



### 1. General Information

Course Subject	IIMT
Course Number	2641
Course Title	Introduction to Business Analytics
Academic Years	2024-2025
Grading Method	Letter

### 2. Instructors

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### 3. Teaching Assistants

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Subclasses: 1A,1B,2C,2D

### 4. Course Description

Course Description	Big data has fundamentally reshaped business, industry, and society. In this course, you will learn how to use data and analytics to give an edge to your career and your life. We will examine real world examples of how analytics have been used to significantly improve business decisions. Through these examples, you will learn the following analytics methods: decision trees, linear regression, logistic regression, clustering, and text analytics. We will be using the statistical software R to build models and work with data.
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## 5. Course Objectives

1. Obtain solid understanding about common analytics methods in business situations
2. Formulate the right business problem and identify suitable analytics methods
3. Carry out the analysis using software tools
4. Present analysis results in business relevant language

## 6. Faculty Learning Goals

Goal 1: Acquisition and internalization of knowledge of the programme discipline

Goal 2: Application and integration of knowledge

Goal 3: Inculcating professionalism

Goal 4: Developing global outlook

Goal 5: Mastering communication skills

Goal 6: Cultivating leadership

## 7. Course Learning Outcomes

Course Teaching and Learning Activities	Aligned Faculty Learning Goals					
	1	2	3	4	5	6
CLO1. Clearly identify and formulate the relevant business problem	✓					
CLO2. Select and use effective methods to address the business problem		✓				
CLO3. Use software tools to provide solution to the issue at hand		✓		✓		
CLO4. Communicate the solution effectively			✓		✓	✓

## 8. Course Teaching and Learning Activities

Course Teaching and Learning Activities #	Expected Study Hours	Study Load (% of study)
T&L1. Interactive lectures	36	30
T&L2. Tutorials	12	10
T&L3. Self-study	36	30
T&L4. Group projects and individual assignments	36	30
	Total: 120	Total: 100

## 9. Assessment Methods

Assessment Methods	Description	Weight %	Aligned Course Learning Outcomes
A1. Participation	Attendance & discussions	10%	1,2,3,4
A2. Written	Effort and accuracy	30%	1,2,3,4

## 9. Assessment Methods

assignments			
A3. Group Project	Effort and accuracy	20%	1,2,3,4
A4. Final Exam	Effort and accuracy	40%	1,2,3,4

## Assessment Rubrics

A1. Participation	
A+,A,A-	<ul style="list-style-type: none"> <li>•High participation in discussions</li> <li>•Always attend in-class discussions</li> <li>•Demonstrate a strong understanding of all relevant knowledge</li> <li>•Handling questions professionally</li> <li>•Present arguments that have an element of originality</li> <li>•Respect others and follow the class rules (no chatting and do not use cell phone)</li> </ul>
B+,B,B-	<ul style="list-style-type: none"> <li>•Good participation in discussions</li> <li>•Often attend in-class discussions</li> <li>•Demonstrate a good understanding of all relevant knowledge</li> <li>•Handling questions in a logical way</li> <li>•Present arguments that go beyond the lecture and textbook</li> <li>•Respect others and follow the class rules (no chatting and do not use cell phone)</li> </ul>
C+,C,C-	<ul style="list-style-type: none"> <li>•Some participation in discussions</li> <li>•Sometimes attend in-class discussions</li> <li>•Demonstrate a basic understanding of the concepts involved</li> <li>•Fairly address questions as set</li> <li>•Present arguments in a well-structure manner</li> <li>•Respect others and follow the class rules (no chatting and do not use cell phone)</li> </ul>
D+,D	<ul style="list-style-type: none"> <li>•Minimal or no participation in discussions</li> <li>•Rarely attend in-class discussions</li> <li>•Demonstrate a minimum understanding of the concepts involved</li> <li>•Barely address questions as set</li> <li>•Present arguments in a marginally acceptable manner</li> <li>•Respect others and follow the class rules (no chatting and do not use cell phone)</li> </ul>
F	<ul style="list-style-type: none"> <li>•Minimal or no participation in discussions</li> <li>•Almost never attend in-class discussions</li> <li>•Demonstrate a poor understanding of the concepts involved</li> <li>•Unable or unwilling to handle questions</li> <li>•Present arguments poorly</li> <li>•Behave poorly in class (often chatting with others, using cell phones, or being late)</li> </ul>
A2. Written assignments	
A+,A,A-	<ul style="list-style-type: none"> <li>•Demonstrate a strong understanding of all relevant knowledge</li> <li>•Present arguments that have an element of originality</li> <li>•Achieve a standard of excellent performance in the assessments with very accurate computation and very good analytical and problem solving skills</li> </ul>
B+,B,B-	<ul style="list-style-type: none"> <li>•Demonstrate a good understanding of all relevant knowledge</li> <li>•Present arguments that go beyond the lecture and textbook</li> <li>•Achieve a standard of good performance in the assessments with accurate computation and good analytical and problem solving skills</li> </ul>
C+,C,C-	<ul style="list-style-type: none"> <li>•Demonstrate a basic understanding of the concepts involved</li> <li>•Present arguments in a well-structure manner</li> <li>•Meet a standard of acceptable performance in the assessments with reasonably accurate computation and acceptable analytical and problem solving skills</li> </ul>
D+,D	<ul style="list-style-type: none"> <li>•Demonstrate a minimum understanding of the concepts involved</li> </ul>

## Assessment Rubrics

	<ul style="list-style-type: none"> <li>•Present arguments in a marginally acceptable manner</li> <li>•Meet a standard of marginally acceptable performance in the assessments with some errors in computation and barely adequate analytical and problem solving skills</li> </ul>
F	<ul style="list-style-type: none"> <li>•Demonstrate a poor understanding of the concepts involved</li> <li>•Present arguments poorly</li> <li>•Fail to meet a standard of passing the assessments with major errors in computation and inadequate analytical and problem solving skills</li> </ul>
A3. Group Project	
A+,A,A-	<ul style="list-style-type: none"> <li>•Delivers a persuasive, engaging and impactful presentation, and provides well- reasoned answers to address all questions raised</li> <li>•Provides persuasive original, insightful and well-reasoned recommendations that clearly follow from the analysis and effectively address the key issue</li> </ul>
B+,B,B-	<ul style="list-style-type: none"> <li>•Delivers an engaging presentation and provides well-reasoned answers to address all questions raised</li> <li>•Provides well-reasoned recommendations that follow from the analysis and address the key issue</li> </ul>
C+,C,C-	<ul style="list-style-type: none"> <li>•Delivers an adequate presentation and provides answers to address questions raised</li> <li>•Conducts adequate analysis and provides reasoned recommendations that address the key issue</li> </ul>
D+,D	<ul style="list-style-type: none"> <li>•Weak presentation and non-persuasive answers to questions raised</li> <li>•Offers weak recommendations, which do not address key issue</li> </ul>
F	<ul style="list-style-type: none"> <li>•Failure to present appropriately and/or provide adequate answers to questions raised</li> <li>•Fails to identify key issue and/or provide adequate analysis and/or recommendations</li> </ul>
A4. Final Exam	
A+,A,A-	<ul style="list-style-type: none"> <li>•Demonstrate a strong understanding of all relevant knowledge</li> <li>•Present arguments that have an element of originality</li> <li>•Achieve a standard of excellent performance in the assessments with very accurate computation and very good analytical and problem solving skills</li> </ul>
B+,B,B-	<ul style="list-style-type: none"> <li>•Demonstrate a good understanding of all relevant knowledge</li> <li>•Present arguments that go beyond the lecture and textbook</li> <li>•Achieve a standard of good performance in the assessments with accurate computation and good analytical and problem solving skills</li> </ul>
C+,C,C-	<ul style="list-style-type: none"> <li>•Demonstrate a basic understanding of the concepts involved</li> <li>•Present arguments in a well-structure manner</li> <li>•Meet a standard of acceptable performance in the assessments with reasonably accurate computation and acceptable analytical and problem solving skills</li> </ul>
D+,D	<ul style="list-style-type: none"> <li>•Demonstrate a minimum understanding of the concepts involved</li> <li>•Present arguments in a marginally acceptable manner</li> <li>•Meet a standard of marginally acceptable performance in the assessments with some errors in computation and barely adequate analytical and problem solving skills</li> </ul>
F	<ul style="list-style-type: none"> <li>•Demonstrate a poor understanding of the concepts involved</li> <li>•Present arguments poorly</li> <li>•Fail to meet a standard of passing the assessments with major errors in computation and inadequate analytical and problem solving skills</li> </ul>

## 10. Course Grade Descriptors

A+,A,A-	<ul style="list-style-type: none"> <li>•Demonstrate a strong understanding of all relevant knowledge</li> <li>•Handling questions professionally</li> <li>•High participation in discussions</li> <li>•Present arguments that have an element of originality</li> <li>•Achieve a standard of excellent performance in the exams with very accurate computation and very good analytical and problem solving skills</li> <li>•Excellent performance in assignments</li> </ul>
B+,B,B-	<ul style="list-style-type: none"> <li>•Demonstrate a good understanding of all relevant knowledge</li> <li>•Handling questions in a logical way</li> <li>•Good participation in discussions</li> <li>•Present arguments that go beyond the lecture and textbook</li> <li>•Achieve a standard of good performance in the exams with accurate computation and good analytical and problem solving skills</li> <li>•Good performance in assignments</li> </ul>
C+,C,C-	<ul style="list-style-type: none"> <li>•Demonstrate a basic understanding of the concepts involved</li> <li>•Fairly address questions as set</li> <li>•Some participation in discussions</li> <li>•Present arguments in a well-structure manner</li> <li>•Meet a standard of acceptable performance in the exams with reasonably accurate computation and acceptable analytical and problem solving skills</li> <li>•Acceptable performance in assignments</li> </ul>
D+,D	<ul style="list-style-type: none"> <li>•Demonstrate a minimum understanding of the concepts involved</li> <li>•Barely address questions as set</li> <li>•Minimal or no participation in discussions</li> <li>•Present arguments in a marginally acceptable manner</li> <li>•Meet a standard of marginally acceptable performance in the exams with some errors in computation and barely adequate analytical and problem solving skills</li> <li>•Marginally acceptable performance in assignments</li> </ul>
F	<ul style="list-style-type: none"> <li>•Demonstrate a poor understanding of the concepts involved</li> <li>•Unable or unwilling to handle questions</li> <li>•Minimal or no participation in discussions</li> <li>•Present arguments poorly</li> <li>•Fail to meet a standard of passing the exams with major errors in computation and inadequate analytical and problem solving skills</li> <li>•Poorly performance in assignments</li> </ul>

## 11. Course Content and Tentative Teaching Schedule

Topic/ Session	Date	Content	Case
1	2024-09-02	Overview: Business Analytics, Review of Probability	
2	2024-09-09	Decision Analysis	Summer Job Search
3	2024-09-16	Review of Statistical Inference, Introduction to R	New Product Development
4	2024-09-23	Linear Regression (Part 1), Linear Regression (Part 2)	Wine Quality Prediction
5	2024-09-30	Linear Regression (Part 3), DiD (Part 1)	Online-Offline Channels in Retail
6	2024-10-07	DiD (Part 2), Logistic Regression (Part 1)	Healthcare Quality Assessment
7	2024-10-14	NO CLASS - Reading Week	
8	2024-10-21	Logistic Regression (Part 2), Clustering (Part 1)	Movie Recommendation

## 11. Course Content and Tentative Teaching Schedule

9	2024-10-28	Clustering (Part 2), Principal component analysis (Part 1)	USA Crime Rates Analysis
10	2024-11-04	Principal component analysis (Part 2), Classification Tree (Part 1)	Court Ruling Prediction
11	2024-11-11	Classification Tree (Part 2), Text Analytics (Part 1)	Sentiment Analysis on Twitter
12	2024-11-18	Text Analytics (Part 2), Project Presentations	
13	2024-11-25	Project Presentations, Course Review	

## 12. Required/Recommended Readings & Online Materials

Reading	<i>The Analytics Edge</i> . Dimitris Bertsimas, Allison K. O'Hair, and William R. Pulleyblank. Dynamic Ideas LLC., 2016.
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## 13. Means / Processes for Student feedback on Course

✓	Conducting mid-term survey in additional to SETL around the end of the semester
	Online response via Moodle site
✓	Others
	Email communication

## 14. Course Policy

1. Academic dishonesty includes cheating, plagiarism, unauthorized collaboration, falsifying academic records, and any act designed to avoid participating honestly in the learning process. Academic dishonesty also includes, but is not limited to, providing false or misleading information to receive a postponement or an extension on an exam or other assignment.
2. An orderly learning environment is extremely important for this course. Disruptive behaviors are inconsiderate to other students as well as to the instructor, and are absolutely unacceptable. Talking during lectures, arriving to class late, and any other disruptions of mobile devices are not allowed; students who are responsible for any of these actions will be subject to academic penalty and will be asked to leave the classroom.

## 15. Additional Course Information

1. Lecture notes and self-learning materials will be uploaded on Moodle.
2. No late assignment submission will be accepted.
3. The instructor reserves all the rights to make necessary changes to the syllabus. If so, the changes will be announced as soon as possible.