**ISM 6404-002**

**Intro to Business Analytics and Big Data**

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**CRN Number: 14836**

**Course Title: Intro to Business Analytics and Big Data**

**Term: Spring 2025**

**Class Location and Meeting time: 06:30 PM - 09:20 PM  
Dates: 01/04/2025 - 04/30/2025  
Building: Fleming Hall Boca Room: 409**

Spring 2025

Dr. Ernesto Lee

Office: FL 328

Office hours: Friday 9AM – 11AM on Zoom or in-person office by appointment

Email: [elee@fau.edu](mailto:elee@fau.edu)

**Course Description**

This course introduces students with the concept of Business Intelligence, Analytics, Big Data and their processes and techniques such as Data Warehousing, Visual Analytics, Statistical modeling for prediction, data mining process, text web and social media analytics, optimization and simulation techniques and big data concepts and tools. This course will include hands-on assignments using various business analytics tools such as **Excel, Microsoft Azure, Excel Solver, Power BI, Tableau.** The students are assumed to be familiar at an intuitive level with general business practices of collecting, storing, and using data. However, these subjects will be reviewed in detail during the course.

**Instructional Method**

This course is Fully Online and will follow online format of weekly lecture videos and assignments posted on every Tuesday. Instructions and submissions throughout the course will be conducted through the Canvas LMS.

**Prerequisites/Corequisites**

This course is a 3-credit course, serving as an elective in the MBA/MSITM program. The prerequisite is admission to an FAU graduate program.

**Course Objectives/Student Learning Outcomes**

* Become knowledgeable in the Business Intelligence methodology and concepts
* Understand and identify the principal components of the various forms of analytics
* Gain strategic understanding of the business intelligence knowledge through the case studies covered under all the topics
* Understand the concept of data warehousing, its operations and tools
* Become familiar at an intuitive level with general business practices of collecting, storing, and visualizing data.
* Perform Predictive analytics using Regression technique
* Performing descriptive analytics by building dashboards, text mining.

**Course Evaluation Method**

**Online Discussions 10%** (5 discussions - 2 points each)

**Assignments 65 %** (Total 7: 6 assignments - 10 points each, 1 assignment 5 points)

**Student individual/Group Project 15%**

**Final Exam 10%**

**Grading Scale**

|  |  |
| --- | --- |
| **Grade** | **%** |
| **A** | **93 - 100** |
| **A-** | **90 - 92** |
| **B+** | **87 - 89** |
| **B** | **83 - 86** |
| **B-** | **80 - 82** |
| **C+** | **77 - 79** |
| **C** | **73 - 76** |
| **C-** | **70 - 72** |
| **D +** | **67 - 69** |
| **D** | **60 - 66** |
| **F** | **< 60** |

All letter grades are calculated using the **weighted** average from all items listed above. Please refer to the above grading scale when determining your overall course grade.

**Policy on Makeup Tests, Late Work, and Incompletes**

Any late assignments (except for medical reasons – doctor’s note required) will be given partial credit (70% of the grade).

Discussions will NOT be accepted late (except for medical reasons – doctor’s note required).

Project will NOT be accepted late (except for medical reasons – doctor’s note required).

No exams/assessments may be taken late or as a “make up” ***except*** for approved reasons (i.e., illness or extreme emergency, university-approved absences, or religious accommodations).

**Classroom Etiquette Policy**

It is important to keep in mind that although we are in a “virtual” environment, we still need to interact properly with each other and maintain an appropriate level of etiquette. The term **netiquette** is used to refer to online etiquette. By following these rules, you will improve the readability of your messages, and you will help others handle the large volume of information in an online classroom:

* **Be inclusive.** It’s important to be intentional about making sure we "see" each other in an online community.
  + You can do this by making sure that everyone has at least one response.
    - Tip: If you are unsure who to respond to, try looking for posts that have not yet received a reply.
    - Also, be sure to reply back to people who post questions or comments to you.
* **Be on time.** Your contributions to our discussions are important, but our learning community will not benefit from them unless you post on time.
  + Tip: Set calendar reminders to make sure you contribute on time.
* **Disagree respectfully.** Disagreement and different ideas are essential parts of learning, problem-solving, and creativity. However, in order for different ideas to be heard and shared, it is important to maintain a respectful stance even through vehement disagreement; otherwise, communication may break down.
  + Tip: You might start the conversation with a question to clarify or get more information before you explain your different perspective.
    - For example, “Nathan, can you tell me more about what you meant when you said that recycling programs are a waste of public resources?”
  + Tip: Refrain from using judgmental evaluations of what someone posted, and instead present your own perspective supported by factual information.
    - For example, instead of “Jamal, your analysis makes no sense,” you can say, “Jamal, I interpreted the results of the study differently. As I see it, there was no statistically significant difference in the children’s test scores, which implies that the new program is not working.”
* **Be concise.** Lengthy paragraphs are difficult for readers to digest. Keep your paragraphs short and your writing concise.
  + Tip: Consider using bullet points to help highlight your main points or headings if your post needs to be lengthy.
* **Stay on topic.** Off-topic comments can derail our conversation. You can post off-topic comments in our open discussion forum or one of the other communication modes we are using on the course.
* **NO YELLING.** When you write in upper case letters in online communication, it is usually interpreted as yelling.
* **Add some emotion :-)** Sometimes it helps communicate the tone of your message when you add an emoticon. However, only do so as necessary for it can end up being annoying to readers if you have too many (which is probably the opposite of your intention).
* **Use humor carefully.** Sarcasm in particular does not translate well in an online environment. It’s best to avoid the potential pitfalls of misunderstood messages.

**Attendance Policy**

*Students are expected to attend all of their scheduled University classes and to satisfy all academic objectives as outlined by the instructor. The effect of absences upon grades is determined by the instructor, and the University reserves the right to deal at any time with individual cases of non-attendance. Students are responsible for arranging to make up work missed because of legitimate class absence, such as illness, family emergencies, military obligation, court-imposed legal obligations or participation in University-approved activities. Examples of University-approved reasons for absences include participating on an athletic or scholastic team, musical and theatrical performances and debate activities. It is the student’s responsibility to give the instructor notice prior to any anticipated absences and within a reasonable amount of time after an unanticipated absence, ordinarily by the next scheduled class meeting. Instructors must allow each student who is absent for a University-approved reason the opportunity to make up work missed without any reduction in the student’s final course grade as a direct result of such absence.*

**Counseling and Psychological Services (CAPS) Center**

*Life as a university student can be challenging physically, mentally and emotionally. Students who find stress negatively affecting their ability to achieve academic or personal goals may wish to consider utilizing FAU’s Counseling and Psychological Services (CAPS) Center. CAPS provides FAU students with a range of services – individual counseling, support meetings, and psychiatric services, to name a few – offered to help improve and maintain emotional well-being. For more information, go to* [*http://www.fau.edu/counseling/*](http://www.fau.edu/counseling/)

**Disability Policy**

*In compliance with the Americans with Disabilities Act Amendments Act (ADAAA), students who require reasonable accommodations due to a disability to properly execute coursework must register with Student Accessibility Services (SAS) and follow all SAS procedures. SAS has offices across three of FAU’s campuses – Boca Raton, Davie and Jupiter – however disability services are available for students on all campuses. For more information, please visit the SAS website at* [*www.fau.edu/sas/*](http://www.fau.edu/sas/)*.*

**Code of Academic Integrity**

*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’s mission to provide a high quality education in 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* [*University Regulation 4.001*](http://wise.fau.edu/regulations/chapter4/Reg_4.001_5-26-10_FINAL.pdf)*.*

*A NOTE ON PLAGIARISM*

Plagiarism takes many forms, including but not limited to:

* Direct copying (including 3 words in a row) without using quotations.
* ChatGPT without citation
* Failure to use citations when an idea is not yours
  + Copying material without quotation marks is always plagiarism, even if you cite the source.
  + Providing references in the reference section without using citations is still plagiarism.

As a student you are required to be aware of all types of plagiarism. For example, you must cite the textbook where you paraphrase a definition or concept from it. Failure to paraphrase and/or cite correctly your sources can result in dismissal from the class and the University. Saying you worked on a project together and used the same references is not an excuse. Everyone must turn in their own individual paper which follows the correct APA formatting including proper referencing. If you are unsure about correct ways to paraphrase concepts and definitions, contact the campus academic advisor, or the Business Communications Department on the Boca Raton campus, for further assistance.

*Anti-plagiarism Software*

Written components of any assignment or project may be submitted to anti-plagiarism software to evaluate the originality of the work. Any students found to be submitting work that is not their own will be deemed in violation of the University’s honor code discussed above.

**Disability / Accessibility Policy Statement**

In compliance with the Americans with Disabilities Act Amendments Act (ADAAA), students who require reasonable accommodations due to a disability to properly execute coursework must register with Student Accessibility Services (SAS)—in Boca Raton, SU 133 (561-297-3880); in Davie, LA 131 (954-236-1222); or in Jupiter, SR 110 (561-799-8585) —and follow all SAS procedures.  Their web site is:  <https://fau.edu/sas>.

**Religious Accommodation Policy Statement**

In accordance with rules of the Florida Board of Education and Florida law, students have the right to reasonable accommodations from the University to observe religious practices, observances, and beliefs with regard to admissions, registration, class attendance and the scheduling of examinations and work assignments.

For further information, please see FAU Regulation 2.007 at: [FAU Regulation 2.007](http://www.fau.edu/regulations/chapter2/Reg%202.007%208-12.pdf).

**University Approved Absence Policy Statement**

In accordance with rules of the Florida Atlantic University, students have the right to reasonable accommodations to participate in University approved activities, including athletic or scholastics teams, musical and theatrical performances and debate activities. It is the student’s responsibility to notify the course instructor at least one week prior to missing any course assignment.

**Required Texts/Materials/Readings**

Title: **Business Intelligence, Analytics, and Data Science, Fourth Edition**

Authors: Ramesh Sharda, Dursun Delen, Efraim Turban

Publisher: Pearson

ISBNs: 978-0-13-463328-2

*There might also be multiple assigned readings in the form of lecture slides, articles, cases, etc. as distributed electronically or handouts by the professor and also available in the CANVAS Learning Management System*

**Required technological skills:**

* Basic Skills in computer use
* Access to the internet
* Basic Canvas LMS skills
* Basic Skills for Office programs (word processing and presentation programs)

**Required Software**

* Microsoft 365 Suite [Link to download](https://www.fau.edu/oit/getoffice365/)
* Reliable web browser (recommended [Chrome](https://www.google.com/chrome/) or [Firefox](https://www.mozilla.org/en-US/firefox/new/?utm_medium=referral&utm_source=firefox-com))
* Java – [Link to download](http://www.java.com/en/download/help/windows_manual_download.xml) and/or [Link to verify Java](http://www.java.com/en/download/installed8.jsp) on your computer
* Adobe Flash Player: [Link to download](https://get.adobe.com/flashplayer/)
* Mobile App: Instructions on how to download the Canvas App on an iOS device ([Link for iOS Instructions](https://community.canvaslms.com/docs/DOC-1658)) or Android device ([Link for Android instructions](https://community.canvaslms.com/docs/DOC-1548)).
* NOTE: Power BI works on Windows laptop/desktop ONLY. Please plan to use Windows system for the Power BI assignments.

**Internet Connection**

* Recommended: Broadband (high-speed) Internet connection with a speed of 4 Mbps or higher
* To function properly, Canvas requires a high-speed Internet connection (cable modem, DSL, satellite broadband, T1, etc.). The minimum Internet connection speed to access Canvas is a consistent 1.5 Mbps (megabits per second) or higher.
* To check your Internet speed, [click here](http://www.speedtest.net/).

**Minimum Technical Skills Requirements**

The general and course-specific technical skills a student must have to succeed in the course include but are not limited to:

1. Accessing Internet.
2. Using Canvas (including taking tests, attaching documents).
3. Using email with attachments.
4. Creating and submitting files in commonly used word processing program formats such as Microsoft Office Tools.
5. Copying and pasting functions.
6. Downloading and installing software.
7. Using presentation, graphics, and other programs.
8. Posting and commenting in an online discussion.
9. Searching the FAU library and websites.

**Computer Requirement**

Basic computer specifications for Canvas [Link to Specifications](https://community.canvaslms.com/docs/DOC-2059)

Operating System

* A computer that can run Mac OSX or Win 7.0 or higher.

Peripherals

* A backup option should be available to minimize the loss of work, such as an external hard drive, a USB drive, cloud storage, or your folder on the FAU servers.

Software

* Once logged in to Canvas, make sure your Internet browser is compatible.
* Other software may be required for specific learning modules. If so, the necessary links to download and install will be provided within the applicable module.

**Technical Support**

In the online environment, technical issues are always possible (e.g., lost connection, hardware or software failure). Many of these occurrences can be resolved relatively quickly, but if you wait until the last minute before due dates, the chances of these glitches affecting your success are greatly increased; please plan appropriately. If a problem occurs, it is essential that you take immediate action to document the issue so your instructor can verify and take appropriate action to resolve the problem.

**Most issues in Canvas can be resolved by clicking on the “Help” tab located on the menu bar.**

**Upon clicking the “Help” tab, you will be able to:**

* Report a problem
* Search Canvas guides

**Additional Technical Suppor**t

1. Contact the eLearning Success Advisor for assistance: 561-297-3590
2. If you can, take a Print Screen image of the monitor when the problem occurs. Save the image as a .jpg file. If you are unfamiliar with creating a Print Screen image, visit [Link to Print Screen Instructions.](http://www.wikihow.com/Take-a-Screenshot-in-Microsoft-Windows)
3. Complete a Help Desk ticket ([Link to Help Desk](https://helpdesk.fau.edu/TDClient/Home/)). Make sure you complete the form entirely and give a full description of your problem so the Help Desk staff will have the pertinent information in order to assist you properly. The process includes the following steps:
   1. Select “Canvas (Student)” for the Ticket Type.
   2. Input the Course ID.
   3. In the Summary/Additional Details section, include your operating system, Internet browser, and Internet service provider (ISP).
   4. Attach the Print Screen file, if available.
4. If you do not hear back from a Help Desk representative in a timely manner (48 hours), it is your responsibility to follow up with an appropriate staff member until a resolution is reached.
5. Once you have submitted a Help Desk Ticket, inform your instructor. Include all pertinent information of the incident (steps 3b-d above). Keep your instructor informed of the status.

# Course Outline

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| --- | --- | --- | --- |
| **Date**  **Tuesday** | **Lecture Topics** | **Self Reading**  **Textbook** | **Assignments**  **All Discussions and Assignments are due in a week (Check Canvas)** |
| **01/8** | Syllabus discussion  Overview Business Intelligence | Introduction,  Chapter 1 | Discussion 1 posted |
| **01/15** | Data Warehousing | Chapter 3 | Discussion 2 posted |
| **01/22** | Nature of data, Statistical Modelling | Chapter 2 | Assignment 1 – Regression |
| **01/29** | Visualization – Visual Analytics | Chapter 2 | Discussion 3 posted |
| **02/5** | Visualization – Visual Analytics | Chapter 2 | Assignment 2 – Power BI |
| **02/12** | Data Mining Process | Chapter 4 | Discussion 4 posted |
| **02/19** | Data Mining Process | Chapter 4 | Assignment 3 – Sentiment Analysis |
| **02/26** | Text, Web, Social Media Analytics | Chapter 5 | Discussion 5 posted |
| **03/05** | ***Spring Break – No class*** |  |  |
| **03/12** | Big Data concepts and tools | Chapter 7 | Assignment 4 – Power BI    **Project posted** |
| **03/19** | Big Data concepts and tools | Chapter 7 | Assignment 5 – Tableau |
| **03/26** | Big Data concepts and tools | Chapter 7 | Assignment 6 – Tableau |
| **04/02** | Optimization and Simulation | Chapter 6 | Project QA |
| **04/9** | Optimization and Simulation contd. | Chapter 6 | Assignment 7 – Excel Solver, Scenario Manager |
| **04/16** | Future Trends, Final Exam topics | Chapter 8 | Project QA |
| **04/24** | ***Project due*** |  |  |
| **04/24** | ***Final Exam posted 8:00 AM- Due on 04/24 11:59 PM.***  ***Final Grades posted by May 5th*** | | |

This schedule serves as a ***tentative***overview of the course progression. It is subject to change **frequently**. Please be sure to check your FAU emails and Canvas Announcements on a regular basis (at least 3 times per week) for the latest class information.

**Technical Problem Resolution Procedure**  
In the online environment, there is always a possibility of technical issues (e.g., lost connection, hardware or software failure). Many of these can be resolved relatively quickly, but if you wait until the last minute before due dates, the chances of these glitches affecting your success are greatly increased. Please plan appropriately. If a problem occurs, it is essential that you take immediate action to document the issue so your instructors can verify and take appropriate action to resolve the problem.   
  
It is your responsibility to obtain the necessary information and skills to manage the hardware and software systems of this course. In addition, if your personal computer becomes unavailable for any reason, you are responsible for locating and operating other adequate computer resources to meet the course deadlines.

**Remember, you can always go to any FAU computer lab to complete your work!**

[Click here to view a list of lab locations.](http://www.fau.edu/oit/labs/open_labs/)

**Recommended Browsers**

Canvas supports the latest two versions of the most widely used browsers. We have learned that Canvas works better with Google Chrome and Mozilla Firefox than with Internet Explorer. If Internet Explorer is currently your only browser, consider installing [Chrome](https://www.google.com/chrome/) or [Firefox](https://www.mozilla.org/firefox).

We highly recommend updating to the **newest** **version** of whatever browser you are using as well as updating to the most recent Flash plug-in.

For more details, see [Which Browsers Does Canvas Support?](https://community.canvaslms.com/docs/DOC-1284)

**Getting Help**

FAU has purchased Tier 1 support, provided by Canvas. What does this mean for you?

Canvas support is available **24/7, 365 days a year** in various forms. You can use the Canvas Guides to search for answers, call the support hotline to talk to a person, hit the chat link to message a Canvas support technician, or report an issue directly to Canvas.

You can access all of these help options by clicking on the **Help** link in the bottom-left corner of the Canvas window and then selecting your preferred method of assistance.

If you call FAU's Help Desk, please be sure to select the option for Canvas.

**Questions about Assignments or Course Material**

Make sure you read the entire syllabus and Start Here Module first. If you have questions about the assignments or course material, contact me through my Canvas Inbox.

The suggestions listed above have been noted by the Center of eLearning Department at FAU.