

# MS in Applied Mathematics and Computer Science

## Department of Computer and Information Sciences

### Indiana University South Bend

#### Goal:

This graduate degree is offered jointly by the *Department of Computer and Information Sciences* and the *Department of Mathematical Sciences* at IU South Bend. The goal of this program is to address the needs of people who already have work experience in technical or quantitative fields, people with undergraduate degrees in science or business, or people who simply wish to increase their level of skills and expertise in computing and applied mathematics.

#### Requirements:

The program will be tailored to individual student needs, and will consist of 33 credit hours, including course work and 9 hours of an optional thesis. A student wishing to have a concentration in one area must complete at least 21 credits in this discipline. Up to 6 credits can be taken as 400 level courses.

#### ◆ *Computer Science Courses:*

B503 - Algorithms Design and Analysis  
B538 - Networks and Distributed Computing  
B561 - Advanced Database Concepts  
B581 - Advanced Computer Graphics  
B551 - Elements of Artificial Intelligence  
B553 - Biomorphing Computing  
P536 - Advanced Operating Systems  
B524 - Parallel and Distributed Programming  
B541 - Hardware System Design I  
B565 - Software Engineering I  
B651 - Natural Language Processing  
B661 - Database Theory and Systems Design  
B665 - Software Engineering Management

#### ◆ *Mathematics Courses:*

M546 - Control Theory  
M551 - Markets & Asset Pricing  
M560 - Applied Stochastic Processes  
M565 - Analysis of Variance  
M562 - Stat. Design of Experiments  
M571 - Analysis of Numerical Methods I  
M572 - Numerical Analysis II  
M575 - Simulation Modeling  
M576 - Forecasting  
M577 - Operations Research

◆ *Thesis:* Students can complete a thesis for 9 credits.

#### Computer Science at IU South Bend?

◆ As the premier public institution of higher education in the region, our mission is to provide the highest quality education in the most enjoyable and friendly atmosphere possible. In pursuing this mission we work hard to attract the best and most qualified faculty and staff to our program. We also work hard to build and maintain up-to-date computer laboratories which are crucial to our program. Through our internship program for students, faculty consulting and volunteering, we interact regularly with our local industry so that we continually exchange ideas to the mutual benefit of both the business community and the university. Our goal is to bridge the gap between theories and concepts presented in the classroom and real life business and industry needs and practices.

#### What is the job outlook?

◆ There are excellent employment opportunities for our graduates. Almost every student and every alumnus of our program is gainfully employed. In our region, the average starting salary for our students is currently in the mid 40's. Nationally, salaries range from low 40's to upper 70's.

#### Why IUSB?

◆ IU South Bend is the only public university in the region (60 miles radius) equipped to offer quality graduate and undergraduate programs in computer science.  
◆ Our graduate class sizes average around 10 students, and almost never exceeding 15.  
◆ We have 9 full time faculty with Ph.D. degrees in computer science or closely related areas. Faculty research interests include Artificial Intelligence, Computer Graphics, Computer Networks, Algorithms, Database Systems.  
◆ The typical salary for our new graduates in the region is approximately \$40,000 to \$45,000.

#### Contact Information:

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