FLORIDA ATLANTIC UNIVERSITY

Graduate Programs—NEW COURSE PROPOSAL

<table>
<thead>
<tr>
<th>DEPARTMENT NAME: INFORMATION TECHNOLOGY &amp; OPERATIONS MANAGEMENT</th>
<th>COLLEGE OF: BUSINESS</th>
</tr>
</thead>
</table>

**Recommended Course Identification:**

Prefix: ISM  
Course Number: 6404  
Lab Code (L or C):  

**Effective Date (first term course will be offered):** FALL 2012

**Credits:** 3  
**Lecture:** Y  
**Grading:** Regular X  
**Textbook Information:** SEE ATTACHED SAMPLE SYLLABUS

**Course Description:** No more than 3 lines: An in-depth examination of Business Analytics (BA) methods of visualization, data mining, text mining, and web mining using various analytical tools is undertaken. Applications to smaller firms are investigated in a laboratory setting.

**Prerequisites:** Fully admitted graduate students

**Corequisites:**

**Other Registration Controls (Major, College, Level):**

**Minimum Qualifications Needed to Teach This Course:** Terminal degree in appropriate field

Other departments, colleges that might be affected by the new course must be consulted. List entities that have been consulted and attach written comments from each.

**Faculty Contact, Email, Complete Phone Number**

Dr. Robert Cerveny, cerveny@fau.edu, (561) 297-4008

**SIGNATURES**

Approved by:  
Department Chair:  
College Curriculum Chair:  
College Dean:  
UGPC Chair:  
Dean, Graduate Studies:

Date: 2/6/12  
2/10/12  
2/24/12

**SUPPORTING MATERIALS**

- Syllabus—must include course objectives.
- Written Consent—required from all departments affected.
- Go to: http://graduate.fau.edu/ugpc/ to download this form

* "Enforce" prerequisites or other registration controls adds these restrictions to the course schedule; students whose academic careers do not show these prerequisites or other details will not be able to register. When box is not checked, restrictions show in catalog description only.

Email this form and syllabus to Graduate Studies one week before the University Graduate Programs Committee meeting so that materials may be viewed on the UGPC website by committee members prior to the meeting.

FAUnewservGrad—Revised August 2006
COURSE TITLE/NUMBER, NUMBER OF CREDIT HOURS:

ISM 6404
Section 001
Advanced Business Analytics
3 credit hours

COURSE LOGISTICS:

<table>
<thead>
<tr>
<th>Term:</th>
<th></th>
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<tbody>
<tr>
<td>Class Location:</td>
<td></td>
</tr>
<tr>
<td>Time:</td>
<td></td>
</tr>
</tbody>
</table>

INSTRUCTOR CONTACT INFORMATION:

<table>
<thead>
<tr>
<th>Instructor:</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Office Address:</td>
<td></td>
</tr>
<tr>
<td>Office Hours:</td>
<td></td>
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<tr>
<td>Phone:</td>
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<td>FAX:</td>
<td></td>
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<tr>
<td>E-mail:</td>
<td></td>
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</tbody>
</table>

COURSE DESCRIPTION: An in-depth examination of Business Analytics (BA) methods of visualization, data mining, text mining, and web mining using various analytical tools is undertaken. Applications to smaller firms are investigated in a laboratory setting.

COURSE OBJECTIVES/STUDENT LEARNING OUTCOMES: ISM 6404, Advanced Business Analytics, is a 3 hour projects-based course that provides an in-depth understanding of Business Analytics (BA) methods of visualization, data mining, text mining, and web mining through the use of specific BA tools. It involves using such tools with publicly available real world business data sets to develop and present actionable analysis. It is further designed to give those with basic Excel knowledge, as well as those with more advanced Excel abilities, more of what organizations need and value for data mining, business analytics and reporting. Additional skills such as when and how to use pivot tables, macros, how to automate and integrate downloads of data into reports with one click, form creation, graphing, and the creation and use of simulation and decision support modeling are all are covered in a hands-on lab setting Using Excel 2010 and VBA. Business analytics as applied to smaller firms is investigated.

REQUIRED TEXTS:

Texts:


SPECIAL COURSE REQUIREMENTS:

Blackboard: You must use Blackboard to retrieve class notes, take tests, and to receive class e-mail from me. Go to http://blackboard.fau.edu to log in.

E-mail: Students wishing to send the instructor e-mail messages must include ISM 6930 in the subject line. It is your responsibility to check your e-mail frequently. E-mail from me will be sent to your FAU account. If you forward it to another account, you must make sure that is set up correctly.

Computer: You must have access to a computer running Excel 2010. FAU open computer labs are available for your use if necessary. There is a student version of the product available at a discount. Also, there is a trial version that is available from Microsoft.

Web Assist Course: This course will make use of the Blackboard Internet feature. Lecture material and homework assignments will be posted on Blackboard, with due dates. Grade information will also be found there. We will experiment with an occasional on-line session using Blackboard Collaborate. Additionally there will be occasional on-line discussion periods. The times of these discussion periods will be determined as the semester progresses.

PREREQUISITES: Fully admitted graduate students.

COURSE EVALUATION METHOD:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
</tr>
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<tbody>
<tr>
<td>Homework</td>
<td>30%</td>
</tr>
<tr>
<td>Class Participation</td>
<td>20%</td>
</tr>
<tr>
<td>Term Paper</td>
<td>15%</td>
</tr>
<tr>
<td>Exams</td>
<td>35%</td>
</tr>
</tbody>
</table>

Course Grading Scale:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>(93-100)%</td>
</tr>
<tr>
<td>A-</td>
<td>(90-92.99)%</td>
</tr>
<tr>
<td>B+</td>
<td>(87-89.99)%</td>
</tr>
<tr>
<td>B</td>
<td>(83-86.99)%</td>
</tr>
<tr>
<td>B-</td>
<td>(80-82.99)%</td>
</tr>
<tr>
<td>C+</td>
<td>(77-79.99)%</td>
</tr>
<tr>
<td>C</td>
<td>(73-76.99)%</td>
</tr>
<tr>
<td>C-</td>
<td>(70-72.99)%</td>
</tr>
<tr>
<td>D+</td>
<td>(67-69.99)%</td>
</tr>
<tr>
<td>D</td>
<td>(63-66.99)%</td>
</tr>
<tr>
<td>D-</td>
<td>(60-62.99)%</td>
</tr>
<tr>
<td>F</td>
<td>&lt; 60%</td>
</tr>
</tbody>
</table>

Student mastery of the concepts of the course will be demonstrated through the use of homework problems solved by the student, in class discussions of topics between the student and the instructor, in-class team presentations and a combination of in-class and take-home exams and a term paper.

POLICY ON MAKEUP TESTS, LATE WORK, AND INCOMPLETES:

Homework: Homework is to be turned in by 4:00 pm on Monday of the week assigned (see course content and tentative schedule attached). Late homework (homework turned in before the assignment has been discussed in class) will lose 10% of its value. Homework turned in after an assignment has been discussed in class returned and/or a solution posted will lose 75% of its original value.
Teams: Students will be divided into teams for portions of the course.

Class Participation: There will be a discussion of the materials contained in the Davenport text starting the week of 1/30. Two teams will be responsible for leading the discussion each week. One team will lead the discussion and the other will comment on their presentation. However, this is meant to be a class activity so all members of the class are expected to have read the material and be prepared to comment on it.

Each team is to use library resources and/or the internet to find at least two unique references concerning business intelligence/business analytics from different sources, analyze the articles and prepare a wiki page for each article. A second team will be assigned to edit the wiki for each article to insure completeness and readability. All students will be responsible for reading the wikis and participating in the class discussion over the articles, led by the team which created the Wiki. Articles must be substantive, i.e. an announcement of a new product or a new release about a product does not count. The team will turn in a copy of the article when each wiki is posted.

We will make use of structured walkthroughs to examine how code is used and developed as part of the class participation activities. Students will be responsible for leading this examination each time.

Term Paper: The term paper will be a research paper covering an area of business analytics of interest to the students. Each team will submit a brief outline of the area to be covered the week of 2/20. The paper itself is due the week of 4/23, when each team will present the results of their research.

Exams and Exam Make-Up Policy: There will be two exams during the semester. The last one (the final) is cumulative in this course. These exams will be taken on-line during the time periods noted in the course content outline.

A student who is unable to take an exam due to an emergency must inform me of that fact on or earlier than the day of the exam (except for extreme cases, i.e., you are in a coma in the hospital due to a car accident suffered on the way to the exam) and arrange for a make-up exam before the graded exam is returned to the class. Any student requiring a make-up will have to document his/her excuse (e.g., a letter from a physician written on the physician’s letterhead stating the nature of illness and its severity). Exams missed without prior approval (or documented proof that the unapproved absence was unavoidable) cannot be made up. In no event will a make-up be given after the graded exam is returned to the class, which is usually the week after the exam is scheduled.

Incompletes: University policy states that an incomplete may be given only if a student has a passing grade in the course. An incomplete is only meant for students who are unable to complete the course due to severe hardships beyond their control. It is not meant to accommodate students who decide that the workload is too heavy. If an “I” is given, work must be completed within the time period specified by the instructor which is not to exceed 12 months from the time the incomplete is given.

Religious Accommodation: In accordance with rules of the Florida Board of Education and Florida law, students have the right to reasonable accommodations from the University in order to observe religious practices and beliefs with regard to admissions, registration, class attendance and the scheduling of examinations and work assignments.
For further information, please see http://www.fau.edu/academic/registrar/catalog/academics.php

**Students Representing The University At Official Functions:** Students representing the University at official functions will not be penalized for missing exams or quizzes while performing these functions. Reasonable accommodations will be made to allow the student to make up the work, usually after the majority of the class has taken the exam or quiz. It is up to the student to bring to the instructor’s attention the need for the accommodation, both by presenting the instructor a University form attesting to the need for the accommodation and by reminding the instructor of the event close to its occurrence.

**CLASSROOM ETIQUETTE POLICY:** Inappropriate behavior distracts other students and interferes with their learning experience. Inappropriate behavior would include rude and inappropriate comments in either live or on-line discussions. Additionally, in order to enhance and maintain a productive atmosphere for education, personal communication devices, such as cellular telephones and pagers, are to be disabled in class sessions. Behavioral deviation from these policies will not be tolerated. Since it is my responsibility to provide an environment that is conducive to learning for everyone in the class, I will deduct points from the final grade of a student who chooses to repeatedly distract others. In particularly egregious cases, I will have the student permanently removed from the class.

**CODE OF ACADEMIC INTEGRITY POLICY STATEMENT:**

Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty is considered a serious breach of these ethical standards because it interferes with the university mission to provide a high quality education I which no student enjoys an unfair advantage over any other. Academic dishonesty is also destructive of the university community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. For more information, see the College of Business Academic Honesty Policy at http://business.fau.edu/undergraduate/current-students/academic-policies/academic-honesty-policy/index.aspx.

While the FAU Honor Code governs all student activities throughout the course, there are some specific comments which are applicable.

Homework is to be an individual effort. It is certainly permissible to work with other students on assignments, but the final result turned in must be your own work. It is almost impossible for a program of any size above trivial to use identical variables, algorithms and computer memory. Having said that, you may incorporate code you find from other sources as long as you properly reference the sources. (Reuse of code is one of the objectives of object oriented programming after all). However, cheating, plagiarism, and unauthorized collaboration are unacceptable and subject to disciplinary actions. Plagiarism is turning in someone else’s ideas as your own work. Cheating is copying from someone or giving your work to someone else. Such actions may include an “F” in the course and the placement of a letter of fact in your student record in accordance with the rules of the University and the College of Business.

**DISABILITY POLICY STATEMENT:** In compliance with the Americans with Disabilities Act (ADA), students who require special accommodation due to a disability to properly execute
course work must register with the Office for Students with Disabilities (OSD) — in Boca Raton, SU 133 (561-297-3880); in Davie, MOD 1 (954-236-1222); in Jupiter, SR 117 (561-799-8585); or at the Treasure Coast, CO 128 (772-873-3305) — and follow all OSD procedures.

If you are recognized as a student with learning disability by the university, please provide the necessary documentation as soon as possible (no later than the first two weeks of the semester) so that I can make arrangements for you to take tests, etc., according to the prescribed procedures. If you have any other special needs please let me know. If you don't inform me of your special status and arrange for the paperwork with the Office Students with Disabilities, you will be given the same status as the rest of the students in class until you have provided the required information and the Office Students with Disabilities. Grades will not be changed retroactively based on any information provided late.

For further information, please see [http://www.fau.edu/eop/ada/ada_policy.php](http://www.fau.edu/eop/ada/ada_policy.php)

**COURSE TOPICAL OUTLINE, INCLUDING DATES FOR EXAMS/QUIZZES, PAPERS, COMPLETION OF READINGS:** The table below contains a schedule of topics by week. Please note that the dates given are the Monday for the class. For example, the material assigned under 1/23 will be the topic for that week. Homework assignments over the material will be found in the assignments section of Blackboard. Assignment due dates are given with the assignments in Blackboard.
<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Text</th>
<th>Homework</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction</td>
<td>VBA Ch 1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Excel Review &amp; Intro to VBA</td>
<td>VBA Ch 2, 4, &amp; 5</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Analytics at Work Ranges</td>
<td>Dav, Ch 1, VBA Ch 6</td>
<td>HW 1</td>
</tr>
<tr>
<td>4</td>
<td>Data Control Structures, Excel Objects</td>
<td>Dav, Ch 2, VBA Ch 7 &amp; 8</td>
<td>HW 2</td>
</tr>
<tr>
<td>5</td>
<td>Enterprise Arrays</td>
<td>Dav, Ch 3, VBA Ch 9</td>
<td>HW 3</td>
</tr>
<tr>
<td>6</td>
<td>Leadership, Term Paper Outline Subroutines &amp; Functions</td>
<td>Dav, Ch 4, VBA Ch 10</td>
<td>HW 4</td>
</tr>
<tr>
<td>7</td>
<td>Mid Term Exam</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Spring Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Targets User Forms</td>
<td>Dav, Ch 5, VBA Ch 11</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Analysis Error Handling and Advanced User Forms</td>
<td>Dav, Ch 6, VBA Ch 12 &amp; 11</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Embed Analytics in Business Processes Files, Folders and Databases</td>
<td>Dav, Ch 7, VBA Ch 13 &amp; 14</td>
<td>HW 5</td>
</tr>
<tr>
<td>12</td>
<td>Build an Analytical Culture Excel/VBA Pivot Tables an Charts</td>
<td>Dav, Ch 8, VBA Ch 15</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Review Your Business Comprehensively BI Applications</td>
<td>Dav, Ch 9, TBA</td>
<td>HW 6</td>
</tr>
<tr>
<td>14</td>
<td>Special Topics</td>
<td>Dav, Ch 10, TBA</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Team Paper presentations</td>
<td>Dav, Ch 11</td>
<td>HW 7</td>
</tr>
<tr>
<td>16</td>
<td>Final Exam</td>
<td></td>
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</tr>
</tbody>
</table>

The above is tentative and I reserve the right to change it depending upon the progress of the class.
REFERENCES:

Publicly Available Databases

Web based data from a variety of sources, including Yahoo Finance, the Pew Research Center, SEC databases, State and U.S. Government databases.

Publicly Available Databases via University of Arkansas and the Teradata University Network

Sam's Club Database: 6 tables with more than 55 million rows of Sales transaction data from 18 stores between January 1 and January 31, 2000.

Dillard's Department Stores Database: 5 tables with more than 128 million rows that contains retail sales transactions from 453 stores from August 2004 through August 2005.

Frozen Foods, Inc. Database: 6 dimension tables linked to a fact table containing almost 12 million rows of COPA database, with cost and profitability analysis data spanning two years from January 2004 to December 2005.

Hallux Productions Database: 25 tables with more than one million rows that contains synthetic data which consists of customer information, bookings, marketing, and album sales and distribution from January 1990 to December 2006.

Books

Title: Web Mining Applications in E-commerce and E-services
Authors: I-Hsien Ting (Editor), Hui-Ju Wu (Editor)
Publisher: Springer (2010)

Title: Business Intelligence: Data Mining and Optimization for Decision Making
Author: Carlo Vercellis
Publisher: John Wiley & Sons Inc (2009)

Title: Text Mining: Theory, Application, and Visualization
Authors: Ashok Srivastava (Editor), Mehran Sahami (Editor)
Publisher: Chapman & Hall/CRC, 1 edition (2009)

Title: Decision Support and Business Intelligence Systems (9th Edition)
Authors: Efraim Turban, Ramesh Sharda and Dursun Delen
Publisher: Prentice Hall (2010)

Title: Business Intelligence (2nd Edition)
Authors: Efraim Turban, Ramesh Sharda, Dursun Delen and David King
Title: Decision Support Systems in the 21st Century, 2nd edition
Author: George M. Marakas
ISBN: 0-13-092206-4
Publisher: Prentice Hall (2002)

Title: Mining the Talk: Unlocking the Business Value in Unstructured Information
Authors: Scott Spangler and Jeffrey Kreulen
ISBN: 0-13-233953-6
Publisher: IBM Press (2007)

Title: Data and Text Mining: A Business Applications Approach
Authors: Thomas W. Miller
ISBN: 0-13-140085-1
Publisher: Prentice Hall (2004)

Title: Introduction to Data Mining
Authors: Pang-Ning Tan, Michael Steinbach, and Vipin Kumar
Publisher: Addison Wesley (2005)

Title: Introduction to Business Data Mining
Authors: David Olson and Yong Shi
ISBN: 0-07-295971-1
Publisher: McGraw Hill (2005)

Title: MIS Cases: Decision Making with Application Software
Authors: Lisa Miller
Publisher: Prentice Hall (2006)

Title: Microsoft® Excel® 2010: Data Analysis and Business Modeling
Authors: Wayne L. Winston
Publisher: Microsoft Press (2011)

Title: Spreadsheet Modeling and Decision Analysis, 6th edition
Authors: Cliff T. Ragsdale
ISBN: 978-0-538-74632-8
Publisher: Thomson South-Western (2010)

Title: A Fast-Track to Structured Finance Modeling, Monitoring, and Valuation: Jump Start VBA
Authors: William Preinitz
ISBN: 978-0-470-39812-8
Publisher: Wiley (2009)
Title: Data Mining for Business Intelligence, Concepts, Techniques, and Applications in Microsoft Office Excel with XLMiner, 2E
Authors: Galt Shmuell, Nitin R. Patel and Peter C. Bruce
ISBN: 978-0-470-52682-8
Publisher: Wiley (2010)

Title: Microsoft Excel VBA Programming, 3E
Authors: Duane Birnbaum and Michael Vine
ISBN: 978-1-59863-394-8
Publisher: Course Technology Cengage (2007)

Title: Financial Analysis and Modeling Using Excel and VBA
Authors: Chandan Sengupta
Publisher: Wiley (2009)

Title: Handbook of Statistical Analysis and Data Mining,
Authors: Robert Nisbet, John Elder and Gary Miner
Publisher: Elsevier Academic Press (2009)

**Articles**


