Department of Information Technology and Decision Sciences
2074 Constant Hall
(757) 683-3488
G. Steven Rhiel, Chair

Master of Science–Computer Science - Computer Information Systems
Li Xu, Graduate Program Director

The Department of Information Technology and Decision Sciences offers this degree program jointly with the Department of Computer Science; please see the entry under the Department of Computer Science (http://catalog.odu.edu/previous/2015-2016/graduate/collegeofsciences/computerscience) for degree requirements.

Graduate Certificate in Modeling and Simulation (M&S) for Business and Public Administration

Business applications constitute some of the earliest used simulation modeling, with some dating back over 50 years, and the literature of many businesses and social science disciplines is rich with both practical and theoretical usage of simulation. Recent developments in simulation, such as agent-based simulation and virtual worlds, open even avenues for M&S applicability. This certificate gives Strome College of Business graduate students an opportunity to develop competency in Modeling and Simulation.

Admission Requirements:
Admission to the certificate program requires a bachelor’s degree (or equivalent).

Program Requirements:
The Certificate requires four (4) three-hour courses for a total of twelve (12) credits. A basic simulation core of three credits is required, plus six credits of discipline-specific work, and three credit hours of elective. A 3.00 GPA for the four-course sequence is required for successful completion.

Strome College of Business M&S Certificate
MSIM 601 Introduction to Modeling and Simulation 3
BNAL 721/821 Simulation Modeling for Business Systems 3
BNAL 722/822 Agent-Based Simulation and Modeling 3
Select one of the following: * 3
BNAL 507 Advanced Management Science
BNAL 641 Supply Chain Management and Logistics
BNAL 712 Advanced Statistical Models in Business Research
ECON 625 Mathematical Economics
ECON 706/806 Econometrics I
ECON 707/807 Econometrics II
ECON 708/808 Econometrics III
IT 612 Knowledge Management
IT 651 Data Warehousing and Mining
IT 652 On-Line Analytical Processing (OLAP)
FIN 735/835 Portfolio Analysis
FIN 740 Futures and Options
MSCM 641 Supply Chain Management and Logistics
MKTG 625 Marketing Research Methods and Analysis

* Other classes may count as an M&S elective with permission of the certificate administrator.

Graduate Certificate in Business Analytics and Big Data

The graduate certificate in Business Analytics and Big Data is designed to give the students a background in some of the basic statistical and modeling/optimization tools used in business analytics. In addition the certificate provides a working knowledge of data bases and an introduction to the analysis of “big data.” This certificate program is designed for students to satisfy their elective requirements as part of the MBA program or it can be taken as a stand alone certificate program.

Admission Requirements
An appropriate undergraduate degree is required to be admitted to the Business Analytics and Big Data Certificate program.

Program Requirements
The award of this certificate is based upon the student’s successful completion of 15 credit hours as follows:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBA 600</td>
<td>Introduction to Statistics</td>
<td>1</td>
</tr>
<tr>
<td>BNAL 606</td>
<td>Statistics for Managers</td>
<td>2</td>
</tr>
<tr>
<td>BNAL 711</td>
<td>Multivariate Statistical Methods for Business</td>
<td>3</td>
</tr>
<tr>
<td>BNAL 515</td>
<td>Advanced Business Analytics/Big Data Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT 650</td>
<td>Database Management Systems</td>
<td>3</td>
</tr>
<tr>
<td>BNAL 507</td>
<td>Advanced Management Science</td>
<td>3</td>
</tr>
<tr>
<td>or BNAL 621</td>
<td>Simulation Modeling for Business Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Hours 15