



**O.P. Jindal Global University**  
*A Private University Promoting Public Service*

**BFXU-03-BCM-DNA3170 – Pricing Analytics**  
**Cross-Elective – Fall 2026**

**Course Information**

**Course Duration: 1 Semester**

Credit Hours: 4 credits

Meetings: \_

Location: \_

Prerequisites: Well-versed with intermediate level of Statistics, Mathematics and Excel

Equivalent Courses:

Exclusive Courses:

**Instructor Information**

**Instructor: Nishika Bhatia**

Biography: Associate Professor and Assistant Dean (International Strategy), JSBF

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**1. Course Description**

In business and financial institutions, a key decision is how to price their products and assets? Firms want to find the best price for selling their product or service, whether it is an existing one or a new product in the market. Optimal prices can be obtained using techniques of pricing analytics to investigate large amounts of business and financial data. Pricing analytics involves systematic usage of computational tools like statistics, economics, and mathematics. These tools help in finding meaningful patterns in data to improve pricing strategies. In this course, we will cover elementary knowledge of pricing analytics background of price elasticities. The concept of market demand curve and profit maximization will be studied in detail. Methodologies like customer choice modelling and conjoint analysis are promoted by practitioners and will be a part of the course. There will be emphasis on real-life case studies to get a wholesome understanding of pricing analytics. The aim of the course is to make students aware of the background, mechanics, and applications of pricing analytics. This course is ideal for students aiming to pursue higher studies or professional roles in finance, economics, operations research, data, and business analytics.

**2. Course Intended Learning Objectives(Aim)**

Course Intended Learning Outcomes	Teaching and Learning Activities	Assessments/ Activities
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CLO1 Students will learn about the structure behind pricing problems	Lectures and case studies	Assignments
CLO2 Students will be able to frame pricing decision problems mathematically	Lectures and case studies	Assignments
CLO3 Students will be able to solve problems using optimization techniques.	Lectures and case studies	Assignments
CLO4 Students will be able to analyse impact of customer choices on pricing decision using customer choice modelling	Lectures and case studies	Assignments

### 3. Scheme of Evaluation and Grading

#### Evaluation breakup: Continuous assessment

The assessment details are indicative. Any changes will be communicated to the students well ahead of time, through mail.

Assessment Task	Weightage	Nature	Week of Assessment
Assignment 1	25	Individual	5
Assignment 2	25	Individual	10
Project	50	Group	Continuous

**Description of Assessments:** Assessment will be mostly case study based. Case studies and data of firms facing certain business challenges will be shared. The students will be required to use the knowledge from the course to solve the problem. Solutions will involve building quantitative and data analytical models and then applying them in Excel.

### Grade Definition

Grade	Percentage of Marks	Grade Points	Grade Description
O	80% and above	8	<b>Outstanding</b> – Exceptional knowledge of the subject matter, thorough understanding of issues; ability to synthesize ideas, rules and principles and extraordinary critical and analytical ability
A+	75% – 79.75%	7.5	<b>Excellent</b> - Sound knowledge of the subject matter, thorough understanding of issues; ability to synthesize ideas, rules and principles and critical and analytical ability
A	70% – 74.75%	7	<b>Very Good</b> - Sound knowledge of the subject matter, excellent organizational capacity, ability to synthesize ideas, rules and principles, critically analyse existing materials and originality in thinking and presentation
A-	65% – 69.75%	6	<b>Good</b> - Good understanding of the subject matter, ability to identify issues and provide balanced solutions to problems and good critical and analytical skills
B+	60% – 64.75%	5	<b>Fair</b> – Average understanding of the subject matter, limited ability to identify issues and provide solutions to problems and reasonable critical and analytical skills
B	55% – 59.75%	4	<b>Acceptable</b> - Adequate knowledge of the subject matter to go to the next level of study and reasonable critical and analytical skills.
B-	50% – 54.75%	3	<b>Marginal</b> - Limited knowledge of the subject matter and irrelevant use of materials and, poor critical and analytical skills
P1 or C	45% – 49.75%	2	<b>Pass 1:</b> Pass with Basic understanding of the subject matter.
P2 or D	40% – 44.75%	1	<b>Pass 2:</b> Pass with Rudimentary understanding of the subject matter.
F	Below 40%	0	<b>Fail:</b> Poor comprehension of the subject matter; poor critical and analytical skills and marginal use of the relevant materials. Will require repeating the course.
P	Pass	"Pass" in a pass/fail course.	"P" represents the option of choosing between Pass/Fail grading system over the CGPA grading system in the COVID 19 semester in Spring 2020. The option is provided when students attain a minimum of 40 percentage marks under the current grading structure in a given subject.
I	Incomplete		Extenuating circumstances preventing the student from completing coursework assessment, or taking the examination; or where the Assessment Panel at its discretion assigns this grade. If an "I" grade is assigned, the Assessment Panel will suggest a schedule for the completion of work, or a supplementary examination.

### 4. Academic Integrity

**Academic Integrity and Plagiarism:** Learning and knowledge production of any kind is a collaborative process. Collaboration demands an ethical responsibility to acknowledge who we have learnt from, what we have learned, and how reading and learning from others have helped us shape our own ideas. Even our own

ideas demand an acknowledgement of the sources and processes through which those ideas have emerged. Thus, all ideas must be supported by citations. All ideas borrowed from articles, books, journals, magazines, case laws, statutes, photographs, films, paintings, etc., in print or online, must be credited with the original source. If the source or inspiration of your idea is a friend, a casual chat, something that you overheard, or heard being discussed at a conference or in class, even they must be duly credited. If you paraphrase or directly quote from a web source in the examination, presentation or essays, the source must be acknowledged. The university has a framework to deal with cases of plagiarism. All form of plagiarism will be taken seriously by the University and prescribed sanctions will be imposed on those who commit plagiarism.

**Disability Support and Accommodation Requirements:** JGU endeavours to make all its courses accessible to students. All students with any known disability needing academic accommodation are required to register with the Disability Support Committee [dsc@jgu.edu.in](mailto:dsc@jgu.edu.in). The Committee has so far identified the following conditions that could possibly hinder student's overall well-being. These include physical and mobility related difficulties; visual impairment; hearing impairment; medical conditions; specific learning difficulties e.g., dyslexia; mental health. The Disability Support Committee maintains strict confidentiality of its discussions. Students should preferably register with the Committee during the month of June/January as disability accommodation requires early planning. DSC will approve of and coordinate all disability related services such as appointment of academic mentors, arranging infrastructural facilities, and course related requirements such as special lectures, tutorials, and examinations.

**Safe Space Pledge:** This course may discuss a range of issues and events that might result in distress for some students. Discussions in the course might also provoke strong emotional responses. To make sure that all students collectively benefit from the course, and do not feel disturbed due to either the content of the course or the conduct of the discussions. Therefore, it is incumbent upon all within the classroom to pledge to maintain respect towards our peers. This does not mean that you need to feel restrained about what you feel and what you want to say. Conversely, this is about creating a safe space where everyone can speak and learn without inhibitions and fear. This responsibility lies not only with students, but also with the instructor.

## **5. Keyword Syllabus:** Management Science, Operations, Supply Chain Networks, Optimisation, Analytics

## **6. Course Material**

- a. Bodea, T. and Ferguson, M., 2014. *Segmentation, revenue management and pricing analytics*. Routledge.
- b. Gallego, G. and Topaloglu, H., 2019. *Revenue management and pricing analytics* (Vol. 209). New York, NY: Springer.
- c. Paczkowski, W.R., 2018. *Pricing analytics: Models and advanced quantitative techniques for product pricing*. Routledge.
- d. Taha, H.A., 2011. *Operations research: an introduction* (Vol. 790). Upper Saddle River, NJ, USA: Pearson/Prentice Hall.
- e. Winston, W.L., 1987. *Operations research: applications and algorithms* (No. 510 W783). Duxbury Press.
- f. Chen, X. and Simchi-Levi, D., 2012. Pricing and inventory management. *The Oxford handbook of pricing management, 1*, pp.784-824.

## 7. Session Plan

Session Details		CLOs Covered
<i>Week 1</i>	<i>Introduction to Pricing Theory</i>	CLO1
Objective of the session	To introduce the foundations of pricing theory. Different pricing strategies will be discussed.	
Readings	Chapter 1 from Paczkowski, 2018 and Chapter 8 from Gallego & Topaloglu, 2019	
Case Title and Number	NA	
Pedagogy	Lecture/ class discussion	
<i>Week 2-3</i>	<i>Introduction to Optimization</i>	CLO2-3
Objective of the session	To introduce the basics of optimization to students. They will learn how to mathematically formulate decision-making problem and solving them using Excel. The focus will be on profit maximization.	
Readings	Chapters 1 and 3 from Winston, 2004 <a href="https://www.fm-magazine.com/issues/2019/feb/linear-programming-microsoft-excel.html">https://www.fm-magazine.com/issues/2019/feb/linear-programming-microsoft-excel.html</a>	
Case Title and Number	NA	
Pedagogy	Lecture/ class discussion	
<i>Week 4</i>	<i>Price Optimization</i>	CLO1-3
Objective of the session	Students will be introduced to pricing decision-making problems. They will use optimization to solve pricing problems and derive different pricing strategies.	
Readings	Chapter 3.2 from Paczkowski, 2018 and Chapter 8 from Gallego & Topaloglu, 2019	
Case Title and Number	NA	
Pedagogy	Lecture/ class discussion	
<i>Week 5</i>	<i>Inventory Management</i>	CLO2
Objective of the session	Students will be introduced to inventory management and its related models like EOQ, EPQ and single period inventory model	
Readings	Chapters 15 and 16 from Winston, 2004	
Case Title and Number	NA	
Pedagogy	Lecture/ class discussion	
<i>Week 6</i>	<i>Pricing and inventory management</i>	CLO1-2
Objective of the session	Significance and applications of joint inventory and pricing models will be discussed.	
Readings	Chen Simchi-Levi, 2012	
Case Title and Number	NA	
Pedagogy	Lecture/ class discussion	
<i>Week 7 - 8</i>	<i>Customer choice modelling</i>	CLO1-4
Objective of the session	Basics of customer choice models (Utility functions and logit models) will be introduced.	
Readings	Chapter 5 from Paczkowski, 2018, Chapter 4 from Gallego & Topaloglu, 2019, Chapter 1 from Bodea & Ferguson 2014	
Case Title and Number	NA	
Pedagogy	Lecture/ class discussion	

<i>Week 9</i>	<i>Dynamic Programming</i>	
Objective of the session	Basics of dynamic programming will be discussed.	CLO2
Readings	Chapters 1 and 3 from Winston, 2004	
Pedagogy	Lecture/Class Discussion/Hands on Exercises	
<i>Week 10-12</i>	<i>Dynamic Pricing</i>	
Objective of the session	Dynamic pricing will be introduced, its benefits and applications will be discussed. Markdown and dynamic pricing will also be reviewed.	CLO1-4
Reading	Chapter 9 from Gallego & Topaloglu, 2019, Chapter 7 from Bodea & Ferguson 2014	
Pedagogy	Lecture/Class Discussion	
<i>Week 13-14</i>	<i>Project Discussion</i>	
Objective of the session	Case studies will be discussed.	CLO1-4
Reading	Chapter 1 from Bodea & Ferguson 2014, Chapter 5 from Paczkowski, 2018 and Chapter 4 from Gallego & Topaloglu, 2019	
Pedagogy	Lecture/Class Discussion	
<i>Week 15</i>	<i>Revision</i>	
Objective of the session	Revision classes will be conducted.	
Reading		
Pedagogy	Lecture/Class Discussion	