INFORMATION TECHNOLOGY (BA/MS)

The BA/MS Information Technology program is an accelerated program giving students the opportunity to pursue admission to and begin classes for the MS Information Technology while an undergraduate student. This program reduces the total number of courses needed and the total time needed for the combined degrees. The BA is awarded by the School of Continuing and Professional Studies and the MS by The Graduate School.

Curriculum

Code	Title	Hours
Information Technology BS Major Courses		
COMP 170	Introduction to Object-Oriented Programming	3
COMP 271	Data Structures I	3
COMP 317	Social, Legal, and Ethical Issues in Computing	3
CPST 250	Foundations of Organizations	3
CPST 310	Accounting Principles and Application	3
CPST 291	Dynamic Programming Languages	3
CPST 325	Data Processing, Analysis, and Visualization	3
CPST 342	Introduction to Web Application Development	3
CPST 343	Software Development for Mobile Devices	3
CPST 345	Introduction to IT: Networking, Cloud & Security	3
CPST 349	Project Management	3
STAT 103	Fundamentals of Statistics	3
SCPS Courses		
CPST 200	Introduction to Degree Completion	3
CPST 201	Civic Identity and Development	3
CPST 397	Capstone	3
Core Requirements		
The number of hours remaining toward Core requirements can vary due to transfer credit.		
Mission Specific Requirements		
Mission specific requirements can vary from 0 to 15 credit hours based on your prior credit.		
General Elective Requirements		
Students may have some general elective coursework to complete if their transfer credit and remaining required hours (Core, mission specific, major, etc.) do not total 120.		
BA/MS Requirements		
Students may take up to 9 credit hours of 400 level courses required for the MS Information Technology while an undergraduate student. The three graduate courses, taken during the students' senior year will count toward the degree requirements for both the undergraduate and graduate degree.		
COMP 417	Social and Ethical Issues in Computing	
COMP 422	Software Development for Wireless and Mobile Devices	
COMP 477	IT Project Management	
Information Technology MS Requirements		
COMP 417	Social and Ethical Issues in Computing	3
Select Three Courses in Track		9
Data Management Track		
COMP 405	Database Administration	
COMP 406	Data Mining	
COMP 425	Rapid Applications Development	
COMP 453	Database Programming	
COMP 488	Computer Science Topics	
Technology Management Track		
COMP 403	Operations Management	
COMP 404	Organizational Development	
COMP 420	Software Systems Analysis	
COMP 477	IT Project Management	
IT Security Track		
COMP 401	Computer Security	
COMP 440	Computer Forensics Investigations	
COMP 447	Intrusion Detection and Computer Forensics	
COMP 448	Network Security	
COMP 449	Wireless Networking and Security	
Enterprise Networking Track		
COMP 443	Computer Networks	
COMP 448	Network Security	
COMP 449	Wireless Networking and Security	
COMP 451	Enterprise Networking	
Select six (6) graduate level COMP electives		18
Total Hours		**75**

Students in the BA/MS program are permitted to take up to 9 credit hours of 400-level courses that would apply toward their MS program requirements while completing their undergraduate degree. If you have general elective hours to satisfy for your undergraduate degree, your 400-level courses can be courses taken in addition to your undergraduate major courses. Additionally, there are three 400-level courses that can be applied both toward your BA and MS Information Technology program requirements:

- COMP 417 Social and Ethical Issues in Computing
- COMP 422 Software Development for Wireless and Mobile Devices
- COMP 477 IT Project Management

The following are required to complete the BA/MS dual degree program:

- Successful completion of the BA Information Technology within the School of Continuing & Professional Studies.
- 30 credit hours of 400-level graduate courses, including those counted while an undergraduate, completed with a GPA of 3.0 or higher.

Please note only 400-level courses will apply toward graduate requirements. Additionally, a student with credit for a 300-level COMP course that has an equivalent 400-level COMP course may not take the 400-level course for separate credit. Example: COMP 317 and COMP 417 are equivalent courses and credit can only be earned once.

Suggested Sequence of Courses

The School of Continuing and Professional Studies provides a high-touch advising model in order to incorporate the professional and educational outcomes of the student as well as any transfer credit accepted. In order to provide students with maximum flexibility in their education and because everyone's academic background will vary, advisors will work directly with students to determine an appropriate sequence of courses

starting at admission into their respective program based on their needs and expected time to completion.

Students in BA Information Technologyprogram will be able to:

- Apply a structured approach to solving problems on a computer; create algorithms for solving problems and implement solutions to problems using a programming language.
- Identify elementary data structures, describe their implementation and choose an appropriate data structure to solve a given problem; evaluate algorithms to select from a range of possible options, provide justification for that selection, and implement the algorithm in a particular context.
- Design, implement, test, and debug a program that uses each of the following fundamental programming constructs: basic computation, variables, expressions, I/O, standard conditional and iterative structures (loops), the definition of functions, parameter passing, and recursion.
- Describe principles of object-orientation (abstraction, delegation, inheritance, and polymorphism) and basic design patterns; practice programming with mainstream object-oriented languages such as C++ or Java.
- Apply a variety of strategies to the testing and debugging of simple programs; construct, execute and debug programs using a modern IDE and associated debugging tools; construct and debug programs using the standard libraries available with a chosen programming language.
- Evaluate the advantages and disadvantages of dynamic languages, versus static typing. Practice programming in Python or some other dynamic language, such as Ruby or PHP.
- Organize data in ways to emphasize relationships, write simple programs to process, visualize and graphically display data, mine data for patterns, and design web interfaces to data.
- Apply the relational model to solving real world problems and implement those models using SQL on standard DBMS platforms and to use a declarative query language (SQL) to elicit information from a database.
- Analyze laws and issues in areas such as privacy, encryption, freedom of speech, copyrights and patents, computer crime, and computer/software reliability and safety; assess philosophical perspectives related to Ethics and the basics of the U.S. legal system; and identify ethical issues that arise in information technology and determine how to address them technically and ethically.
- Make informed and strategic decisions in a complex work environment; apply quantitative analysis to business problems; and impact organizational goals through project management strategies

Students in the MS Information Technology program will gain familiarity with the broad outlines of computer technology and will gain specialization in one of the track areas (Data Management, Technology Management, IT Security and Enterprise Networking).