SOFTWARE ENGINEERING (MS)

The MS in Software Engineering provides students with marketable skills in methodologies, techniques, and tools of software engineering. The program encompasses the entire life-cycle of software development including requirements, analysis, design, construction, testing, and project management. Emphasis is placed on current and emerging technologies for engineering large and complex distributed software systems. According to the US Bureau of Labor Statistics, software engineering has been among the fastest growing IT professions in the US.

Concentrations

Software Development Concentration
This concentration addresses the foundations, methodologies, and tools for developing high quality large-scale software systems, with an emphasis on the technical issues of software development.

Software Architecture Concentration
This concentration addresses the management and design of large-scale software systems.

Real-Time Game Systems Concentration
This concentration addresses the foundations, methodologies, and tools for developing large-scale computer games and entertainment software systems.

Entrepreneurship and Technology Leadership Concentration
This concentration offers students with strong background in software development and a keen interest in business the opportunity to become entrepreneurs or business leaders in the software development industry.

Degree Requirements

Course Requirements
No Introductory Course may be substituted for any other course at any level.

Introductory Courses
Introductory courses may be waived for any of the following conditions:

- The student has the appropriate course work to satisfy an Introductory Course.
- The student has appropriate and verified professional experience to satisfy an Introductory Course.
- If an exam is available, the student passes a Graduate Assessment Examination (GAE) in the Introductory Course area.

Learning Outcomes

Students will be able to:
- Correctly create a model of the structure and behavior of a software system.
- Design and implement, in a programming language, an executable solution to a given problem using common software principles and best practices.
- Apply appropriate software testing techniques and evaluate the quality of a software product at module, integration, and system granularity levels.
- Select and adapt suitable elements from among conventional and evolving software development life-cycle processes and apply the resulting process to a software project.
- Collaborate in teams to develop a significantly sized software system from conceptualization to completion.
- Communicate effectively design and development decisions through written and graphical demonstration.

Program Requirements

<table>
<thead>
<tr>
<th>Program Requirements</th>
<th>Quarter Hours</th>
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</thead>
<tbody>
<tr>
<td>Introductory Courses</td>
<td>0-24</td>
</tr>
<tr>
<td>Degree Requirements</td>
<td>48</td>
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<tr>
<td>Total hours required</td>
<td>48-72</td>
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</table>

Students with a GPA of 3.9 or higher will graduate with distinction.

Concentrations, tracks and specializations provide focus to the degree. In addition to any degree requirements, students are required to choose one of the following:

- Entrepreneurship and Technology Leadership Concentration, Software Engineering (MS) (https://catalog.depaul.edu/programs/software-engineering-ms/entrepreneurship-technology-leadership-concentration-software-engineering-ms/)
- Real-Time Game Systems, Software Engineering (MS) (https://catalog.depaul.edu/programs/software-engineering-ms/real-time-game-systems-software-engineering-ms/)
- Software Architecture Concentration, Software Engineering (MS) (https://catalog.depaul.edu/programs/software-engineering-ms/software-architecture-concentration-software-engineering-ms/)
Software Engineering (MS)

- Software Development Concentration, Software Engineering (MS)
  (https://catalog.depaul.edu/programs/software-engineering-ms/
   software-development-concentration-software-engineering-ms/)