Business Analytics

Programs

Bachelor of Science in Business Administration Programs

- Business Analytics with a Major in Business Analytics and Intelligence (BSBA) (http://catalog.odu.edu/undergraduate/business/business-analytics/business-analytics-intelligence-bsba/)
- Business Analytics with a Major in Business Analytics in Accounting (BSBA) (http://catalog.odu.edu/undergraduate/business/business-analytics/business-analytics-accounting-bsba/)
- Business Analytics with a Major in Business Analytics in Economics (BSBA) (http://catalog.odu.edu/undergraduate/business/business-analytics/business-analytics-economics-bsba/)
- Business Analytics with a Major in Business Analytics in Finance (BSBA) (http://catalog.odu.edu/undergraduate/business/business-analytics/business-analytics-finance-bsba/)
- Business Analytics with a Major in Business Analytics in Information Technology (BSBA) (http://catalog.odu.edu/undergraduate/business/business-analytics/business-analytics-information-technology-bsba/)
- Business Analytics with a Major in Business Analytics in International Business (BSBA) (http://catalog.odu.edu/undergraduate/business/business-analytics/business-analytics-international-business-bsba/)
- Business Analytics with a Major in Business Analytics in Management (BSBA) (http://catalog.odu.edu/undergraduate/business/business-analytics/business-analytics-management-bsba/)
- Business Analytics with a Major in Business Analytics in Maritime and Supply Chain Management (BSBA) (http://catalog.odu.edu/undergraduate/business/business-analytics/business-analytics-maritime-supply-chain-management-bsba/)
- Business Analytics with a Major in Business Analytics in Marketing (BSBA) (http://catalog.odu.edu/undergraduate/business/business-analytics/business-analytics-marketing-bsba/)

Minor Program

- Business Analytics Minor (http://catalog.odu.edu/undergraduate/business/business-analytics/business-analytics-minor/)

Courses

Business Analytics (BNAL)

BNAL 206 Business Analytics I (3 Credit Hours)
An introduction to methods of business analytics. Topics are concentrated in descriptive analytics, which include descriptive statistics, normal and binomial distributions, decision making under uncertainty and under risk, decision analysis incorporating sample information, sampling distributions and Central Limit Theorem, interval estimation, and hypothesis testing. Business and economic applications are emphasized. Computer software, as a tool for problem solving, is utilized where appropriate.
Prerequisites: A grade of C or better in MATH 162M or placement into a higher level math course

BNAL 306 Business Analytics II (3 Credit Hours)
Advanced descriptive and predictive analytics topics include advanced hypothesis testing, analysis of frequency data, correlation analysis, simple and multiple regression, and time series forecasting. Prescriptive analytics topics include linear programming formulation and managerial analysis, and distribution models. PERT/CPM models are also covered. Computer software is utilized throughout the course. Emphasis is on the interpretation of the various outcomes of the application of business analytics tools.
Prerequisites: MATH 200, BNAL 206 and a declared major in the University or permission of the Dean's Office

BNAL 367 Cooperative Education (1-3 Credit Hours)
Approval for enrollment and allowable credits are determined by the department and Career Development Services in the semester prior to enrollment.
Prerequisites: Junior standing and a declared major in the University or permission of the Dean's Office

BNAL 368 Internship (1-3 Credit Hours)
Approval for enrollment and allowable credits are determined by the department and Career Development Services in the semester prior to enrollment. (Qualifies as a CAP experience.)
Prerequisites: BNAL 306 and a declared major in the University or permission of the Dean's Office

BNAL 369 Practicum (1-3 Credit Hours)
Approval for enrollment and allowable credits are determined by the department CAP adviser and the Career Development Services in the semester prior to enrollment. Student participation in a professional work experience. (Qualifies as a CAP experience.)
Prerequisites: BNAL 206 and BNAL 306 and a declared major in the University or permission of the Dean's Office

BNAL 403/503 Data Visualization and Exploration (3 Credit Hours)
This course introduces students to concepts and processes, technologies, and methodologies that are commonly used in data visualization that an organization may use to enhance its descriptive, predictive, and prescriptive methods for making fact-based decisions.
Prerequisites: A grade of C or better in BNAL 306 or permission of the instructor

BNAL 405 Spreadsheet-Based Data Analysis for Decision Making (3 Credit Hours)
The spreadsheet has become one of the most widely used analytical tools in the modern business environment. This course covers spreadsheet (e.g., Microsoft Excel) capabilities and business applications, with a focus on the use of spreadsheets for modeling, data analysis, and business decision support. Topics include concepts such as functions, pivot table, macros, analytical utilities, database connections, and interactive interfaces. Modeling and analysis in several areas such as forecasting, investment, quality, and sales are covered.
Prerequisites: BNAL 306 with a grade of C or better

BNAL 407/507 Prescriptive Analytics of Management Science (3 Credit Hours)
Students are introduced to prescriptive analytics through formulation and solution of mathematical models, with a particular focus on optimization models. The business use of the models, as well as their limitations, is emphasized. Topics include linear, integer, non-linear programming, network models, genetic algorithms, decision analysis, and project management models.
Prerequisites: A grade of C or better in BNAL 306 and a declared major in the University or permission of the Dean's Office or the instructor

BNAL 415/515 Advanced Business Analytics/Big Data Applications (3 Credit Hours)
This course addresses advanced business analytics techniques and the application of such techniques to large data sets. Some alternative business analytics strategies are introduced. Descriptive, predictive, and prescriptive models are included. Topics covered in this course include data visualization and exploration, cluster analysis, and developing and calibrating predictive models for big data. Applications of multivariate, logistic, and probit regression to business analytics are discussed. Software packages such as SAS/JMP/SPSS may be used.
Prerequisites: A grade of C or better in BNAL 306 and a declared major in the University or permission from the Dean's Office

BNAL 432/532 Predictive Analytics for Business (3 Credit Hours)
Predictive analytics techniques for business. Applications include both shorter term forecasting for sales and operations management as well as forecasting for long term planning. Emphasis is on statistical methods to obtain and evaluate forecasts. Statistical models are implemented using standard software such as MINITAB, EXCEL, R, and/or Python.
Prerequisites: BNAL 306 and a declared major in the University or permission of the Dean's Office

BNAL 476/576 Simulation Modeling and Analysis for Business Systems (3 Credit Hours)
Simulation modeling is an integral part of the analytics revolution, enabling the creation of models that can represent the variability that exists in many real business systems. This course covers the theory and application of simulation modeling, with an emphasis on how simulation provides predictive and prescriptive analytics to support business decision-making. Topics include simulation fundamentals, the project life-cycle, model development, input and output analysis, verification and validation, and the presentation of a simulation study. We utilize a major commercial simulation software package for assignments and class projects.
Prerequisites: OPMT 303 with a grade of C or better and BNAL 306 with a grade of C or better, senior standing and a declared major in the University or permission of the Dean's Office

BNAL 495 Topics in Business Analytics (3 Credit Hours)
Selected advanced topics in decision sciences. Taught on an occasional basis. See the course schedule for the particular topic being taught each semester.
Prerequisites: Senior standing and a declared major in the University or permission of the Dean's Office

BNAL 497 Independent Study (1-3 Credit Hours)
Affords students the opportunity to undertake independent study under the direction of a faculty member.
Prerequisites: Permission of department