be determined by the Vice President for Student Services in conjunction with the instructor of that course. The decision of the Vice President for Student Services is final. In the event of a lack of consensus between the Vice President and the instructor, a decision will be made by the Provost. Examples of "good cause" include:

- Serious personal injury or illness with appropriate documentation;
- Serious injury, illness or death in the immediate family that can be documented; or,
- Other extenuating mitigating circumstances beyond the student's control.

Procedure for Requesting Deferred Examination

If a student desires to request deferral of an examination, the student should file a request with the Vice President for Student Services and the instructor requesting deferral of the examination in a timely manner. Every student requesting a deferral of an examination must provide evidence of the event or situation which the student believes is justification for the request for deferral.

Emergency Deferral of Examination

The student must make the request in person or by telephone. If a student is unable to take an examination for good cause (as defined previously) and which arises within 24 hours immediately prior to

the exam time, the student may appear in person or telephone the Office of the Vice President for Student Services to obtain permission to defer an examination.

If a student cannot appear in person or by telephone, the student may miss the examination and apply for a deferral after the examination date. Such application for deferral must be made within 48 hours of the administration of the exam for which the student seeks the deferral, and in no event later than the last day of the exam period for that semester.

Timing of Make-up Examination
The deferred examination will be taken at a time determined by the Vice President of Student Services in conjunction with the instructor of the course. The make-up examination must be completed no more than five business days after the original test date.

Illness During an Examination
If a student becomes ill during an examination and is unable to continue, the student shall notify the proctor and leave all examination materials with the proctor. The student shall seek medical attention immediately and obtain a letter in support of the illness that prevented the student from completing the examination.

Leave of Absence Policy
A student may initiate a leave of absence request for extenuating mitigating circumstances or short term active-duty military service. Students choosing to take a leave of absence should contact the Vice President of Student Services to initiate the request and coordinate expectations to ensure a smooth return to the University. Only students with a reasonable expectation of returning to the University and with the ability to complete the coursework should apply for a leave of absence.

A Leave of Absence Form must be submitted in writing, signed, and dated in advance of the onset of the leave. This form can be found in the Student Services Office and the Office of Records and Registration. Information regarding the request for the leave must be provided and may require additional supporting documents. The documents will then be forwarded to the Office of Records and Registration for processing. The recording of student enrollment and grades during a leave is as follows:

- Withdrawal (W) grades will be assigned after the Add/Drop period and one week prior to the end of classes.
- Final grades may be assigned by the instructor if the leave begins after the final week of classes have commenced.

The Business Office and Financial Aid Office will determine any tuition and financial aid implications of a leave.

Withdrawal Procedure

A student considering withdrawal from the University should meet with the Vice President for Student Services for evaluation of options. A student who wishes to officially withdraw from the University must complete and sign a withdrawal form, have a conference with the Business Office Clerk and Financial Aid Director regarding possible financial consequences of withdrawing from the University, and submit the form to the Office of Records and Registration. The last date of attendance will be determined by the official withdrawal date or the unofficial withdrawal process described in the Financial Aid section.

Students who unofficially withdraw by ceasing attendance and failing to notify the Office of Records and Registration may incur substantial penalties due to stringent federal and state regulations for the student financial assistance grant and loan programs.

Readmission – The Readmission Application form is available at the Office of Records and Registration and must be completed and submitted to that office. A student who was in good academic standing, in good social standing, and had satisfied all financial obligations to the University at the time of withdrawal will be readmitted. A student who left the University while on academic warning or probation must complete the Readmission Application and the Provost will review the student's academic records and make the readmission decision.

Reinstatement

A student with a cumulative grade point average of less than 3.00, dismissed for poor scholarship pursuant to this Catalog, may petition the Vice President for Student Services for reinstatement. A student may not be reinstated fewer than twelve months from the date of the original dismissal. Students with a cumulative grade point average below 2.50 may not petition for reinstatement.

Filing Petition for Reinstatement

A petition for reinstatement must be filed during the fifteen-day period beginning with the day on which notice of dismissal is deemed effective. The petition shall be delivered to the Office of Student Services.

Requirements of the Petition

The student must allege and prove that the student possesses the requisite ability to perform satisfactorily at the University and that the student's current grade point average does not indicate a lack of capacity. The student must rebut the presumption of lack of capacity by proving the following:

   a. Demonstration of ability to do graduate-level work.
   b. Extenuating mitigating circumstances beyond the student's control. The student must prove that the academic failure was the result of extraordinary circumstances beyond the student's control. If these circumstances raised by the student were a result caused by physical or psychological incapacity suffered during a semester or before or during an examination, convincing medical proof of the condition must accompany the petition.

Dismissal Following Reinstatement

A student who has been dismissed and later reinstated is ineligible to petition if dismissed again.

Consideration of Petition for Reinstatement

Review of Petition

Petitions shall be reviewed by the Provost and Vice President for Student Services. A committee may also be convened if the Provost so chooses.

Reinstatement on Conditions

A readmitted student may be required to fulfill certain conditions such as, but not limited to, the repetition of graduate courses.

Graduate Education

Graduate Education at Harrisburg University of Science and Technology focuses on individualized career advancement in high-growth and high-demand areas of study within science, technology, engineering, and math disciplines. This is accomplished by making certain that each student is completely engaged in gaining knowledge at an advanced level, is able to specialize or generalize their knowledge and skills according to their needs and interests, and applies what is learned and researched to both practical and professional experience. This is also accomplished by involving corporate faculty members who bring a practical and academic perspective to the program and courses in the design, development and delivery of graduate education at Harrisburg University. This program is designed for working professionals focused on career advancement and who need flexibility of access and timeliness of content and delivery. The University currently offers degree programs in information technology project management and learning technologies.

GRADUATE PROGRAMS

Master of Science in Information Technology Project Management

The 36 semester hour graduate program in Information Technology Project Management (ITPM) provides each student with a focused, applied and rigorous experience in creating, developing, implementing and assessing information technology projects and their products.

To produce a high-quality information technology product on time and to the specifications of a client, the skills and knowledge of a typical engineer or programmer are not enough. The complexities of technology product development and project management require a professional with specific technical knowledge, as well as strong project management and leadership skills.

This program of study leads to a master's degree that prepares the student for career advancement in the field of project management, and for positions such as information technology project manager, project coordinator, lead project engineer or information technology business manager.

Experiential Project – The student is required to complete project courses ITPM 598 and ITPM 599 for a combined minimum of 6 semester hours, and a total maximum of 9 semester hours, toward the 36 semester hours required in the degree. These courses represent planning and implementation of a real-world project. Learning objectives for these courses are outlined through a detailed project plan which will be customized and agreed to by the student, project client and faculty advisor. The student will review the parameters of the detailed project plan at the start of the academic program and will progress through the program coursework mindful of the performance and competency requirements for successful completion of the plan. The student will have access to a list of possible projects and clients, or identify a suitable client through his or her own means. Final project approval will be granted by a faculty advisor.

Program Requirements – The following courses comprise the Master of Science in Information Technology program; 36 semester hours. The semester hour value of each course appears in parentheses ( ).

Complete <u>all</u> of the following courses – 15 - 21 semester hours:

ITPM 510	Managing IT Projects	(3)
ITPM 540	Planning and Executing Projects	(3)
ITPM 550	Managing Systems Integration Projects	(3)
ITPM 598	IT Project: Phase I	(3 - 6)
ITPM 599	IT Project: Phase II	(3 - 6)

Complete 15-21 semester hours of the following courses:

ITPM 515	Business Analysis Fundamentals	(3)
ITPM 520	Professional Communication for the IT Project Manager	(3)
ITPM 525	Understanding & Documenting Technology Requirements	(3)
ITPM 530	Procurement, Contracts & Risk Management	(3)
ITPM 531	System Development Lifecycle Introduction	(3)
ITPM 535	Business Process and Workflow Modeling	(3)
ITPM 551	Survey of Software Development Technologies and Architectures	(3)
ITPM 560	Organizational Leadership	(3)
ITPM 570	Improving IT Project Quality	(3)
ITPM 580	Special Topics in IT Project Management	(3)

Recommended Two-Year Sequence for Master of Science in Project Management Program – The sequence which appears below was developed based upon the availability of specific courses each semester, the successful completion of course prerequisites, and assumes that the first semester is in the fall of the academic year.

First Year

Second Year

Semester I	ITPM 510 Managing IT Projects (3) Elective (3) **Total Semester Hours = 6**	**Semester I**	ITPM 550 Managing Systems Integration Projects (3) ITPM 598 ITPM Project Phase I (3 – 6) **Total Semester Hours = 6 - 9**
Semester II	ITPM 540 Creating & Managing IT Projects (3) Elective (3) **Total Semester Hours = 6**	**Semester II**	Electives (6) **Total Semester Hours = 6**
Semester III	Electives (6) **Total Semester Hours = 6**	**Semester III**	ITPM 599 IT Project Phase II (3 – 6) Elective (3) **Total Semester Hours = 6 - 9**

Learning Technologies

<u>Master of Science in Learning Technologies</u>
The Master of Science in Learning Technologies is a 36 semester hour program which provides the student with the leading edge approaches and skills to help the student understand and integrate existing and emerging learning technologies into a variety of learning environments. The program is designed to critically explore how new technologies can be used effectively to enhance learning environments and prepare students for leadership roles in those environments. A key element of the Learning Technologies master's degree is the use of technology to integrate and develop new ways of learning and ways to assess learning, as well as explore new approaches to work (especially collaborative work). The degree is a blend of theory and practice which develops skills that can be applied to complex education and training issues.

The 36 semester hour program includes work in theory, applied coursework in practice, and specific project-based work, regardless of the student's particular interest. The student has great flexibility within a variety of topics for both project and the research practicum.

Experiential Project – The student is required to complete project course LTMS 610 for 3 semester hours toward the 36 semester hours required for the degree. This course represents planning and implementation of a real-world project. Learning objectives for this course are outlined through a detailed project plan which will be customized and agreed to by the student, project client and faculty advisor. The student will review the parameters of the detailed project plan at the start of the academic program and will progress through the program coursework mindful of the performance and competency requirements for successful completion of the plan. The student will have access to a list of possible projects and clients, or identify a suitable client through his or her own means. Final project approval will be granted by a faculty advisor.

Practicum – The student will identify a specific research area or community-based project within learning technologies. The student will work with the advisor either to develop a research project (to include researchable questions, appropriate research methods, and a research proposal) or to scope out a project with an external client (to include learning objectives and a detailed, customized project plan). The student will use ePortfolio or a similar technology to synthesize and demonstrate learning throughout the course. This practicum is not required to be completed in the semester it is started.

Program Requirements – The following courses comprise the Master of Science in Learning Technologies program; 36 semester hours. The semester hour value of each course appears in parentheses ().

Complete <u>all</u> of the following courses – 15 semester hours:
LTMS 500	Instructional Design and Development	(3)
LTMS 510	Learning Technologies and Solutions	(3)
LTMS 520	Learning Assessment	(3)
LTMS 525	How Do Humans Learn?	(3)
LTMS 530	Managing IT Resources	(3)

Complete all of the following courses for a <u>minimum total of 9</u> semester hours:
LTMS 610	Learning Technologies Project	(3-6)
LTMS 630	Practicum in Learning Technologies	(3-6)

Complete <u>four or five</u> of the following courses – 12 - 13 semester hours:
LTMS 580	Special Topics in LTMS	(3)
LTMS 598	Critical Issues in Teaching Science	(3)
LTMS 599	Critical Issues in Technology Integration	(3)
LTMS 600	Implementing Web 2.0 in the Classroom	(3)
LTMS 601	Research Development and Design	(1)
LTMS 602	Technology Evaluation and Selection	(3)
LTMS 615	The Learning Technology Architecture	(3)
LTMS 625	Designing and Supporting Systems, Methods, and Processes for Reusable Learning Objects	(3)
LTMS 635	Development Tools to Support Learning Technologies	(3)

Recommended Two-Year Sequence for Master of Science in Learning Technologies Program – The sequence which appears below was developed based upon the availability of specific courses each semester, the successful completion of course prerequisites, and assumes that the first semester is in the fall of the academic year.

First Year   **Second Year**

Term 1	LTMS 510 Learning Technologies & Solutions (3) **Total Semester Hours = 3**	**Term 1**	LTMS 520 Learning Assessment (3) **Total Semester Hours = 3**
Term 2	LTMS 500 Instructional Design and Development (3) **Total Semester Hours = 3**	**Term 2**	LTMS 525 How Do Humans Learn? (3) **Total Semester Hours = 3**
Term 3	Elective (3) **Total Semester Hours = 3**	**Term 3**	LTMS 530 Managing IT Projects (3) **Total Semester Hours = 3**
Term 4	Elective (3) **Total Semester Hours = 3**	**Term 4**	LTMS 610 or 620 Learning Technologies Project (3 - 6) **Total Semester Hours = 3 - 6**
Term 5	Elective (3) **Total Semester Hours = 3**	**Term 5**	LTMS 630 Practicum in Learning Technologies (3 – 6) **Total Semester Hours = 6 - 9**
Term 6	Elective (3) **Total Semester Hours = 3**	**Term 6**	

COURSE DESCRIPTIONS – GRADUATE

INFORMATION TECHNOLOGY PROJECT MANAGEMENT (ITPM)

ITPM 510 Managing Information Technology Projects (3 semester hours)
Prerequisites: Bachelors degree in IT or business field or appropriate work experience
Description: This course introduces students to the variety of skills and roles of the IT project manager. A student will learn the basic techniques of project management from setting goals and objectives through managing the selection of IT support products and procurement. This course serves both as an introduction and survey for a student pursuing the graduate degree or for undergraduate seniors interested in IT management. Students will be introduced to a framework for the required Master's projects.

ITPM 515 Business Analysis Fundamentals (3 semester hours)
Prerequisites: Bachelors degree or appropriate work experience
Description: Participants will become familiar with the common tasks performed by business analysts during the lifecycle of a project. Emphasis is given to strategy, initiation, planning, execution, and closeout phases of an IT project, and how these tasks support the entire project team including the project manager and the solution designer. Students will learn foundational elements of enterprise analysis, requirements gathering and documentation, and project assessment and closeout. This course can count toward preparation of the student for the IIBA Business Analysis certification.

ITPM 520 Professional Communication for the IT Project Manager (3 semester hours)
Prerequisites: Bachelors degree in IT or business field or appropriate work experience
Description: In this coursea student will learn about effective communications for IT project managers as well as practice the skills at each class meeting. Solid communications starts with identifying the audience as well as the most appropriate communication medium. The student will learn how to communicate in a variety of media. Conflict resolution, small group and interpersonal communication are practiced to best support the information technology project manager's leadership and success.

ITPM 525 Understanding & Documenting Technology Requirements (3 semester hours)
Prerequisites: Bachelors degree or appropriate work experience
Description: Students will develop techniques and methods for eliciting, documenting, organizing, and managing the requirements for an IT project from the perspective of a business analyst. Students will examine, practice and critique best practices for elicitation techniques used with project clients and other stakeholders, such as brainstorming, interviewing and requirements workshops. Students will practice these techniques from the point of view of a stakeholder, subject matter expert and business analyst.

ITPM 530 Procurement, Contracts, & Risk Management (3 semester hours)
Prerequisites: Bachelors degree in IT or business field or appropriate work experience
Description: Each project from conception of an idea to the bidding and implementation process has both risk and reward. The student will learn the basics of procurement, contract negotiations and risk management. Through experiences, readings and case study analysis, the fundamental tenants of procurement and contract sourcing for success are explored in real world scenarios. Project risk is reviewed and investigated for its role in the process of overall project management. The student will learn how to minimize risk and increase project success through risk management strategies.

ITPM 531 System Development Lifecycle Introduction (3 semester hours)
Prerequisites: Bachelors degree or appropriate work experience
Description: Students are introduced to essential topics related to software development methodologies and practices. Key topics include methodology concepts (such as phases and deliverables) and a history/evolution of methodology practices. The various types of methodologies (e.g. waterfall, iterative, agile) are covered. The course addresses the Unified Process in detail – covering the various phases and disciplines. Additionally, the course includes some special topic areas to explain the relationship between a software development methodology and other frameworks and management methodologies such as Project Management Body of Knowledge (PMBOK) and Capability Maturity Model Integration (CMMI).

ITPM 535 Business Process and Workflow Modeling (3 semester hours)
Prerequisites: Bachelors degree or appropriate work experience
Description: Students examine process and workflow modeling techniques, and will be provided with an introduction to other tasks for which business analysts are responsible during the project implementation. Emphasis is placed on the Unified Modeling Language, activity diagram notations, sequence diagramming and class and use-case diagrams. Students will develop process and workflow models and use-cases to reflect case studies and real-world scenarios.

ITPM 540 Planning and Executing Projects (3 semester hours)
Prerequisites: ITPM 510
Description: This course uses Microsoft Project software, to schedule and control projects. A student will learn about, and practice with, the most widely used project management software system available. A student will learn functions, monitor alternative usages and maintain data as he or she builds a project from the ground up. This is a comprehensive, semester-long project building course where "practiced theory" is the platform for learning.

ITPM 550 Managing System Integration Projects (3 semester hours)
Prerequisites: ITPM 510 and ITPM 540
Description: This course introduces students to Systems Integration Projects as a class of IT projects and methods that can be used to manage, control and execute them effectively. It will explore the uniqueness of these projects specifically the issues that scale can bring to managing them. The PMI Integration processes will provide a base for the studies in this class. Students will explore the needed planning for the many domains of a Systems Integration Project, again as they drive complexity into the management and control of the project. Practical budgeting and cost control techniques will be modeled in class to develop a cost effective approach to maintaining project control. Measurement, charting and analysis will be developed as key tools in the management of IT projects.

ITPM 551 Survey of Software Development Technologies and Architectures (3 semester hours)
Prerequisites: ITPM 541
Description: Students are introduced to various technologies encountered within software development projects and lifecycles as well as key architectural aspects of robust enterprise applications. Topics for software development technologies include development languages and frameworks (e.g., .NET and Java), various tools used during the development lifecycle, and key components of an application such as the data layer and User Interface. Architectural topics include prevalent patterns such as Model-View-Controller (MVC) and Service Oriented Architecture (SOA). The student will complete an architectural specification for the project defined during requirements elicitation and documentation.

ITPM 560 Organizational Leadership (3 semester hours)
Prerequisites: Bachelors degree in IT or business field or appropriate work experience
Description: Successful project managers are adept at leading. Leadership, however, is a complex undertaking that requires knowledge and understanding of a number of competencies. The purpose of this course is to build these competencies. Focusing on organizational leadership, the course explores and develops skills and knowledge needed to lead organizational transformation and change, negotiate conflict resolution, build relationships and human capital, and instill business ethics and professional codes of conduct.

ITPM 570 Improving IT Project Quality (3 semester hours)
Prerequisites: ITPM 510, ITPM 540 and ITPM 550
Description: The information technology product is central to most business systems. Quality of the product is represented by accuracy, reliability, repeatability and specific customer requirement standards. In this course the student will learn the various techniques to understand the quality control processes and quality assurance measures as demonstrated in industry standards and protocols. The IT project manager's responsibility is to insure quality, that appropriate protocols are in place, and that they are maintained with the highest degree of confidence.

ITPM 580 Special Topics in IT Project Management (3 semester hours)
Prerequisites: Bachelors degree in IT or business field or appropriate work experience
Description: This course explores a topic of special interest that is timely and in response to a timely critical issue in the field of technology project management.

ITPM 598 IT Project: Phase I (3 - 6 semester hours)
Prerequisites: ITPM 510 and ITPM 540
Description: Under the tight fiscal pressures and the increasing complexities of IT project creation, coordination and management, IT project managers need to complete their projects on budget, on time and with a quality product. Working for a project client, students focus (in this first phase of the IT project) on project initiation, planning and execution phases. Students contribute to the management of a live project for a client, under the guidance of a faculty advisor. Learning objectives, including expected work products for the course, are a part of the detailed project plan to be created. The project plan will be customized to reflect the specific project responsibilities that have been agreed to with the external client. Students will use ePortfolio or a similar technology to demonstrate learning throughout the course. This project is not required to be completed in the semester it is started.

ITPM 599 IT Project: Phase II (3 - 6 semester hours)
Prerequisites: ITPM 598
Description: This course focuses on the implementation and closing out phases of a project. Working for an external client, students focus on executing, monitoring, controlling and closing out a project. An analysis of successes and failures will be conducted. Students will use ePortfolio or a similar technology to demonstrate learning throughout the course. This project is not required to be completed in the semester it is started.

LEARNING TECHNOLOGIES (LTMS)

LTMS 500 Instructional Design and Development (3 semester hours)
Prerequisites: BA/BS Degree, basic computer skills, or permission of the instructor
Description: This is a core course in the Learning Technologies curriculum which provides an introduction to various instructional design models and how these models approach the stages of analysis (to include gap analysis), design, delivery and evaluation. The intent and goal of the course is to provide a general understanding of instructional design models and approaches, as well as to explore trends and potential multimedia applications within those models. For example, ePortfolio, will be introduced in this course, and incorporated as a tool throughout this program, as a method of demonstrating learning.

LTMS 510 Learning Technologies and Solutions (3 semester hours)
Prerequisites: BA/BS Degree, basic computer skills, or permission of the instructor
Description: This course presents an overview of multiple technology-based solutions to realize learning outcomes. Beyond a survey of learning softwares, the course challenges students to think broadly about emerging technology trends that present learning opportunities. By understanding the request for proposal process as it relates to learning products, students will be able to identify and begin to assess suitable technology tools to bring about learning outcomes through interactive technology resources. A broad survey of open source and proprietary solutions will be explored as well as emerging trends in learning technologies. Course topics are examined within a framework of learning strategies and learning architectures.

LTMS 520 Learning Assessment (3 semester hours)
Prerequisites: BA/BS Degree, basic computer skills, or permission of the instructor
Description: The course is an introduction to measuring multi-modal learning and performance with a particular emphasis on the use of technology. The following topics will be explored: formative and summative assessment, authentic assessment, subjective and objective assessment, criterion-referenced and norm-referenced assessment, formal and informal assessment, testing and evaluation standards, analytics and metrics, the importance of validity and reliability, and the use of technology in the assessment process.

LTMS 525 How Do Humans Learn? (3 semester hours)
Prerequisites: BA/BS Degree, basic computer skills, or permission of the instructor
Description: This course is an in-depth exploration of learning. Through exercises, simulations and the use of technology, students will examine the impact of learning on performance and ways to position performance as a learning outcome. The following topics will be addressed: cognitive processing, behavioral modeling, motivation, transfer, metacognition, cognitive apprenticeship, social learning, culture and learning, e-learning, creating environments that support learning, and the integrated nature of technology and learning.

LTMS 530 Managing Inforamtion Technology Resources (3 semester hours)
Prerequisites: BA/BS Degree, basic computer skills, or permission of the instructor
Description: This course develops skills to plan for and manage the necessary institutional resources to support the integration and expansion of a learning infrastructure. Topics include assessing emerging learning technology needs using, for example, needs analyses and benchmarking; identifying systematic and programmatic integration opportunities and challenges; and how to connect learning outcomes with the core business objectives through innovative technology resources and applications. An introduction to strategies and tools in project management will provide a framework within which to manage new projects. Leadership skills to advocate for investment in learning technologies, and provide vision and support for long-range growth of an organization's learning technologies resources will be identified.

LTMS 540 Internet Research and Distance Learning Approaches (3 semester hours)
Prerequisites: BA/BS Degree, basic computer skills, or permission of the instructor
Description: This course expands on specific learning technologies and approaches available on the internet as a delivery mechanism for education and training. In particular, students will identify opportunities to enhance learning and empower learners through the use of portals and the personalization of learning. Content management and the development of reusable learning objects will be used to introduce the idea of learning in new spaces.

LTMS 580 Special Topics in LTMS (3 semester hours)
Prerequisites: Bachelor degree in field or appropriate work experience
Description: This course explores a topic of special interest that is timely and in response to a critical issue in the field of learning technology.

LTMS 598 Critical Issues in Teaching Science (3 semester hours)
Prerequisites: BA/BS Degree, basic computer skills, or permission of the instructor
Description: This course explores critical issues with the integration of learning technologies into a science curriculum. Beginning with learning outcomes identified in a science curriculum, students will use multiple methods, such as case studies on innovative applications of technology, to create learning solutions. The course will explore issues such as how to empower future science educators through the integration of technology into the science curriculum, and what means of continuous learning in technologies exist for science educators.

LTMS 599 Critical Issues in Technology Integration   (3 semester hours)
Prerequisites: BA/BS Degree, basic computer skills, or permission of the instructor
Description: This course looks at critical issues in the role of learning technologies within a variety of organizational models. This course examines ways to broaden the application of learning tools across divisions within an organization in support of broader organizational goals. An introduction to new information management strategies such as knowledge management will be included. Students will strategically assess their own environments and those of other organizations to identify new opportunities for the integration of learning technologies with consideration given to impact on the bottom line.

LTMS 600 Implementing Web 2.0 in the Classroom (3 semester hours)
Prerequisites: Bachelors degree or appropriate work experience and basic computer skills
Description: This intensive course is designed for classroom educators to explore, and practice with, Web 2.0 learning technologies and how the integration of these technologies into teaching and learning impact their teaching and classroom dynamics. Tools to be explored and used, for example, include RSS feeds and aggregators, blogs, wikis, social bookmarking, mashups, podcasts and more. Students will begin to design a classroom activity incorporating one or more Web 2.0 tools for implementation in their classroom. Within a peer learning model, students will design, implement and evaluate a classroom activity that incorporates one or more Web 2.0 tools. The results of this applied project and experiment will be reported out and presented. Lessons created will become a part of a technology-based collection of classroom activities which participants can continue to access after the course.

LTMS 601 Research Development and Design (1 semester hour)
This course provides an overview of best practices for finding and framing researchable questions, conducting a literature review, and looking at the similarities and differences between quantitative and qualitative research. Students will learn how to approach the research they will be required to do as a part of their Practicum in Learning Technologies.

LTMS 602 Technology Evaluation and Selection (3 semester hours)
Prerequisites: LTMS 510
Description: This class advances the learning in LTMS 510. Effectively evaluating and selecting the right technology solution (software, hardware, and services) for a myriad of complex situations is a necessary skill in the development and management of learning technology projects or initiatives. It entails understanding market-forces and technology trends while balancing internal needs with external business drivers. Technology solutions that are well designed and evaluated create new capabilities and capacity within organizations.

LTMS 610 Learning Technologies Project (3 - 6 semester hours)
Prerequisites: 15 MS degree hours completed
Description: Students will create and execute a detailed project plan to use as part of a real-world project that applies concepts and skills previously explored throughout the program. A student's project will be customized to their particular area of interest in learning technologies. This experiential course also provides an opportunity to reinforce and demonstrate the eight University competencies, i.e., critical thinking, communication, teamwork and collaboration, entrepreneurship, information literacy, ethical decision making, global awareness, and civic engagement.

LTMS 615 The Learning Technology Architecture (3 semester hours)
Prerequisite: Bachelors degree or appropriate work experience and basic computer skills.
Description: This course examines how learning technologists in organizations plan and prepare for the extension and expansion of the learning architecture over time. Topics covered include a broad overview of learning technology architecture, designing a long-term plan and budget, considerations for installing and configuring enterprise learning technologies, supporting learning technologies within the existing IT environment, and managing course content and other digital assets. This course will also cover supporting Web 2.0 technologies, integration issues, system security considerations, and supporting the user community.

LTMS 625 Designing and Supporting Systems, Methods, and Processes for Reusable Learning Objects (3 semester hours)
Prerequisite: Bachelors degree or appropriate work experience and basic computer skills.
Description: This course introduces the standards of interoperability created for all varieties of delivery platforms and Learning Objects that are connected within, or to create, courses. These standards influence how authors create, share, and reuse Learning Objects. Topics covered include the evolution of learning technology standards, the content model, and Content Object Repository Discovery and Registration/Resolution Architecture (CORDRA).

LTMS 630 Practicum in Learning Technologies (3-6 semester hours)
Prerequisites: 20 credit hours and faculty advisor approval
Description: The student will identify a specific research area or community-based project within learning technologies.

LTMS 635 Development Tools to Support Learning Technology (3 semester hours)
Prerequisites: Bachelors degree or appropriate work experience and basic computer skills.
Description: This course introduces content authors to XML and it is used to separate content objects from the mechanisms (such as .pdf, html, xhtml) used to present them. The course also teaches content authors how to use XSL to convert their XML-wrapped content to a variety of output types.

Professional Development

Professional Development is responsible for all contracted training, non-credit certificates, and professional development offerings for employers and working professionals. The professional development offerings through Harrisburg University provide specific and advanced skills training and industry certifications within the University's mission of science and technology.

The University works with organizations to conduct training and education needs analyses and to develop customized training solutions. The University partners, for example, with various outside agencies including but not limited to: corporations, government agencies, and school districts to develop customized solutions that contribute to professional development of the existing workforce.

For more information, contact continuinged@HarrisburgU.net or visit our website at http://www.HarrisburgU.net/academics/professional/.

University Administration

Harrisburg University of Science and Technology is a private, not-for-profit organization providing instruction, research, and service to the community.   The university is governed by a Board of Trustees. The immediate regulation and direction of the academic, research, and service activities of the university are delegated by the Board of Trustees to the President and the faculty of the university.

<u>2008-2009 Board of Trustees:</u>

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Melody	Templeton	Geospatial Imaging Science
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Administration

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Nancy	Adams	University Librarian
Jason	Brandt	Application Specialist
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Jason	Donnelly	Admissions Counselor
Vincent	Frank	Director of Financial Aid
Paula	Gray	Assistant Controller
Keith	Green	Director of Institutional Compliance and Reporting
Kendra	Heinbaugh	Executive Administrative Assistant
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Kara	Jackow	Advancement Assistant
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Duane	Maun	Controller, Acting Chief Financial Officer
Teri	Mickle	Admissions Counselor
Kerry	Miller	Admissions Counselor
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Andrej	Petroski	Director of Learning Technologies
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Jared	Savage	Admissions Counselor
Elizabeth	Simcox	Vice President for Student Services
Jeanne	Wagner	Director of Records and Registration
Jeremy	Walmer	Financial Accounts Manager
JP	Watson	Technical Assistant for Records and Registration
Michael	Wilson	Director of Recruitment
Linda	Wright	Associate Vice President for Human Resources and Administration
James	Young	Associate Vice President for Information Services

University Policies

Family Educational Rights Privacy Act (FERPA) Policy

The Harrisburg University collects a considerable amount of information about each student during the period of enrollment. Almost all of this information is contained in records protected by the Family Educational Rights Privacy Act (FERPA), a federal statute signed into law in 1974. Under this law, a student has the right to review the records and to challenge anything in them that is perceived to be inaccurate or misleading. FERPA regulations also stipulate that the University cannot release information from the student's records to anyone but the student without the student's written consent, except to the extent that the FERPA policy authorizes disclosure without consent. The student should also be aware of the following:

Directory Information Policy - The University may disclose directory information about the student unless the student specifically informs the University in writing that this type of information should **not** be released. Directory information includes:

- student's name
- address
- e-mail address
- telephone number (s)
- class year, program of study
- enrollment status
- dates of attendance
- degree(s) and/or awards received
- participation in officially recognized University activities

For additional information on the FERPA policy see
http://www.ed.gov/policy/gen/reg/ferpa/index.html

Equal Opportunity

The University is committed to assuring equal opportunity to all persons and does not discriminate on the basis of race, creed, color, gender, age, religion, national origin, veteran or handicap status, or sexual orientation in its educational programs, activities, admissions, or employment practices as required by Title IX of the Educational Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, Title VI of the Civil Rights Act of 1964, and other applicable statutes. Inquiries concerning Title IX, Section 504, compliance and information regarding campus accessibility, may be referred to the Americans with Disabilities Act (ADA) Coordinator.

Credit Card Policy

The University is in compliance with state requirements for policies related to the marketing of credit cards on campus (Senate bill 157 session 2003 article xx111-A, Section 2301-A).

The Board of Trustees of the University adopted the following statement related to credit card solicitation on October 13, 2004:

> "Harrisburg University prohibits the marketing of all forms of credit cards on university property as well as prohibiting credit card marketers from offering gifts to a student in exchange for completing a credit card application."

Acceptable Use of Information Technology Policy

Introduction

Harrisburg University offers comprehensive academic programs that emphasize science and technology. Access to information technology is essential to the pursuit and achievement of the university's instructional, research, administrative and service missions. As such, the use of information technology is a privilege and all members of the university community are expected to be responsible and ethical users of information technology. This policy applies to all technology acquired by or on behalf of Harrisburg University (wherever used) and all technology (however acquired) used on any Harrisburg University resources[1].

Purpose
This policy:

    A. Promotes the responsible and ethical use of computing, information resources, and/or communication systems, collectively known as "information technology" but hereafter known as "IT," administered by the Office of Information Services (OIS).

    B. Defines the rights, responsibilities, and standards of conduct for Harrisburg University, its faculty, administrators, staff, students, and other authorized users with regard to the use of IT.

    C. Explains the appropriate procedures for enforcing any and all misuse of the university's IT resources and outlines appropriate disciplinary procedures for violating these rules.

Responsibilities

    D. It is the responsibility of the university faculty, administrators, staff, or student workers to communicate this policy and its contents to any and all users of IT at, or in affiliation with, Harrisburg University. Not being aware of any part of this policy does not excuse the

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[1] Computers, computer systems, networks, electronic communications systems, data storage media, facilities, peripherals, servers, routers, switches, equipment, software, files, or accounts.

individual from being responsible for its contents.

E. The Harrisburg University OIS is responsible for the following:

    i. Maintaining user accountability requirements including user identification and authentication, account administration, and password integrity.

    ii. Making every effort to protect the privacy of users and confidentiality of data[2].

    iii. Ensuring fair access to IT.

    iv. Developing and implementing security policies and standards.

F. All Harrisburg University IT users are responsible for the following:

    i. Acting in a responsible, ethical, and legal manner in the use of IT. As such, this use of IT implies consent with any and all applicable university policies and regulations.

    ii. Using IT for authorized university business only. Excessive use of any IT resource for personal use is prohibited.

    iii. Safeguarding data including personal information and passwords.

    iv. Recognizing the limitations to privacy afforded by electronic services.

    v. Respecting other users and their expectation of privacy, confidentiality, and freedom of expression.

    vi. Taking precautions to prevent the initial occurrence and/or spread of computer viruses. Therefore, network connected resources must utilize university-approved anti-virus software.

    vii. Avoiding any unauthorized or illegal use of IT. This includes but is not limited to the transmission of abusive or threatening material, spam, or communications prohibited by state or federal laws.

    viii. Using IT in compliance with applicable license and purchasing agreements. Each user is individually responsible for reading, understanding, and adhering to all licenses, notices, and agreements in connection with IT which he or she uses.

Compliance

G. Harrisburg University reserves the right to capture, preserve, and/or inspect any information transmitted through, stored in its computers, or used on any IT resource without notice but especially when:

    i. There is reasonable cause a user has violated this policy.

    ii. A user or an account appears to be engaged in unusual activity.

    iii. It is necessary to protect the integrity, security, or functionality of Harrisburg University's IT resources.

    iv. It is necessary to protect the Harrisburg University from liability.

    v. It is permitted or required by law.

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[2] While Harrisburg University recognizes the importance of (and makes every attempt to achieve) privacy, the university cannot promise privacy of information stored on, or sent through, university-owned systems or resources except for certain information pertaining to student records, research, or other proprietary or patentable materials.

Enforcement and Disciplinary Procedures

H. Any user who violates any part of this policy may be subject to the following:

    i. Suspension or revocation of the user's computer account and/or suspension or revocation of access to the university's IT resources.
    ii. Disciplinary action as described in Harrisburg University's Student Handbook which may include suspension, dismissal, or expulsion from the university.
    iii. Disciplinary procedures outlined in Harrisburg University's Faculty Handbook or any other documents outlining conduct for faculty, staff, administration, or student employees which may include termination of employment or other disciplinary action.
    iv. Civil or criminal prosecution under federal and/or state law. Noncompliance with certain provisions of this policy may incur penalties under such laws which may include fines, orders of restitution, and imprisonment.
    v. Re-instatement of computer privileges shall be examined on a case-by-case basis.

Procedure to Update and/or Amend

Harrisburg University reserves the right to update and/or amend this document to reflect university policy changes and/or state or federal law.

Intellectual Property Policy

Purpose

The policy reflects the following goals:

- To create an environment that encourages the generation of new knowledge by faculty, staff, and students.
- To facilitate wide transfer of useful inventions, ideas, and writings to society.
- To motivate the development and dissemination of intellectual property by providing appropriate financial rewards to creators and the university, and administrative assistance to creators.
- To ensure that the financial return from the development of intellectual property does not distort ethical decisions and operations of the university in a manner contrary to the mission of the university.

Definitions

Terms used in this document are defined in this section. These definitions may not necessarily conform to customary usage.

Intellectual Property includes any patentable invention, any copyrightable subject matter, or trade secret. It also includes works of art, inventions, discoveries, or creations that might normally be developed on a proprietary basis.

University means Harrisburg University of Science and Technology.

Student means any full-time or part-time graduate or undergraduate student, regardless of whether the student receives financial aid from the university or from outside sources. It is the responsibility of

students who are also employees of other outside entities to resolve any conflicts between this policy and provisions of agreements with their employers prior to beginning any undertaking at the university that will involve the development of intellectual property.

Faculty means members employed for pay at the university, plus instructors and those who have faculty appointments of various types.

Staff means any employee of the university other than students and faculty as defined above. If a student is also a part-time university employee, he/she is considered as staff with regard to intellectual property developed as a result of his employment, and as a student with regard to other intellectual property. A full-time non-faculty employee who is also taking one or more courses is considered to be staff. Visitors to the university who make substantial use of university resources are considered as staff with respect to any intellectual property arising from such use.

Creator means any person (or persons) who create an item of intellectual property.

Net proceeds to the university means all proceeds received by the university on intellectual property that it assigns, sells or licenses, minus any application, litigation, interference, or marketing costs directly attributable to the intellectual property being licensed. Deducted costs shall be reasonable and fair, and shall be properly disclosed; the sources and amounts of compensation shall also be properly disclosed.

Net proceeds to the creator means all proceeds received by the creator from intellectual property owned by him/her that he/she sells, assigns or licenses, less the costs of application, legal protection, or litigation, interference, travel and other marketing costs directly attributable to the intellectual property being exploited. Such net proceeds do not include compensation legitimately received by the creator for consulting services or interest or other return on invested labor or capital. Deducted costs shall be reasonable and fair, and shall be properly disclosed; the sources and amounts of compensation shall also be properly disclosed.

Substantial use of university facilities means extensive unreimbursed use of major university laboratory, computational facilities, or human resources. The use of these facilities must be important to the creation of the intellectual property; merely incidental use of a facility does not constitute substantial use, nor does extensive use of a facility commonly available to all faculty or professional staff (such as libraries and offices), nor does extensive use of a specialized facility for routine tasks. Use will be considered "extensive" and facilities will be considered "major" if similar use of similar facilities would cost the creator more than $5000 (five thousand dollars) in constant 2004 dollars if purchased or leased in the public market. Creators wishing to directly reimburse the university for the use of its facilities must make arrangements to do so before the level of facilities usage for a particular intellectual property becomes substantial.

In any given year the equivalent figure for a particular amount of money in constant 2004 dollars will be obtained by multiplying that amount of money by the ratio of the most recent quarterly Disposable Personal Income Deflator divided by the average monthly Disposable Personal Income Deflator for the year 1984.

Policy Provisions

This section states the policies concerning ownership of intellectual property created at the institute. In order of precedence, ownership of intellectual property shall be as follows:

1. Externally Sponsored Work

Ownership Provisions: Intellectual property created as a result of work conducted under an agreement between an external sponsor and the university that specifies the ownership of such intellectual property shall be owned as specified in said agreement.

2. Internally Sponsored Work

Ownership Provisions: When the university provides funds or facilities for a particular project to the extent of substantial use, it may also choose to designate itself as sponsor of that work. The university may declare itself the owner of intellectual property resulting from said work. In such cases the university must specify in advance the disposition of any intellectual property rights arising from the project. If such ownership provisions are not in place, the university will not go into contract with researcher.

3. Individual Agreements

Ownership Provisions: Intellectual property, which is the subject of a specific agreement between the university and the creator(s) thereof, shall be owned as provided in said agreement. Such agreements by the university and the faculty are encouraged.

4. Intellectual Property Created Within Scope of Employment

Ownership Provisions: Intellectual property created by university employees who were employed specifically to produce particular intellectual property shall be owned by the university if said intellectual property was created within the normal scope of their employment. Computer programs written on the job by staff computer programmers would fall under this provision.

5. Public Dedication

Ownership Provisions: Except when limited by the above, the creator of any intellectual property may choose to place his or her creation in the public domain. In such cases both the creator and the university waive all ownership rights to said property.

6. In General

Unless governed by the above, ownership of intellectual property created at the university shall be determined as follows:

A. Traditional Rights Retained

Ownership Provisions: In keeping with establishing academic traditions at the university, the creator retains all rights to the following types of intellectual property, without limitation: books (including textbooks), educational courseware, articles, pictorial and graphic works, audio-visual works, and sound recordings, regardless of the level of use of university facilities. This provision does not include computer software (other than educational courseware) or databases.

B. No Substantial Use of University Facilities

Ownership Provisions: The creator owns all intellectual property created without substantial use of university facilities, including intellectual property rights in computer software and databases.

C. Substantial Use of University Facilities - No External or Internal Sponsorship

Ownership of intellectual property created with substantial use of university facilities, but not directly arising from externally sponsored work, or from work for which the university has declared itself as sponsor, shall be determined as set forth hereinafter depending on whether the creator or the university develops said property.

i. Development by Creator

Ownership Provisions: The creator originally owns intellectual property created with substantial use of university facilities but no external or internal sponsorship, and retains said ownership by commercial development of said property subject to the following: (i) the university shall receive 15% (fifteen percent) of the net proceeds to the creator above $25,000 (twenty-five thousand dollars) in constant 2004 dollars from all sources (in the case of patents and copyrights, this provision shall be limited to the life of the patent or copyright), and (ii) the university shall receive a perpetual, non-exclusive, non-transferable, royalty free license to use said intellectual property. In the case of software, this license includes access by specified university personnel to the source listings, and the university shall require each person to whom a disclosure is made to execute in advance a binding confidentiality agreement in favor of and enforceable by the creator. If the intellectual property is created solely by a student or students, the creator is exempt from the obligation to pay to the university a fraction of his net proceeds, but not from the provision of this paragraph for a non-exclusive license to the institute.

ii. Development by the University

Ownership Provisions: When intellectual property is created with substantial use of university facilities, but not directly arising from sponsored research, the creator will originally retain the rights to the property, provided that he desires to commercially develop the property himself or to make it available to the public. If, however, the creator elects not to commercially develop same or fails to show diligence in pursuing such development, then the ownership rights to that property may be acquired by the university.

D. Substantial Use of University Facilities - External or Internal Sponsorship

Ownership of intellectual property created with substantial use of university facilities and directly arising from work sponsored under an agreement between an external sponsor and the institute, or from work for which the university has declared itself a sponsor, but for which neither the external sponsor nor the university have specified the ownership of resulting intellectual property shall be determined as set forth hereinafter depending on whether the creator or the university develops said property.

i. Development by University

Ownership Provisions: The university originally owns intellectual property created with substantial use of university facilities provided by an external agreement or internal university sponsorship and retains said ownership by commercial development of said property, subject to the following: in all cases, the creator shall receive 50% (fifty percent) of the net proceeds to the university.

ii. Development by Creator

Ownership Provisions: When intellectual property is created with substantial use of university facilities provided by external or internal sponsorship, the university will originally retain the rights to the property, provided that it desires to commercially develop the property or to make it available to the public. If, however, the university elects not to commercially develop the same or fails to show diligence in such development, the ownership rights to that property may be acquired by the creator.
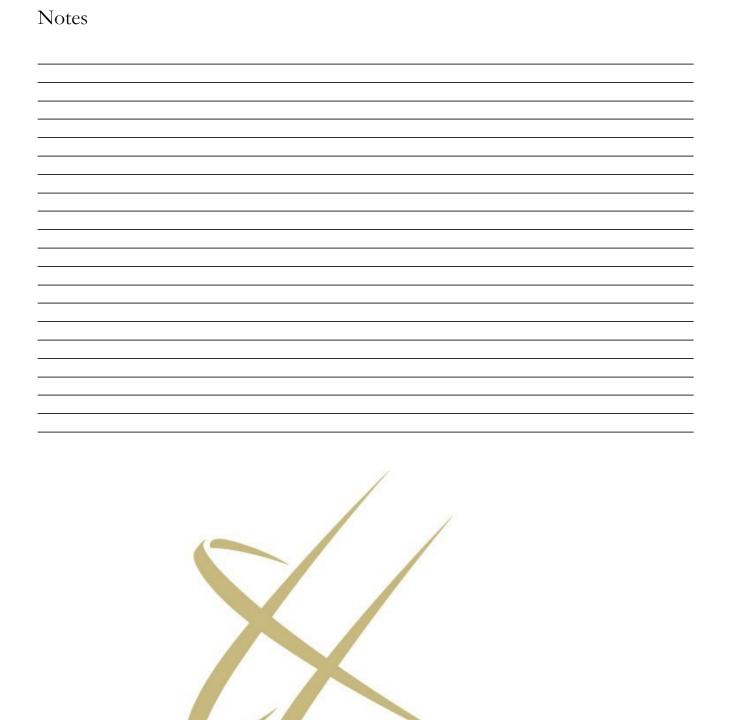
E. Consulting Agreements

Ownership Provisions: Work done by individuals as consultants to outside firms is presumed not to involve unreimbursed substantial use of university facilities, and the rights to intellectual property created under consulting agreements are retained by the outside firms or the individual as specified by the terms of the consulting agreement.

General Procedures

The creator of any intellectual property that is or might be owned by the university under this policy is required to make reasonably prompt written disclosure of the work to the university's provost, and to execute any document deemed necessary to perfect legal rights in the university and enable the university to file patent applications and applications for copyright registration when appropriate. This disclosure to the provost should be made at the time when legal protection for the creation is contemplated, and it must be made before the intellectual property is sold, used for profit, or disclosed to the public. Whenever legal protection for intellectual property is anticipated all persons engaged in such creative activity are encouraged to keep regular notebooks and records.

Whenever the university undertakes commercial development it shall do so, if possible, in a fashion that provides for the widest possible dissemination, avoiding suppression of inventions from which the public might otherwise benefit, providing for non-exclusive licensing at reasonable royalties, and giving consideration to more favorable or royalty-free licensing to non-profit charitable institutions, minority businesses or enterprises in developing countries.

The university's share of any proceeds under this policy will be used to reimburse the university for its expenses for commercial development of intellectual property. Any additional return to the university will be used to further the academic purposes of all disciplines of the university community.

Notes

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HARRISBURG
UNIVERSITY
OF SCIENCE AND TECHNOLOGY

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