Purdue Calumet Center for Innovation through Visualization & Simulation (CIVS) immersive theater.

# MASTER OF earn a SCIENCE DEGREE

# Modeling, Simulation and Visualization

Learn skills to increase efficiency, optimize processes and environments, and provide cost-effective solutions using 2D and 3D computerized environments, modeling, simulation and visualization.



GRADUATE STUDIES purduecal.edu/gradschool





Scan the QR code for more information about the interdisciplinary Master of Science Degree in Modeling, Simulation and Visualization or contact the degree administering unit:

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- EMAIL: msv@purduecal.edu
- WEB: purduecal.edu/techgrad

#### Interdisciplinary Master of Science Degree in Modeling Simulation

# Modeling, Simulation and Visualization

Before committing to a costly investment in an uncertain solution to increase productivity or solve a problem, business and industry may want to seek expertise from graduates of an innovative, **interdisciplinary** degree program at Purdue University Calumet.

Students with undergraduate education in science, technology, computer science, engineering, medical/ healthcare, and management may be interested in a Master of Science degree in Modeling, Simulation and Visualization (MSMSV). The MSMSV degree equips graduates with essential skills for professions which use modeling, simulation and visualization skills such as:

designers engineers

business

developers

software consultants

technologists

- computer scientists
- $\bullet$  transportation
- education
- marketing
- healthcare
- many others

Students in the program will have the opportunity to work with the **Center for Innovation through Visualization & Simulation (CIVS)** at Purdue Calumet. CIVS is a multidisciplinary center that combines advanced simulation techniques with 3-D visualization and virtual reality technologies. The Center emphasizes the application of state-of-the-art technologies to address complex real world problems and promotes innovation in areas such as economic development , energy, environment, education and training, healthcare, medicine, manufacturing, security and daily life.



#### Plan of Study (30 Credit hours)

#### 18 hours required core courses (6 courses)

- Unified Modeling Languages
- Simulation Techniques
- Visualization Techniques
- High Performance Computing
- Software Project Management
- Design and Analysis of Simulation Experiments

#### 9 credit hours of electives (3 courses)

A number of graduate level courses are available for use as electives; electives are approved by the student's graduate committee for inclusion in the plan of study.

#### 3 credit hours of directed project

- Directed MS Project\* (1 course taken in two phases)
- \* Students will work with CIVS on directed project Phase One - 1 credit hour—proposal Phase Two - 2 credit hours—final report/project

### **Basic Requirements**

Bachelor's degree from an accredited four-year college or university in any Science, Technology, Engineering or Mathematics (STEM) related areas. GPA of 3.0 or greater based on a 4.0 scale. If necessary, students may be required to take leveling courses after admission, to meet pre-requisites. Conditional admission may be available for students under a 3.0 GPA.

A student must meet the following pre-requisites:

1 Semester Object Oriented Programming (Sophomore level or above)

1 Semester Statistics/Probability (Sophomore level or above)

2 Semesters Calculus (Differential and Integral), **OR** 1 Semester discrete mathematics or numerical methods (Sphomore level or above)

TOEFL iBT\*: 77 (Reading 19, Listening 14, Speaking 18, Writing 18)

\*Additional requirement for non-native English speakers. IELTS and Pearson scores are also accepted

## **Application Deadlines**

#### International Students:

Fall: May 1Spring: October 1

Summer: March 1

#### **Domestic Students:**

For deadline info, contact Jody Kidd, Graduate Coordinator at 219-989-2966 or tech@purduecal.edu.