

Acalog ACMS™ 2014-2015 Undergraduate (WORKING DRAFT)

Computer Science - Applied Major

Revised Program, effective Winter 2014

Successful completion of this major satisfies one of the requirements for graduation with a bachelor of science or bachelor of arts degree with a major in computer science. Graduates will be able to pursue advanced graduate degrees. The applied computer science major offers a mix of practice and theory that prepares students for career employment in computer science fields such as systems programming and analysis, software development and maintenance, as well as applications programming.

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General Education Requirements:

For specific requirements refer to the [General Education Program](#).

Additional Requirements: 11 hours

- [MATH 120 - Calculus I \(Gen Ed Area II\)](#) 4 hrs
- [MATH 205 - Mathematical Structures for Computer Science](#) 4 hrs

- [MATH 360 - Statistical Methods](#) 3 hrs

Major Requirements: 36 hours

Required Courses: 26 hours

- [COSC 111 - Introduction to Programming](#) 3 hrs
- [COSC 112 - Introduction to Programming Online Lab](#) 1 hr
- [COSC 211 - Programming Data Structures](#) 3 hrs
- [COSC 212 - Programming Data Structures Online Lab](#) 1 hr
- [COSC 221 - Computer Organization I](#) 3 hrs
- [COSC 231 - Internet-based Computing](#) 3 hrs
- [COSC 311 - Algorithms and Data Structures](#) 3 hrs
- [COSC 314 - Computational Discrete Structures](#) 3 hrs
- [COSC 341 - Programming Languages](#) 3 hrs
- [COSC 481W - Software Engineering and Senior Project \(Gen Ed Area I, W\)](#) 3 hrs

Restricted Elective Courses: 12 hours

Choose 4 courses from the following:

- [COSC 315 - Symbolic Computing](#) 3 hrs
- [COSC 321 - Computer Organization II](#) 3 hrs
- [COSC 374 - Applied Cryptography](#) 3 hrs
- [COSC 405 - Switching Theory](#) 3 hrs
- [COSC 421 - Systems Programming](#) 3 hrs
- [COSC 422 - Introduction to Microprocessors](#) 3 hrs
- [COSC 423 - Computer Operating Systems](#) 3 hrs
- [COSC 436 - Web Programming](#) 3 hrs
- [COSC 439 - Computing Network Principles](#) 3 hrs
- [COSC 444 - Foundations of Automata and Languages](#) 3 hrs
- [COSC 445 - Compiler Construction](#) 3 hrs
- [COSC 456 - Computer Graphics](#) 3 hrs
- [COSC 457 - Computer Game Programming](#) 3 hrs
- [COSC 461 - Heuristic Programming](#) 3 hrs
- [COSC 471 - Database Principles](#) 3 hrs

Writing Intensive Course

Each student must choose a writing intensive course as part of major completion requirements. Consult your advisor for course options.

Minor Requirements:

This program requires a minor. Please contact your program adviser for a list of possible minors.

Program Total:

Students must earn a minimum total of 124 credits at the 100-level or above.

Critical Graduation Information:

The following are minimum requirements for all bachelor's degrees awarded by Eastern Michigan University. Some majors and minors require more than the minimum in one or more of the areas below; students are urged to consult the online catalog for the requirements of their particular programs.

- Earn a minimum total of 124 credits at the *100-level and above*. **Courses with numbers below 100 will not be counted toward this degree requirement. At most 8 credit hours of physical education (PEGN) activity courses will be counted toward this requirement.**
- Meet the requirements of the General Education program (see information below).
- Earn a minimum of 60 credits from a four-year college or university; **courses taken at community colleges cannot be used to meet this requirement.** (Some formal program-to-program articulation agreements modify this requirement. See specific agreements for details.)
- Earn a minimum of 30 credits from courses taken at EMU.
- Complete 10 of the last 30 hours for the degree from courses taken at EMU.
- Have a minimum of 30 *unique* credit hours in their major and 20 *unique* credit hours in their minor for a total of at least 50 unique credit hours between them. Some majors that require 50 or more hours themselves do not require a minor; students should check requirements of the selected major in the undergraduate catalog to see if a minor is required.
- Not more than 60 credit hours in one subject area (prefix) may be applied towards the minimum of 124 credit hours required for a bachelor's degree.
- Earn the minimum number of credits in 300-level and above courses in each major and minor as specified below - these credits must be earned in distinct courses, that is, no course can be used to fulfill this requirement in more than one major or minor.
 - Earn a minimum of 6 credits in 300-level or higher courses at EMU in each minor
 - Earn a minimum of 9 credits in 300-level or higher courses at EMU in each major that requires a minor.
 - Earn a minimum of 15 credits in 300-level or higher courses at EMU in each major that does not require a minor
- Transfer credit will be awarded for courses taken at colleges and universities that are accredited by one of the recognized regional accrediting bodies only if the courses are college-level (equated to 100-level or above at EMU) and the student earned a "C" (or 2.0 on a 4 point scale) or better. Transfer credit may be awarded on a case-by-case basis for college-level courses in which a "C" (2.0) or better was earned at institutions outside the U.S. or at non-accredited U.S. institutions; the internal review of such courses is coordinated by the Office of Admissions, and additional documentation may be required.
- Earn a minimum cumulative GPA of 2.0 in courses taken at EMU order to graduate. In addition, a minimum GPA of 2.0 must be earned in courses taken at EMU in each major and minor. (Note: some

programs may require a higher GPA - check with your program advisor.)

General Education Requirements:

EMU's General Education Program requires students to choose from a menu of approved courses in several different areas do not assume that other courses in the same department or with similar names will fulfill these requirements. A detailed description of General Education requirements is available on the General Education section of the catalog: [General Education](#)

- For Students who began their undergraduate program at EMU in Fall 2007 or later or who have elected to follow the current ("new") General Education Program, follow the "For Students" link under the *Current Program* heading.
- For Students who began their undergraduate program at EMU before Fall 2007 and who have elected to follow the Pre-2007 General Education Requirements, follow the "General Education Program Prior to Fall 2007 (pdf file)" link under the *Program Prior to Fall 2007* heading. ***Please note that students who wish to graduate under pre-2007 General Education requirements must graduate by August 2014; those who have not completed all degree requirements by that time will need to satisfy the current (Fall 2007) General Education requirements.***

Students who transferred to EMU may have modified general education requirements based on MACRAO or articulation agreements; consult your academic advisor for additional information.

University Information: Consult the online catalog at catalog.emich.edu.
