The department offers degrees in both Mathematics and Computer Systems. The Mathematics program offers a degree in Mathematics and a degree in Mathematics with secondary education certification. The Computer Systems program offers a degree in Computer Information Systems with concentrations in Management Information Systems, Computer Information Systems or Web Information Systems.

One goal of the Mathematics program is to provide a student with the knowledge essential to the pursuit of a career in government, industry, commerce or education, or for entrance into graduate school for further study. Graduates of the Mathematics department have pursued careers as teachers, actuaries, statisticians, researchers, computer professionals, medical doctors, college professors and lawyers. A second goal of the Mercyhurst College Mathematics program is to impart to its students an appreciation for the beauty, power and usefulness of mathematics.

The Computer Systems (CS) program prepares students to function effectively in technical and/or management positions in all sectors of business, government, industry and non-profit organizations. A well-balanced curriculum of computer, mathematics and liberal arts courses enables the students to assume responsible roles as systems analysts, software programmers, web production specialists, data base administrators, network and workstation specialists, and information systems managers. The students' career prospects are strengthened by their on-the-job internship experience. The Computer Systems program offers many attractive benefits, such as excellent internship placements, history of successful career placement, excellent student/faculty ratio, and state-of-the-art facilities, including a computer lab specifically configured for CS majors and minors.

**MATHEMATICS DEGREE REQUIREMENTS (BACHELOR OF ARTS)**

<table>
<thead>
<tr>
<th>Mathematics</th>
<th>Computer Systems</th>
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</thead>
<tbody>
<tr>
<td>Math 170 Calculus I</td>
<td>Math 260 Applied Mathematics</td>
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<tr>
<td>Math 171 Calculus II</td>
<td>Math 265 Transition to Advanced Mathematics</td>
</tr>
<tr>
<td>Math 233 Calculus III</td>
<td>Math 280 Modern Algebra</td>
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<tr>
<td>Math 150 Linear Algebra</td>
<td>Math 290 Probability Theory</td>
</tr>
<tr>
<td>Mis 126 Programming I</td>
<td>Math 291 Statistical Analysis</td>
</tr>
<tr>
<td>Math 235 Operations Research</td>
<td>Math 370 Advanced Calculus</td>
</tr>
<tr>
<td>Math 240 Differential Equations</td>
<td>Mis 226 Programming II or</td>
</tr>
<tr>
<td>Math 250 Numerical Analysis</td>
<td>Math 400 Topics in Math or Internship/Co-op</td>
</tr>
</tbody>
</table>

**MATHEMATICS WITH SECONDARY EDUCATION CERTIFICATION**

Mathematics students seeking certification in secondary education receive the major in mathematics along with certification in secondary education. The course requirements are the same as that of the mathematics major with the exception that Math 245 Geometry/Education replaces Math 235 Operations Research and Math 300 Methods in Secondary Education Mathematics is required and replaces the Mis 226 Programming II.

A **minor** in mathematics is available for students including those majoring in elementary education.

Recent graduates of our mathematics program work as actuaries, teachers, statisticians, researchers, computer professionals, medical doctors, college professors and lawyers. Mercyhurst College mathematics graduates have been employed by American Express, Bell Laboratories, PNC Bank, Eastman Kodak, General Electric, IBM, Erie Insurance, Boeing, US Steel, and Ohio Power among numerous other companies.

**Further information** can be found on the department maintained web server [math.mercyhurst.edu](http://math.mercyhurst.edu)

Additional information is available by contacting the admission office or a member of the department. Mercyhurst College’s web site is [www.mercyhurst.edu](http://www.mercyhurst.edu) and admission’s e-mail is [admissions@mercyhurst.edu](mailto:admissions@mercyhurst.edu)
COMPUTER SYSTEMS MAJOR (BACHELOR OF ARTS)

Students may choose one of three available tracks or paths of study: the Computer Information Systems (CIS) track, which includes only computer and mathematics courses and exposes the student to many facets of the field, such as operations, programming, systems analysis, and network and database management; the Management Information Systems (MIS) track, which requires some courses in business in addition to computer and mathematics offerings and is oriented toward the application of the computer to business; and the Web Information Systems (WIS) track, which prepares students in internet programming, ecommerce, database management, and web development.

COMPUTER SYSTEMS MAJOR

CORE
Mis 110 Advanced Computer Applications
(Miss 110 Advanced Computer Applications
(if needed)
Math 111 Precalculus I or Math 170 Calculus I
or Math 160 Business/Applied Calculus
Mis 126 Programming I
Mis 140 Computer Operations
Mis 125 Visual Basic Programming I
Mis 225 Visual Basic Programming II
Mis 350 Data Base Management
Math 109 Statistics
Mis 260 Networks
Mis 302 Information Systems Analysis and Design
Mis 475/495 Internship/Co-op/Senior Project

CONCENTRATIONS

MANAGEMENT INFORMATION SYSTEMS
Acct 101 Principles of Accounting I
Acct 102 Principles of Accounting II
Fin 350 Financial Management
Mis 170 E-commerce
Mis Elective

COMPUTER INFORMATION SYSTEMS
Math 170 Calculus I
Math 171 Calculus II
(No Statistics required)
Math 150 Linear Algebra
Math 235 Operations Research
Mis 180 Operating Systems/Linux
Mis 226 Programming II
Mis 280 Internet Programming

WEB INFORMATION SYSTEMS
Mis 170 E-commerce
Mis 180 Operating Systems/Linux
Mis 270 Web Development
Mis 280 Internet Programming
Mis 380 Internet Programming II

Recent graduates have been hired as web site managers, programmers, network administrators, database managers, and information technology administrators. Typical hiring firms include banks, insurance companies, web design companies, health care systems, government agencies, and businesses that maintain information systems.

Two computer labs are maintained by the Mathematics and Computer Systems department. The computers have Microsoft Windows XP, Microsoft Office 2003, Visual Studio.NET, and SQL. The advanced lab computers also boot into the Linux operating system. Several other software development packages such as MySQL, php, perl, and apache are available. The symbolic algebra computation systems of Derive and Maxima, the statistical package R and various other programs for mathematics are available in the labs.

Students enrolled as a major or minor in mathematics or computer systems can obtain Microsoft operating systems, Visual Studio.NET, and several other Microsoft products from the department for free.

Mercyhurst E-Commerce Institute is an extension of the Mercyhurst College service learning program and the college’s Mathematics and Computer Systems department. The Mercyhurst College E-Commerce Institute (MEI) seeks to give businesses and service organizations a greater and better presence on the web.

Faculty
Chairperson: Dr. Donald Platte
Professors: Barbara Behan, Ph.D.; Donald Platte, Ph.D.; Charles Redmond, Ph.D.
Assistant Professors: Irene Brown, M.S., M.A.; Roger Griffiths, Ph.D.; Audrey Haag, MBA;
Patrick Kelly, M.A.
Instructors: John Byrtus, MBA; Hemangini Deshmukh, M.S.; Leslie Soltis, M. Ed.
Lecturer: James Feeney, M.S.