

New Jersey Institute of Technology

IS 465: Advanced Information Systems

3 Credits, 3 Contact hours

Instructor: Sathish Rajamani

Contact: Sathish.rajamani@njit.edu

Hours: By appointment

LinkedIn: Sathish Rajamani

Facebook: SathishRajamaniVIT

Moodle: <http://moodle.njit.edu>

Course Description

This course provides an in depth view of the algorithms and software systems that are used to support decision making and performance analysis in businesses and to provide business intelligence. A wide range of case studies are discussed to show ways in which these types of systems have provided a competitive edge. The course examines trends in application of machine learning, data warehousing, big data analytics, and data/text mining on business models and business practice

Required Background: Student attending this course should have basic understanding of the Information Systems, how organizations use Information Technology and appreciate that Information system is continuously changing. They should also be aware of the basic concepts related to Database Design, Database Management and Applications.

Prerequisites or co-requisites: IS 265, and either (IS 331 or CS 431) and Statistics (Math105, Math 333 or equivalent).

Indicate whether a required, elective, or selected elective course in the program: IS 465 is a required course in the BAIS and BSBIS.

Text, Readings, and Collaborative Conferencing System

- Business Intelligence: A Managerial Perspective on Analytics (3rd Edition), Ramesh Sharda, et al. ISBN-10: 013305112X or ISBN-13: 9780133051124, Publisher: PEARSON EDUCATION Copyright: 2014
- Notes & Required Articles: *Included in the Moodle*

Course Objectives

- Students will be able to acquire an understanding of the concepts and skills associated with big data predictive analytics and associated business intelligence.
- Students will be able to acquire an understanding of the concepts and skills associated with machine learning for business intelligence.
- Students will be able to recognize the different data mining techniques like clustering for trend analysis and business intelligence.
- Students will be able to understand how data warehousing and database driven decision support systems support business intelligence within organizations.

Honor Code

Any evidence of cheating in any form including plagiarism and cutting & pasting from the Internet, will be dealt with according to the honor code of NJIT (course failure and suspension or expulsion). Please note: There will be no warnings or chances with regard to cheating. Any discovered case of cheating will be immediately passed to the Dean of Students for further investigation.

This is your warning now. Cheating is not worth it - you may not only fail this course, but also be suspended from NJIT. The full text of the NJIT Honor Code is available for your review at <http://www.njit.edu/academics/honorcode.php>.

Regarding Participation

We are structuring the class to encourage discussion, both during class and on-line in-between classes. You are expected to read the reference materials that are uploaded in Moodle, prior to attending the classes. During both types of discussions, your participation in discussions especially classroom is expected, if you do not attend class or do not notify me of your absence before class I reserve the right to lower your implication grade.

Learning Goals and Learning Outcomes:

- An ability to apply knowledge from computing, mathematics, statistics, and management to effective Information Systems practice.
- Have demonstrated the capability to analyze problems and systems, and identify/define/design apropos computing/IS/IT solutions, tools and methodologies
- An ability to function effectively on teams in order to accomplish a desired goal.
- An ability to communicate effectively in both oral and written modes.
- An ability to invoke current techniques, skills, tools and methodologies necessary to becoming an effective Information Systems professional.
- An understanding of the need to engage in continuing professional development, and to understand the purpose of research in the Information Systems and Computing fields, and how this benefits current practice.

Assignments & Evaluation: All assignments are due at **1155 pm EST** on the due date. Late assignments receive zero (0) credit. All assignments are to be posted in the appropriate assignment/forum on Moodle. Evaluation comprises of the following components. There is NO Term-End Examination

1. **Five Application Cases Online Discussions - 35%**
2. **Four Online Quiz – 40 %**
3. **Mini Project – 25 %**

1. Five End of Chapter Application Cases Online Discussions

The purpose of this assignment is to learn from the Case Study that is provided, share your views and also learn from each other. There are two parts to the on-line discussion.

- The initial part is to answer the questions provided with the case study. It carry 0 to 5 points
- Each student will post 2 comments. It will be to discuss other student's initial comment or subsequent comments. It carry 0 or 1 point for each comment, up to 2 Points

Comments such as “I agree” or “I disagree” do not count. You are expected to integrate the course material in each comment. Add value!! **Each comment should be at least 50 words. No more than 1 comment on a single day.** Additional comments are always welcome.

2. FOUR Online QUIZ

Online Quiz. Objective Type. Each Quiz carries 20 questions to be answered in 30 Minutes

3. Mini Project

The Mini Project will be an application of the concepts learnt in the class. Details of the Mini Project will be provided in the class

Grading Policy

<ul style="list-style-type: none"> • A 93 and up • B+ 87 to 92 • B 80 to 86 	<ul style="list-style-type: none"> • C+ 75 to 79 • C 65 to 74 • F less than 65
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There are no incompletes. Final grades are based on total scores including on-line and in class participation.

Critical Thinking

http://www.criticalthinking.org/aboutCT/define_critical_thinking.cfm

Course Schedule: The course schedule is subject to change depending on the pace of teaching – learning process. See Moodle for exact dates.

Week	Topic	Reading
1 & 2	Introduction & An Overview of Business Intelligence, Analytics & Decision Support	Chapter 1
3 & 4	Data Warehousing	Chapter 2
5 & 6	Business Reporting, Visual Analytics and Business Performance Management	Chapter 3
7	Data Mining	Chapter 4
8	Text and Web Analytics	Chapter 5
9 & 10	Big Data & Analytics	Chapter 6
11 & 12	Business Analytics: Emerging Trends and Future Impacts	Chapter 7