



University of Maryland University College

**Baccalaureate Degree Program in Computer Studies
Department of Computer Information Systems and Technology**

PROGRAM ASSESSMENT PLAN
Program Outcomes and Learning Assessment Criteria

Summer 2007

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PROGRAM OVERVIEW

The Computer Studies major provides a flexible and coherent program of study integrating courses from several of the specialized computer and information fields. The interdisciplinary approach helps prepare students for a variety of entry-level and mid-level technical and management positions with the information technology field in government and industry. Graduates find employment as Internet programmers, Web designers, Web site administrators, desktop application specialists, and help desk managers.

The Computer Studies minor complements the skills the student gains in his or her major discipline by providing a study of the principles and techniques used in developing computer-related solutions to practical problems, including applications integration, print and Web design, and visual programming.

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PROGRAM OF STUDY

The program of study for the Baccalaureate Degree Program in Computer Studies is as follows:

GENERAL EDUCATION REQUIREMENTS

| | |
|--------------------------------------|-----------------|
| Communications | 12 credit hours |
| Arts and Humanities | 6 credit hours |
| Behavioral and Social Sciences | 6 credit hours |
| Biological and Physical Sciences | 7 credit hours |
| Mathematics | 3 credit hours |
| Interdisciplinary or Emerging Issues | 7 credit hours |

CROSS-CURRICULAR PERSPECTIVE REQUIREMENTS

| | |
|----------------------------------|----------------|
| Historical Perspective | 3 credit hours |
| International Perspective | 3 credit hours |
| Civic Responsibility Perspective | 3 credit hours |

REQUIRED COURSES

| | | |
|-------------------------|--|----------------|
| IFSM 201 or CMST 303 | Introduction to Computer-Based Systems Advanced Application Software | 3 credit hours |
| CMIS 102 | Introduction to Problem Solving and Algorithm Design | 3 credit hours |
| CMIS 141 or CMST 306 | Introductory Programming or Introduction to Visual Basic .Net Programming | 3 credit hours |
| CMIS 241 or CMST 340 | Data Structures and Abstraction Computer Applications in Management | 3 credit hours |

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PROGRAM OF STUDY (continued)

| | | |
|-------------------------|---|----------------|
| IFSM 300 or CMST 340 | Information Systems in Organizations Computer Applications in Management | 3 credit hours |
| COMM 393/393X | Technical Writing | 3 credit hours |
| CMST 306 | Introduction to Visual Basic .NET Programming | 3 credit hours |
| CMIS 345 | Object-Oriented Design and Programming | 3 credit hours |
| CMST 416 | Advanced Visual Basic NET Programming | 3 credit hours |
| CMST 385 | Internet and Web Design | 3 credit hours |
| CMST 386 | Advanced Internet and Web Design | 3 credit hours |
| CMST | Any CMST Course | 3 credit hours |
| IFSM | Any IFSM Course | 3 credit hours |

MINOR AND ELECTIVE COURSES

49 credit hours

Minor and/or elective courses are to be taken in the last 60 hours along with required major courses. Refer to the current UMUC School of Undergraduate Studies Catalog for the minor and/or elective course requirements.

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DEVELOPMENT OF PROGRAM OUTCOMES

The table below identifies the curricular influences that support the program outcomes specific to the Baccalaureate Degree Program in Computer Studies.

| SOURCES/RESOURCES PROVIDING CURRICULAR FOUNDATION FOR PROGRAM OUTCOMES Baccalaureate Degree Program in Computer Studies | | |
|--|---|---|
| SOURCE | DESCRIPTION | WEB ADDRESS OR DOCUMENT NAME (if applicable) |
| Core Learning Areas of the UMUC School of Undergraduate Studies | <p>All UMUC degree programs are required to imbed identified Core Learning Areas into the program of study. The Core Learning Areas are:</p> <ul style="list-style-type: none"> • Written Communication (COMM) • Technology Fluency (TECH) • Information Literacy (INFO) • Quantitative Literacy (QUAN) • Critical Thinking (THIN) • Scientific Literacy (SCIE) <p>The expanded definition for each Core Learning Area was considered in creating the respective program outcome.</p> | UMUC <u>Institutional Plan for the Assessment of Student Learning</u> |
| Working Groups | Faculty members from UMUC-Adelphi and UMUC-Asia and UMUC-Europe administrators provide input into changes in the major. | |
| External Reviewer | An external reviewer was charged to provide consultation in the review of degree coursework. | CSTS Academic Program Review (2005) |
| World Wide Web Consortium | The World Wide Web Consortium provides current technology guidelines for web development and related issues, such as programming standards and accessibility. | <u>http://www.w3.org/</u> |

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PROGRAM OUTCOMES

The program outcomes specific to the Baccalaureate Degree Program in Computer Studies are delineated below. The program outcomes describe the expectations for all graduates of the Baccalaureate Degree Program in Computer Studies.

| CORE LEARNING AREA | PROGRAM OUTCOMES Baccalaureate Degree Program in Computer Studies |
|---------------------------|---|
| | |
| COMM | Create written communication appropriate for the purpose and which meets standards of style and grammatical correctness.+ |
| | Design accurate and precise written documentation in all phases of the system development life cycle from preliminary feasibility studies to end-user documentation and manuals.* |
| TECH | Evaluate technological concepts related to computers and components of information systems.+ |
| | Incorporate relevant theory, techniques, languages, and systems in developing computer-related solutions to practical problems.* |
| INFO | Address recognized research needs by retrieving, evaluating, and using information appropriately.+ |
| | Research information in order to provide a critical analysis of alternatives for making informed decisions related to technology.* |
| QUAN | Apply mathematical and numerical reasoning skills.+ |
| | Apply algorithmic concepts and problem-solving skills to write computer programs for applications and the Web.* |
| THIN | Identify the potential for applying computer-based solutions to solve problems, perform tasks, and identify the advantages of such solutions.* |
| SCIE | Identify key concepts and principles of natural sciences.+ |
| | Design computer-based solutions based on analysis and requirements.* |

+ Denotes a program outcome specific to core skills, knowledge, and values gained from completion of the general education requirements. This program outcome is common across all UMUC baccalaureate degree programs.

* Denotes a program outcome specific to core skills, knowledge, and values gained from completion of requirements in the baccalaureate degree program. This program outcome is unique to each UMUC baccalaureate degree program.

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ALIGNMENT OF PROGRAM OUTCOMES WITH LEARNING OBJECTIVES AND ASSESSMENT METHODS

The following grid aligns the program outcomes of the Baccalaureate Degree Program in Computer Studies with: 1) learning objectives from the designated program coursework and 2) specific methods used to assess student learning within the degree program.

| CURRICULAR ALIGNMENT Baccalaureate Degree Program of Computer Studies | | | |
|--|---|---|--------------------------------|
| CORE LEARNING AREA | PROGRAM OUTCOMES | LEARNING OBJECTIVE(S) AND CORRELATING COURSEWORK | METHOD(S) OF ASSESSMENT |
| COMM | Create written communication appropriate for the purpose and which meets standards of style and grammatical correctness.+ | Plan and write a research-based essay that makes effective use of resources found in databases available from UMUC's Office of Information and Library Services as well as resources located through Web search engines. (WRTG 101) | Research Paper |
| | | Research, compile, and document relevant, credible information and use it to support ideas presented in your writing. (WRTG 393) | Research Paper |
| | | Collect, select, analyze, interpret, and organize data, and use it appropriately in business communications, including a long formal report. (WRTG 394) | Research Paper |
| | | Conduct a systematic audience analysis and apply it to a report, essay, or research paper. (WRTG 391) | Research Paper |
| | Design accurate and precise written documentation in all phases of the system development life cycle from preliminary feasibility studies to end-user documentation and manuals.* | Using written materials and presentations, demonstrate effective collaboration on team research and study projects. (CMST 340) | Other: Group Research Paper |

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| CURRICULAR ALIGNMENT | | | |
|---|--|---|--------------------------------|
| Baccalaureate Degree Program of Computer Studies | | | |
| CORE LEARNING AREA | PROGRAM OUTCOMES | LEARNING OBJECTIVE(S) AND CORRELATING COURSEWORK | METHOD(S) OF ASSESSMENT |
| TECH | Evaluate technological concepts related to computers and components of information systems.+ | Analyze issues faced by information system professionals, including security, ethical, and privacy problems. (IFSM 201) | Exam (Course/Chapter) |
| | Incorporate relevant theory, techniques, languages, and systems in developing computer-related solutions to practical problems.* | Assess your abilities to design and develop a Web page using various tools and methodologies such as HTML. (CMST 385) | Other: Web Design Project |
| INFO | Address recognized research needs by retrieving, evaluating, and using information appropriately.+ | Select relevant print and electronic sources to answer research questions. (LIBS 150) | Exam (Course/Chapter) |
| | Research information in order to provide a critical analysis of alternatives for making informed decisions related to technology.* | Describe the power and payoff that computer-based information systems can provide to business, government, and academic entities in the execution of their work processes. (CMST 340) | Other: Group Research Paper |
| QUAN | Apply mathematical and numerical reasoning skills.+ | Solve linear, quadratic, higher-order polynomial, fractional, radical, exponential, logarithmic, and absolute value equations and inequalities. (MATH 107) | Exam (Course/Chapter) |
| | | Develop problem solving skills. (MATH 105 or MATH 106) | Exam (Course/Chapter) |
| | Apply algorithmic concepts and problem-solving skills to write computer programs for applications and the Web.* | Plan and devise methods and procedures for requirement definition, program design, coding, and debugging, utilizing VB.NET. (CMST 306) | Other: Programming Project |
| THIN | Identify the potential for applying computer-based solutions to solve problems, perform tasks, and identify the advantages of such solutions.* | Create, compile, and execute simple programs written in a modern object-oriented language. (CMIS 102) | Other: Programming Project |

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| CURRICULAR ALIGNMENT | | | |
|---|--|--|--------------------------------|
| Baccalaureate Degree Program of Computer Studies | | | |
| CORE LEARNING AREA | PROGRAM OUTCOMES | LEARNING OBJECTIVE(S) AND CORRELATING COURSEWORK | METHOD(S) OF ASSESSMENT |
| SCIE | Identify key concepts and principles of natural sciences. + | Recognize the differences and the interrelationships among physics, chemistry, the earth sciences, and astronomy. (NSCI 100) | Exam (Course/Chapter) |
| | | Explain the significance of DNA in determining the composition, characteristics, reproduction, and behavior of an organism. (BIOL 101) | Exam (Course/Chapter) |
| | Design computer-based solutions based on analysis and requirements.* | Plan and devise methods and procedures for requirement definition, program design, coding, and debugging, utilizing VB.NET. (CMST 306) | Other: Programming Project |

+ Denotes a program outcome specific to core skills, knowledge, and values gained from completion of the general education requirements. This program outcome is common across all UMUC baccalaureate degree programs.

* Denotes a program outcome specific to core skills, knowledge, and values gained from completion of requirements in the baccalaureate degree program. This program outcome is unique to each UMUC baccalaureate degree program.