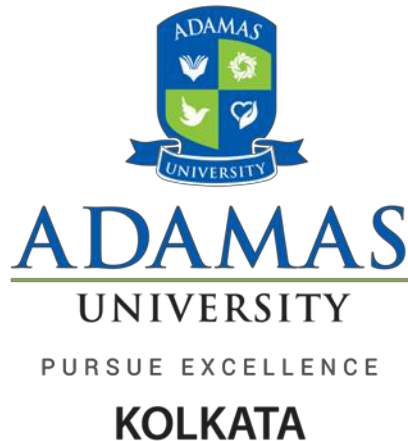




ADAMAS UNIVERSITY

SCHOOL OF ENGINEERING & TECHNOLOGY

Department of Civil Engineering

**M.Tech. Construction Engineering &
Management Programme**

Course File (Theory)

**Course Code & Name: ECE61123 & Management
Principles and Risk Analysis**

Course Coordinator: Mr. Mainak Chakraborty



Year: I
Semester
: I

1 Name of the Faculty: Mr. Mainak Chakraborty
2 Course : Management Principles and Risk Analysis
3 Program : M.Tech (CEM)
4 Target : 60%

Course Code:
BCE61123

THEORY COURSE FILE CONTENTS

Check list Course Outcomes Attainment

S. No.	Contents	Available (Y/N/NA)	Date of Submission	Signature of HOD
1.	Authenticated Syllabus Copy	Y	01.09.2020	
2.	Individual Time Table	Y		
3.	Students' Name List (Approved Copy)	Y		
4.	Course Plan, PO, PSO, COs, CO-PO Mapping, COA Plan, Session Plan and Periodic Monitoring	Y		
5.	Previous Year End Semester Question Papers	N		
6.	Question Bank (All Units - Part A, Part B & C)	Y		
7.	Dissemination of Syllabus and Course Plan to Students	Y		
8.	Lecture Notes - Unit I, II & III	Y		
9.	Sample Documents and Evaluation Sheet for Internal Assessment – Tutorials / Assignments / Class Test / Open Book Test / Quiz / Project / Seminar / Role Play if any (Before Mid Term)	Y	18.01.2021	
10.	Mid Term Examination A. Question Paper / Any Other Assessment Tools Used B. Sample Answer Scripts (Best, Average, Poor) if required C. Evaluation Sheet D. Slow Learners List and Remedial Measures	Y		
11.	Lecture Notes – Unit IV & V	Y		
12.	Sample Documents and Evaluation Sheet for Internal Assessment – Tutorials / Assignments / Class Test / Open Book Test / Quiz / Project / Seminar / Role Play if any (After Mid Term)	Y		
13.	Course End Survey (Indirect Assessment) & Consolidation	Y		
14.	End Term Examination A. Question Paper & Answer Key B. Sample Answer Scripts (Best, Average, Poor) if required C. Evaluation Sheet D. Slow Learners List and Remedial Measures.	Y		



Year: I
Semester
: I

1 Name of the Faculty: Mr. Mainak Chakraborty Course Code: BCE61123
2 Course : Management Principles and Risk Analysis
3 Program : M.Tech (CEM)
4 Target : 60%

15.	Content Beyond the Syllabus (Proof)	Y	26.03.2021	
16.	Innovative Teaching Tools Used for TLP	Y		
17.	Details of Visiting Faculty Session / Industry Expert / Guest Lecture / Seminar / Field Visit / Webinars / Flipped Class Room / Blended Learning / Online Resources etc.	Y		
18.	Consolidated Mark Statement	Y		
19.	CO Attainment (Mid Term + Internal Assessment + End Term)	Y	After Result Declaration (07.04.2021)	
20.	Gap Analysis & Remedial Measures	Y		
21.	CO - PO Attainment	Y		
22.	Class Record (Faculty Logbook)	Y		

Mainak Chakraborty

Signature of HOD/ Dean

Signature of Faculty

Date:

Date: 12.03.2021



Year: I
Semester
: I

1	Name of the Faculty: Mr. Mainak Chakraborty	Course Code:
2	Cours	ECE61123
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4	Progra	
5	m	
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Syllabus Copy

ECE61123	Management Principles and Analysis	L	T	P	C
Version 1.0	Contact Hours - 45	2	1	0	3
Pre-requisites/Exposure	Basic Calculation Skills				
Co-requisites	--				

Course Objectives:

1. To enable students to understand concepts of Operations Research Techniques.
2. To enable students to learn problem solving skills by applying knowledge
3. To gain knowledge about different methods and techniques of production as well as financial management to be applied in real life situations.
4. To enable students to learn different problem solving and risk analysis techniques.

Course Description:

Operations Research studies analysis and planning of complex systems. This course will focus on mathematical modelling. A strong emphasis will be given to model formulation. On the methodology side, Linear and Integer Programming techniques will be introduced. At the end of the course, students will have the skills to build their own formulations, to expand existing solution technique for a given formulation. Likewise, this course will provide emphasis on project planning using PERT CPM and other two most important decision making techniques like working capital management and financial management.

Course Content:

UNIT – I

[9 Lecture Hours]

Introduction: Operations Research - Introduction to Operations Research - Linear Programming - Graphical and Simplex Methods.

UNIT – II

[9 Lecture Hours]

Optimality Analysis: Duality and Post - Optimality Analysis - Transportation and Assignment



Year: I
Semester
: I

1	Name of the Faculty: Mr. Mainak Chakraborty	Course Code:
2	Cours	BCE61123
3	e	
4	Progra	
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Problems.

UNIT – III

[9 Lecture Hours]

Production and Financial Management: Inventory Control - EOQ - Quantity Discounts - Safety Stock - Replacement Theory -PERT and CPM - Simulation Models - Quality Control.

UNIT – IV

[9 Lecture Hours]

Working Capital Management: Compound Interest and Present Value methods -Discounted Cash Flow Techniques - Capital Budgeting.

UNIT – V

[9 Lecture Hours]

Decision Theory and Managerial Economics: Decision Theory - Decision Rules - Decision making under conditions of certainty, risk and uncertainty - Decision trees - Utility Theory. Cost Concepts - Break-even analysis - Pricing Techniques - Game Theory Applications.

Text Books:

1. Vohra, N.D. "Quantitative Techniques in Management", Tata McGraw-Hill Company Ltd, New Delhi, 1990
2. Sehroeder, R.G. "Operations Management", McGraw-Hill, New York, 1982.

Reference Books:

1. Levin, R.I, Rubin, D.S. and Stinson, J. "Quantitative Approaches to Management", McGraw-Hill Book Co., New York, 1988.



Year: I
Semester
: I

1 **Name of the Faculty:** Mr. Mainak Chakraborty
2 **Course** : Management Principles and Risk Analysis
3 **Program** : M.Tech (CEM)
4 **Target** : 60%

Course Code:
ECE61123

Faculty Individual Time **Table**

ADAMAS UNIVERSITY, KOLKATA								
SCHOOL OF ENGINEERING & TECHNOLOGY								
DEPARTMENT OF CIVIL ENGINEERING								
M. Tech (Construction Engineering & Management)								
Course Code & Course: ECE61123 & Management Principles and Risk Analysis Faculty Coordinator: Mainak Chakraborty (MC)								
Day & Time	10.30 - 11.20	11.20 - 12.10	12.10 - 01.00	01.00 - 01.50	01.50 - 02.40	02.40 - 03.30	03.30 - 04.20	04.20 - 05.10
Monday				L U N C H			MPRA (MC)	
Tuesday								
Wednesday	MPRA (MC)							
Thursday								MPRA (MC)
Friday	-							

Signature of HOD

Date: 01.09.2020

Signature of Class Coordinator

Date: 01.09.2020



Year: I
Semester
: I

1 Name of the Faculty: Mr. Mainak Chakraborty Course Code: BCE61123
2 Course : Management Principles and Risk Analysis
3 Program : M.Tech (CEM)
4 Target : 60%

Students Name

List

Roll Number	Registration Number	Name of the Student
PG/02/MTCOEM/2020/001	AU/2020/0004499	Anindya Ghosh

Signature of HOD/Dean

Date: 01.09.2020

Signature of Class Coordinator

Date: 01.09.2020



Year: I
Semester
: I

1 Name of the Faculty: Mr. Mainak Chakraborty
2 Course : Management Principles and Risk Analysis
3 Program : M.Tech (CEM)
4 Target : 60%

Course Code:
BCE61123

COURSE

PLAN

Target	60% (marks)
Level-1	50% (population)
Level-2	60% (population)
Level-3	70% (population)

1. Method of Evaluation

PG
Internal Assessment (30%) (Quizzes/Tests, Assignments & Seminars etc.)
Mid Semester Examination (20%)
End Semester Examination (50%)

2. Passing Criteria

Scale	PG
Out of 10 Point Scale	CGPA – “5.00” Min. Individual Course Grade – “C” Passing Minimum – 40

3. Pedagogy

- **Direct Instruction**
- Kinesthetic Learning
- **Flipped Classroom**
- Differentiated Instruction
- Expeditionary Learning
- Inquiry Based Learning
- Game Based Learning
- Personalized Learning

4. Topics introduced for the first time in the program through this course

- (New Topic – Content Beyond Syllabus – Lean Construction)

5. References:

Text Books	Web Resources	Journals	Reference Books
2	0	0	1

Signature of HOD/Dean

Date: 01.09.2020

Signature of Faculty

Date: 01.09.2020



Year: I
Semester
: I

1	Name of the Faculty: Mr. Mainak Chakraborty	Course Code:
2	Cours	BCE61123
3	e	: Management Principles and Risk Analysis
4	Progra	
5	m	: M.Tech (CEM)
6	Target	: 60%

GUIDELINES TO STUDY THE SUBJECT

Instructions to Students:

1. Go through the 'Syllabus' in the LMS in order to find out the Reading List.
2. Get your schedule and try to pace your studies as close to the timeline as possible.
3. Get your on-line lecture notes (Content, videos) at Lecture Notes section. These are our lecture notes. Make sure you use them during this course.
4. check your LMS regularly
5. go through study material
6. check mails and announcements on blackboard
7. keep updated with the posts, assignments and examinations which shall be conducted on the blackboard
8. Be regular, so that you do not suffer in any way
9. **Cell Phones and other Electronic Communication Devices:** Cell phones and other electronic communication devices (such as Blackberries/Laptops) are not permitted in classes during Tests or the Mid/Final Examination. Such devices MUST be turned off in the class room.
10. **E-Mail and online learning tool:** Each student in the class should have an e-mail id and a pass word to access the LMS system regularly. Regularly, important information – Date of conducting class tests, guest lectures, via online learning tool. The best way to arrange meetings with us or ask specific questions is by email and prior appointment. All the assignments preferably should be uploaded on online learning tool. Various research papers/reference material will be mailed/uploaded on online learning platform time to time.
11. **Attendance:** Students are required to have minimum attendance of 75% in each subject. Students with less than said percentage shall NOT be allowed to appear in the end semester examination.

This much should be enough to get you organized and on your way to having a great semester! If you need us for anything, send your feedback through e-mail mainak1.chakraborty@adamasuniversity.ac.in. Please use an appropriate subject line to indicate your message details.

There will no doubt be many more activities in the coming weeks. So, to keep up to date with all the latest developments, please keep visiting this website regularly.



Year: I
Semester
: I

1 Name of the Faculty: Mr. Mainak Chakraborty
2 Course : Management Principles and Risk Analysis
3 Program : M.Tech (CEM)
4 Target : 60%

Course Code:
BCE61123

RELATED OUTCOMES

1. The expected outcomes of the Program are:

P01	Domain Knowledge: Apply comprehensive knowledge of theories, concepts and principles for effective control and management of construction industry projects.
P02	Problem Analysis: Identify and analyze the strategic importance of construction projects and its problems in the perspectives of client, context and constraints and obtain solution using mathematics, engineering and management principles.
P03	Design/Development of Solutions: Planning, scheduling, and control of construction projects by managing resources and constraints with appropriate consideration for the public health and safety, and the cultural, societal, and economical considerations.
P04	Conduct Investigations of Complex Problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
P05	Modern Tool Usage: Create, select, and apply appropriate techniques, resources, and modern IT prediction and simulation tools for construction projects.
P06	Project Management, Governance and Finance: Create comprehensive understanding of the techniques associated with the management of resources and finance, assessment and management of risk and subsequent corporate governance as appropriate to a project manager operating in the construction industry.
P07	Ethics and Environment: Understand the impact of residential, commercial, industrial and infrastructural projects in societal, ethical and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
P08	Individual and Team Work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
P09	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
P010	Life-long Learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

2. The expected outcomes of the Specific Program are: (up to 3)

PS01	PG itself a Specific Programme. Henceforth no PSO is Required
PS02	
PS03	



Year: I
Semester
: I

1	Name of the Faculty: Mr. Mainak Chakraborty	Course Code: ECE61123
2	Course : Management Principles and Risk Analysis	
3	Program : M.Tech (CEM)	
4	Target : 60%	

3. The expected outcomes of the Course are:

CO - ECE61123 - 1	Understand the concepts of Operations Research.
CO - ECE61123 - 2	Demonstrate skills to test for optimality as well as other decision-making environments.
CO - ECE61123 - 3	Analyze production and operations management techniques as well as working capital management and inventory control techniques.
CO - ECE61123 - 4	Understand the complexities associated with decision theories and managerial economics.

4. Co-Relationship Matrix

Indicate the relationships by 1- Slight (Low) 2- Moderate (Medium) 3-Substantial (High)

Program Outcomes Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
C01	3	3	2	-	-	-	-	1	3	-
C02	3	3	2	3	-	-	2	-	3	-
C03	3	-	-	3	-	1	-	-	-	1
C04	3	3	-	3	-	-	2	-	-	-
Average	3	3	2	3	-	1	2	1	3	1



Year: I
Semester
: I

1	Name of the Faculty: Mr. Mainak Chakraborty	Course Code:
2	Cours	BCE61123
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5. Course Outcomes Assessment Plan (COA):

Course Outcomes	Internal Assessment* (30 Marks)		Mid Term Exam (20 Marks)	End Term Exam (50 Marks)	Total (100 Marks)
	Before Mid Term	After Mid Term			
CO1	5	NA	7	8	20
CO2	5	NA	7	8	20
CO3	3	3	6	8	20
CO4	NA	7	NA	13	20
Total	13	17	20	50	100

* Internal Assessment – Tools Used: Assignment and Class Test



Year: I
Semester : I

1 Name of the Faculty: Mr. Mainak Chakraborty
2 Course : Management Principles and Risk Analysis
3 Program : M.Tech (CEM)
4 Target : 60%

Course Code:
BCE61123

OVERVIEW OF COURSE PLAN OF COURSE COVERAGE

Course Activities:

S. No.	Description	Planned			Actual			Remarks
		From	To	No. of Session	From	TO	No. of Session	
1.	Introduction to OR	01.09.2020	24.09.2020	9	01.09.2020	24.09.2020	9	Completed As per Plan
2.	Optimality Analysis	28.09.2020	27.10.2020	9	28.09.2020	27.10.2020	9	Completed As per Plan
3.	Production and Financial Management	29.10.2020	24.11.2020	9	29.10.2020	24.11.2020	9	Completed As per Plan
4.	Working Capital Management	26.11.2020	04.01.2021	9	26.11.2020	04.01.2021	9	Completed As per Plan
5.	Decision Theory and Managerial Economics	05.01.2021	25.02.2021	9	05.01.2021	25.02.2021	9	Completed As per Plan

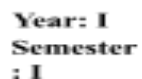
Total No. of Instructional periods available for the course: 45 Sessions

Signature of HOD/Dean

Date: 01.09.2020

Signature of Faculty

Date: 01.09.2020



Course Code:
ECE6125

2	Cours	: Construction Planning, Scheduling &
3	e	Control
4	Program	: M.Tech (CEM)
5	Target	: 60%

1. **Introduction**
 2. **Background**
 3. **Methodology**
 4. **Results**
 5. **Discussion**
 6. **Conclusion**
 7. **References**
 8. **Appendix**
 9. **Figure 1**
 10. **Figure 2**
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 217. **Figure 209**

SESSION

PLAN

UNIT-I

Remarks: NA

Signature of Faculty

Date: 24.09.2020



Year: I
Semester
: I

1. Name of the Faculty: Dr. T. Senthil
2. Vadivel
3. Course : Construction Planning, Scheduling &
4. Control
5. Program : M.Tech (CEM)
6. Target : 60%

Course Code:
ECE61125

SESSION
PLAN

UNIT-II

Session Plan				Actual Delivery			
Lect.	Date	Topics to be Covered	CO Mapped	Lect.	Date	Topics Covered	CO Achieved
1	28.09.2020	Duality and Post Duality Analysis	C02	1	28.09.2020	Duality and Post Duality Analysis	C02
2	29.09.2020	Duality and Post Duality Analysis	C02	2	29.09.2020	Duality and Post Duality Analysis	C02
3	01.10.2020	Duality and Post Duality Analysis	C02	3	01.10.2020	Duality and Post Duality Analysis	C02
4	06.10.2020	Optimality Analysis	C02	4	06.10.2020	Optimality Analysis	C02
5	08.10.2020	Optimality Analysis	C02	5	08.10.2020	Optimality Analysis	C02
6	12.10.2020	Optimality Analysis	C02	6	12.10.2020	Optimality Analysis	C02
7	19.10.2020	Assignment Problems	C02	7	19.10.2020	Assignment Problems	C02
8	20.10.2020	Assignment Problems	C02	8	20.10.2020	Assignment Problems	C02
9	27.10.2020	Assignment Problems	C02	9	27.10.2020	Assignment Problems	C02

Remarks: NA

Signature of Faculty

Date: 27.10.2020



Year: I
Semester
: I

1. Name of the Faculty: Dr. T. Senthil
Vadivel
2. Course : Construction Planning, Scheduling &
Control
3. Program : M.Tech (CEM)
4. Target : 60%

Course Code:
ECE61125

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**SESSION
PLAN**

UNIT-III

Session Plan				Actual Delivery			
Lect.	Date	Topics to be Covered	CO Mapped	Lect.	Date	Topics Covered	CO Achieved
1	29.10.2020	Inventory Control - EOQ - Quantity Discounts - Safety Stock	C03	1	29.10.2020	Cost Control Problem	C03
2	02.11.2020	Inventory Control - EOQ - Quantity Discounts - Safety Stock	C03	2	02.11.2020	Project Budget	C03
3	03.11.2020	Replacement Theory	C03	3	03.11.2020	Forecasting for Activity Cost Control	C03
4	09.11.2020	Replacement Theory	C03	4	09.11.2020	Financial Accounting Systems	C03
5	10.11.2020	PERT and CPM	C03	5	10.11.2020	Cost Accounts	C03
6	12.11.2020	PERT and CPM	C03	6	12.11.2020	Control of Project Cash Flows	C03
7	17.11.2020	PERT and CPM	C03	7	17.11.2020	Schedule Control	C03
8	19.11.2020	Simulation Models - Quality Control	C03	8	19.11.2020	Schedule and Budget Updates	C03
9	24.11.2020	Simulation Models - Quality Control	C03	9	24.11.2020	Relating Cost and Schedule Information	C03

Remarks: NA

Signature of Faculty



Year: I
Semester
: I

1. Name of the Faculty: Dr. T. Senthil
Vadivel

Course Code:
ECE61125

2. Course : Construction Planning, Scheduling &
e Control

3. Program : M.Tech (CEM)

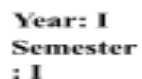
4. Target : 60%

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SESSION

PLAN

Date: 24.11.2020



Course Code:
ECE6125

2	Cours	: Construction Planning, Scheduling &
3	e	Control
3	Progra	: M.Tech (CEM)
4	m	
4	Target	: 60%

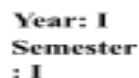
UNIT-IV

Session Plan				Actual Delivery			
Lect.	Date	Topics to be Covered	CO Mapped	Lect.	Date	Topics Covered	CO Achieved
1	26.11.2020	Compound Interest	CO4	1	26.11.2020	Compound Interest	CO4
2	01.12.2020	PV Method	CO4	2	01.12.2020	PV Method	CO4
3	03.12.2020	PV Method – Annuity	CO4	3	03.12.2020	PV Method – Annuity	CO4
4	08.12.2020	Discounted Cash Flow Techniques	CO4	4	08.12.2020	Discounted Cash Flow Techniques	CO4
5	10.12.2020	Discounted Cash Flow Techniques	CO4	5	10.12.2020	Discounted Cash Flow Techniques	CO4
6	14.12.2020	Discounted Cash Flow Techniques	CO4	6	14.12.2020	Discounted Cash Flow Techniques	CO4
7	21.12.2020	NPV	CO4	7	21.12.2020	NPV	CO4
8	22.12.2020	IRR	CO4	8	22.12.2020	IRR	CO4
9	04.01.2021	PI	CO4	9	04.01.2021	PI	CO4

Remarks: NA

Signature of Faculty

Date: 04.01.2021



Course Code: **ECE6125**

2	Cours	: Construction Planning, Scheduling &
3	e	Control
4	Program	: M.Tech (CEM)
5	Target	: 60%

SESSION PLAN

UNIT-V

Session Plan				Actual Delivery			
Lect.	Date	Topics to be Covered	CO Mapped	Lect.	Date	Topics Covered	CO Achieved
1	05.01.2021	Decision Theory - Decision Rules - Decision making under conditions of certainty, risk and uncertainty	C05	1	05.01.2021	Decision Theory - Decision Rules - Decision making under conditions of certainty, risk and uncertainty	C05
2	07.01.2021	Decision Theory - Decision Rules - Decision making under conditions of certainty, risk and uncertainty	C05	2	07.01.2021	Decision Theory - Decision Rules - Decision making under conditions of certainty, risk and uncertainty	C05
3	18.01.2021	Decision Theory - Decision Rules - Decision making under conditions of certainty, risk and uncertainty	C05	3	18.01.2021	Decision Theory - Decision Rules - Decision making under conditions of certainty, risk and uncertainty	C05
4	21.01.2021	Decision Tree – utility theory	C05	4	21.01.2021	Decision Tree – utility theory	C05
5	01.02.2021	Decision Tree – cost concepts	C05	5	01.02.2021	Decision Tree – cost concepts	C05
6	04.02.2021	BEP Analysis	C05	6	04.02.2021	BEP Analysis	C05
7	08.02.2021	Pricing Technique	C05	7	08.02.2021	Pricing Technique	C05
8	11.02.2021	Game Theory Applications	C05	8	11.02.2021	Game Theory Applications	C05
9	25.02.2021	Game Theory Applications	C05	9	25.02.2021	Game Theory Applications	C05



Year: I
Semester
: I

1. Name of the Faculty: Dr. T. Senthil
Vadivel

Course Code:
ECE61125

2. Course : Construction Planning, Scheduling &
e Control

3. Program : M.Tech (CEM)

4. Target : 60%

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SESSION
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Remarks: NA

Signature of Faculty

Date: 25.02.2021



Year: I
Semester
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1. Name of the Faculty: Dr. T. Senthil
Vadivel
2. Course : Construction Planning, Scheduling &
Control
3. Program : M.Tech (CEM)
4. Target : 60%

Course Code:
BCE61125

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PERIODIC
MONITORING

Actual date of completion and remarks, if any

Components		From	To	From	To
Duration (Mention from and to Dates)		01.09.2020	16.01.2021	18.01.2021	22.03.2021
Percentage of Syllabus covered		50%		50%	
Lectures	Planned	1	23	24	45
	Taken	1	23	24	45
Tutorials	Planned	NA			
	Taken				
Test/Quizzes/ Mid Semester/ End Semester	Planned	1	1 (MID)	1	1 (END)
	Taken	1	1	1	1
	CO's Addressed	C01 & C02	C01, C02 & C03	C04	C01, C02, C03, C04
	CO's Achieved	C01 & C02	C01, C02 & C03	C04	C01, C02, C03, C04
Assignments	Planned	1	1		1
	Taken	1	1		1
	CO's Addressed	C01 & C02	C03	C03	C04
	CO's Achieved	C01 & C02	C03	C03	C04
Signature of Faculty					
Head of the Department					
OBE Coordinator					

Signature of HOD/ Dean

Date 26.03.2021

Signature of Faculty

Date 26.03.2021



Year: I
Semester
: I

1. Name of the Faculty: Dr. T. Senthil
Vadivel
2. Course : Construction Planning, Scheduling &
Control
3. Program : M.Tech (CEM)
4. Target : 60%

Course Code:
BCE61125

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PERIODIC
MONITORING

Attainment of the Course (Learning) Outcomes:

Components	Attainment level	Action Plan	Remarks
Assignment	C01:	Submission Target 18.11.2020	Assignment Questions Covered the Linear Programming
	C02:		
	C03:	Submission Target 16.12.2020	Covered Optimality and Duality
	C04:	Submission Target 25.02.2021	Covered Inventory Management, Capital Budgeting Decisions
Quiz/Test etc.	C01:	Conducted on 23.09.2020	Financial Management
	C02:		
	C03:	---	
	C04:	Conducted on 03.02.2021	Game Theory
Mid Semester	C01:	Scheduled on 13.01.2020	Question Bank Given for C01, and C02 to understand the Pattern of Exam
	C02:		
	C03:		
	C04:	---	NA
End Semester	C01:	Scheduled on 10.03.2021	Question Bank Given for all COs to understand the Pattern of Exam
	C02:		
	C03:		
	C04:		
Any Other	C01:		NA
	C02:		
	C03:		
	C04:		

Signature of HOD/ Dean

Date 26.03.2021

Signature of Faculty

Date 26.03.2021



Year: I
Semester
: I

1	Name of the Faculty: Dr. T. Senthil	Course Code:
2	Vadivel	BCE61125
3	Cours	: Construction Planning, Scheduling &
4	e	Control
5	Progra	: M.Tech (CEM)
6	m	: 60%
7	Target	

Previous Year Question Papers – Set 1



Previous Year Question Papers - Set 2





Year: I
Semester
: I

1	Name of the Faculty: Dr. T. Senthil	Course Code:
2	Vadivel	BCE61125
3	Cours	IL-
4	e	CS-
5	Progra	IT-
6	m	CP-
7	Target	IP-
8		CS-
9		IT-
10		CP-
11		IP-

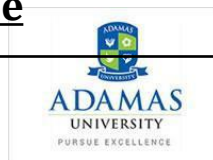


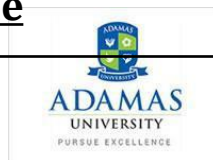
Year: I
Semester
: I

1 Name of the Faculty: Dr. T. Senthil
2 Vadivel
3 Course : Construction Planning, Scheduling &
4 Control
Program : M.Tech (CEM)
Target : 60%

Course Code:
ECE61125

Question Bank Sample



				
School: School of Engineering & Technology Department: Civil Engineering Course Code: ECE61123 Course Name: Management Principles and Risk Analysis Program: M.Tech (CEM) Semester: I				
UNIT NUMBER: I UNIT NAME: Introduction to OR				
Sl. No.	Question	Level of Difficulty (Easy/Medium/Difficult)	Knowledge Level (Bloom's Taxonomy)	Course Outcome (CO)
Part A (Multiple Choice Questions) (1 mark each)				
1.	OR involves Statistical Techniques: (a) True (b) False	Easy	Remember	CO1
2.	Simplex Method includes Objective function – (a) True (b) False	Medium	Remember	CO1
3.	Simplex Method may include Duality (a) True (b) False	Difficult	Remember	CO1
Part B (Definition/Naming Questions) (2 marks each)				
1.	Explain Linear Method	Easy	Understand	CO1
2.	Define Objective Function	Medium	Understand	CO1
3.	What are the steps involved in objective function generation?	Difficult	Understand	CO1
Part C (Short Questions) (3-4 marks each)				
1.	What are the constraints?	Easy	Remember	CO1
2.	Illustrate the use of Slack Variables.	Medium	Understand	CO1
3.	Develop the sequence of solving a graphical problem under Linear programming.	Difficult	Apply	CO1



Year: I
Semester
: I

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Vadivel
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4. Target : 60%

Course Code:
ECE61125

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Part D (Explanation Based Questions) (5 marks each)				
1.	Explain the steps involved in solving LPP Using Graphical method? And also write the applications of Operations research.	Easy	Understand	C01
2.	Minimize $Z=3x_1+2x_2$ solve by graphically. Subject to $5x_1+x_2 \geq 10$ $x_1+x_2 \geq 6$ $x_1+4x_2 \geq 12$ $x_1, x_2 \geq 0$	Medium	Understand	C01
3.	Describe different aspects of OR and their application in engineering.	Difficult	Understand	C01
Part E (Problems Based Questions) (5 marks each)				
1.	Explain the steps involved in solving LPP Using Graphical method? And also write the applications of Operations research.	Easy	Understand	C01
2.	Minimize $Z=3x_1+2x_2$ solve by graphically. Subject to $5x_1+x_2 \geq 10$ $x_1+x_2 \geq 6$ $x_1+4x_2 \geq 12$ $x_1, x_2 \geq 0$	Medium	Understand	C01
3.	Describe different aspects of OR and their application in engineering.	Difficult	Understand	C01
Part F (Application Based Questions) (5-10 marks each)				
1.	A company manufactures two products A and B. Each unit of B takes twice as long to produce as one unit of A and if the company were to produce only A it would have time to produce 2000 units per day. The availability of the raw material is sufficient to produce 1500 units per day of both A and B combined. Product B recurring a special Ingredient only 600 units can be made per day. If A fetches a profit of Rs.2 per unit and B a profit of Rs.4 per unit, Formulate the optimum product min.	Easy	Understand	C01
2.	A person requires at least 10 and 12 units of chemicals A and B respectively, for his garden. A liquid product contains 5 and 2 units of A and B respectively per bottle. A dry product contains 1 and 4 units of A and B respectively per box. The liquid products are sold for Rs. 30 per bottle, dry products are sold for Rs. 40 per box. How many of each should be purchased in order to minimize the cost and meet the requirements? Formulate the L.P.P.	Medium	Understand & Apply	C01



Year: I
Semester
: I

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Vadivel
2. Course : Construction Planning, Scheduling &
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3. Program : M.Tech (CEM)
4. Target : 60%

Course Code:
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3.	A paper mill produces 2 grades of paper namely x and y. Because of raw material restrictions, it cannot produce more than 400 tonnes of grade x and 300 tonnes of grade y in a week. There are 160 production hours in a week. It requires 0.2 hours and 1.4 hours to produce a tone of product x and y respectively, with corresponding profits of Rs.200 and Rs.500 per ton. Formulate the above LPP to maximize the profit using the graphical method.	Difficult	Apply & Analyze	C01
Part G (Short Notes) (5 marks each)				
1.	Write a note on Objective Function.	Easy	Understand	C01
2.	Give a note on Profitability Analysis.	Medium	Understand	C01
3.	Short Notes on Uses of Linear Programming in Engineering	Difficult	Understand	C01



Year: I
Semester
: I

1	Name of the Faculty: Dr. T. Senthil	Course Code:
2	Vadivel	BCE61125
3	Cours	: Construction Planning, Scheduling &
4	e	Control
5	Progra	: M.Tech (CEM)
6	m	: 60%
7	Target	

Lecture Notes – Sample

Lecture Notes on Construction Planning, Scheduling & Control

Video Lectures Link – Blended Learning & Flipped Classroom

<https://drive.google.com/drive/folders/17dH-UqnPs8cn1-M-iJ7quWygeHyId1LG?usp=sharing>



Year: I
Semester
: I

1 Name of the Faculty: Dr. T. Senthil
Vadivel
2 Course : Construction Planning, Scheduling &
3 Control
4 Program : M.Tech (CEM)
Target : 60%

Course Code:
BCE61125

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Internal Assessment – Assignment I

PART A SHORT ANSWERS	
1	Define Operations Research. (C01)
2	What is linear programming. (C01)
3	What are slack and surplus variables? (C01)
4	Find the dual of the following LPP. Max $Z = x_1 + 2x_2 + x_3$ Subject to $2x_1 + x_2 - x_3 \leq 2$ $-2x_1 + x_2 - 5x_3 \geq -6$ $4x_1 + x_2 + x_3 \leq 6$ $x_1, x_2, x_3 \geq 0$ (C02)
5	List out the methods used to obtain initial basic feasible solution in Transportation Problem (C02)
6	Define an assignment Problem (C02)
7	What are the phases of an operations research study (C01)
8	Define Duality in LPP (C02)
9	Define Decision variable (C01)
10	What is the difference between feasible solution and basic feasible solution? (C01)
11	What do you mean by standard form of LPP (C01)
12	What do you mean by canonical form of LPP (C01)
13	What do you mean by degeneracy in a Transportation Problem (C02)
14	State the difference between the Transportation Problem and Assignment. Problem (C01)
15	What is Two phase method (C02)
PART B LONG ANSWERS	
1	What do you mean by an unbalanced Transportation Problem (C02)
2	With an example, describe how to convert the minimization problem into maximization problem in Simplex method (C01)
3	What are the applications of O.R. (C01)



Year: I
Semester
: I

1. Name of the Faculty: Dr. T. Senthil
2. Course : Construction Planning, Scheduling &
3. Program : M.Tech (CEM)
4. Target : 60%

Course Code:
BCE61125

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4	Stages in Duality Analysis (CO1)
5	What is optimality test in transportation problem (CO2)
6	Define Artificial Variable (CO1)
7	Minimize $Z=3x_1+2x_2$ solve by graphically. Subject to $5x_1+x_2 \geq 10$ $x_1+x_2 \geq 6$ $x_1+4x_2 \geq 12$ $x_1, x_2, \geq 0$ (CO1)
8	Write the steps involved in solving LPP Using Graphical method? And also write the applications of Operations Research. (CO1)
9	A Manufacturer produces two types of models M1 and M2. Each model of the type M1 requires 4 hours of grinding and 2 hours of polishing, whereas each model of the type M2 requires 2 hours of grinding and 5 hours of polishing. The manufacturer has 2 grinders and 3 polishers. Each grinder works 40 hours a week and each polisher works for 60 hours a week. Profit on M1 model is Rs. 3.00 and on model M2 is Rs.4.00. whatever is produced in a week is sold in the market. How should the manufacturer allocate his production capacity to the two types of models, so that he may make the maximum profit in a week? Write a suitable LPP for the above question. (CO2)
10	A company produces 2 types of hats. Every hat A require twice as much labour time as the second hat be. If the company produces only hat B then it can produce a total of 500 hats a day. The market limits daily sales of the hat A and hat B to 150 and 250 hats. The profits on hat A and B are Rs.8 and Rs.5 respectively. Solve graphically to get the optimal solution.. (CO1)
11	List the phases of OR and explain them (CO1)



Year: I
Semester
: I

1. Name of the Faculty: Dr. T. Senthil
Vadivel
2. Course : Construction Planning, Scheduling &
3. Program Control
4. Target : M.Tech (CEM)
Target : 60%

Course Code:
BCE61125

12	A company manufactures two products A and B. Each unit of B takes twice as long to produce as one unit of A and if the company were to produce only A it would have time to produce 2000 units per day. The availability of the raw material is sufficient to produce 1500 units per day of both a and B combined. Product B recurring a special Ingredient only 600units can be made per day. If A fetches a profit of Rs.2 per unit and B a profit of Rs.4 per unit, Formulate the optimum product min.																														
13	Write down the mathematical formulation for transportation problem																														
PART C CRITICAL THINKING QUESTIONS																															
1	Solve by using simplex method, Maximize Z= Max Z=4x ₁ +10x ₂ Subject to 2x ₁ +x ₂ ≤10 2x ₁ +5x ₂ ≤20 2x ₁ +3x ₂ ≤18 X ₁ ,x ₂ ≥0 (CO3)																														
2	A paper mill produces 2 grades of paper namely x and y. Because of raw material restrictions, it cannot produce more than 400 tonnes of grade x and 300 tonnes of grade y in a week. There are 160 production hours in a week. It requires 0.2 hours and 1.4 hours to produce a tone of product x and y respectively, with corresponding profits of Rs.200 and Rs.500 per ton. Formulate the above LPP to maximize the profit using the graphical method. (CO2)																														
3	Solve using Vogel's Approximation Method and perform optimality Test using MODI method. (CO2) <table><tr><td></td><td>D1</td><td>D2</td><td>D3</td><td>D4</td><td>Supply</td></tr><tr><td>O1</td><td>2</td><td>3</td><td>11</td><td>7</td><td>6</td></tr><tr><td>O2</td><td>1</td><td>0</td><td>6</td><td>1</td><td>1</td></tr><tr><td>O3</td><td>5</td><td>8</td><td>15</td><td>9</td><td>10</td></tr><tr><td>Demand</td><td>7</td><td>5</td><td>3</td><td>2</td><td>17</td></tr></table>		D1	D2	D3	D4	Supply	O1	2	3	11	7	6	O2	1	0	6	1	1	O3	5	8	15	9	10	Demand	7	5	3	2	17
	D1	D2	D3	D4	Supply																										
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O2	1	0	6	1	1																										
O3	5	8	15	9	10																										
Demand	7	5	3	2	17																										
4	Use penalty method or Big M method to solve Linear Programming Problem Minimize Z=4x ₁ +x ₂ Subject to 3x ₁ +x ₂ =3 4x ₁ +3x ₂ ≥6 x ₁ +2x ₂ ≤3 X ₁ ,x ₂ ≥0 (CO2)																														

Assignment Sample



Year: I
Semester
: I

1 Name of the Faculty: Dr. T. Senthil
Vadivel
2 Course : Construction Planning, Scheduling &
3 Control
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Target : 60%

Course Code:
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	ADAMAS UNIVERSITY MID-SEMESTER EXAMINATION: JANUARY 2021 (Academic Session: 2020 – 21)		
Name of the Program:	B. Tech	Semester:	I
Paper Title:	Management Principles and Risk Analysis	Paper Code:	ECE61123
Maximum Marks:	20	Time duration:	2 Hrs
Total No of questions:	06	Total No of Pages:	01
(Any other information for the student may be mentioned here)	1. At top sheet, clearly mention Name, Univ. Roll No., Enrolment No., Paper Name & Code, Date of Exam. 2. All parts of a Question should be answered consecutively. Each Answer should start from a fresh page. 3. Assumptions made if any, should be stated clearly at the beginning of your answer.		

Answer all the Groups

Group A

Answer all the questions of the following

5×1 = 5

1. a) Define Linear Programming.
b) Define Slack variables.
c) Define Holding Cost.
d) Define Inventory
e) Define EOQ

GROUP –B

Answer any three of the following

3×5 = 15

2. State the assumptions of EOQ Model.
3. Solve the following Transportation problem using NWCM –

		Destination				Supply
		A	B	C	D	
Source	I	1	2	3	4	500
	II	5	6	7	8	200
	III	9	5	7	8	300
	Demand	200	300	300	200	



Year: I
Semester
: I

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5. Program : M.Tech (CEM)
6. Target : 60%

Course Code:
BCE61125

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4. State the assumptions of Linear Programming.
5. Distinguish between FIFO and LIFO.
6. Distinguish between NWCM and Vagul's Approximation Methods.



Year: I
Semester
: I

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5	Progra	: M.Tech (CEM)
6	m	: 60%
7	Target	

Answer Script

Anindya Ghosh

M.TECH Construction Engineering and Management

School of Engineering and Technology Adamas University

Reg. No.: - AU/2020/0004499

Roll. No.: - PG/02/MTCCEM/2020/001

SUBJECT: - *Management Principles and Risk Analysis (ECE 61123)*

EXAM - *Mid-Semester Exam (Sem-I) Jan 2021*

12/01/2021



Year: I
Semester
: I

1 Name of the Faculty: Dr. T. Senthil
Vadivel
2 Course : Construction Planning, Scheduling &
Control
3 Program : M.Tech (CEM)
4 Target : 60%

Course Code:
BCE61125

Evaluation Sheet – Mid Semester (Sample)

Roll Number	Registration Number	Name of the Student	Marks (20)
PG/02/MTCOEM/2020/001	AU/2020/0004499	Anindya Ghosh	18

Signature of HOD/Dean

Date: 15.01.2021

Signature of Faculty

Date: 15.01.2021



Year: I
Semester : I

1 Name of the Faculty: Dr. T. Senthil
2 Vadivel
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Course Code: BCE61125

: Construction Planning, Scheduling & Control
: M.Tech (CEM)
: 60%

Planning for Remedial Classes – Mid Semester

Sl. No.	Name of Student	Rol l No.	Re g. No.	Mid Sem Mark s	Remedial Classes Held							Class test on the basis of Remedial Classes	End Sem Marks	Improvem ent (Y/N)			
					Date												
					Venu e	Room No. 5001											
					Time												
NA	NA	NA	NA	NA	NA	NA	NA					NA	NA	NA			

Signature of HOD/ Dean

Signature of Faculty

Date: 20.01.2021

Date: 20.01.2021



Year: I
Semester
: I

1 Name of the Faculty: Dr. T. Senthil
2 Vadivel
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Course Code:
BCE61125

: Construction Planning, Scheduling &
Control
: M.Tech (CEM)
: 60%

Evaluation Sheet – Internal Assessment (Sample)

Roll Number	Registration Number	Name of the Student	Internal Assessment (30)							
			Assignment (4+6+4 =14)			Class Test (6+10=16)		Case Study	etc.	Total
			1	2	3	1	2			
PG/02/MTCOE M/2020/001	AU/2020/0004 499	Anindya Ghosh	4	5	3	5	10	NA		27

Signature of HOD/Dean

Date: 15.02.2021

Signature of Faculty

Date: 15.02.2021



Year: I
Semester
: I

1 Name of the Faculty: Dr. T. Senthil
Vadivel
2 Course : Construction Planning, Scheduling &
Control
3 Program : M.Tech (CEM)
4 Target : 60%

Course Code:
BCE61125

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COURSE END SURVEY INDIRECT ASSESSMENT

Sample format for Indirect Assessment of Course outcomes:

NAME: Anindya Ghosh
<i>ENROLLMENT</i> NO: AU/2020/0004499
ROLL. No.: PG/02/MTCOEM/2020/001
COURSE: Management Principles and Risk Analysis
PROGRAM: M.Tech. (CEM)

Please rate the following aspects of course outcomes of **Construction Planning, Scheduling & Control**.

Use the scale 1-5 (Poor – Excellent)

Course Outcomes	Statement	1	2	3	4	5
CO1	Can you able to Understand the concepts of Operations Research.?					5
CO2	Are you able to Demonstrate skills to test for optimality as well as other decision-making environments.?					5
CO3	Are you able to analyze production and operations management techniques as well as working capital management and inventory control techniques.					5
CO4	Are you able to understand the complexities associated with decision theories and managerial economics?					5



Year: I
Semester
: I

1 Name of the Faculty: Dr. T. Senthil
Vadivel
2 Course : Construction Planning, Scheduling &
Control
3 Program : M.Tech (CEM)
4 Target : 60%

Course Code:
ECE61125

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INDIRECT ASSESSMENT CONSOLIDATION

ADAMAS UNIVERSITY, KOLKATA SCHOOL OF ENGINEERING AND TECHNOLOGY DEPARTMENT OF CIVIL ENGINEERING CO Indirect Assessment		
Programme: B. TECH		Academic Year:2020-21
Batch: 2020-22		
Course Code & Name: ECE61123 & Management Principles and Risk Analysis		
Course Outcome	Students Feed Back (5)	Attainment (100)
CO1	5	100
CO2	5	100
CO3	5	100
CO4	5	100
Signature of HOD/Dean Date: 15.02.2021		Signature of Faculty Date: 15.02.2021



Year: I
Semester
: I

1 Name of the Faculty: Dr. T. Senthil
Vadivel
2 Course : Construction Planning, Scheduling &
Control
3 Program : M.Tech (CEM)
4 Target : 60%

Course Code:
ECE61125

End Semester Question Papers – Set 1

	ADAMAS UNIVERSITY END SEMESTER EXAMINATION (Academic Session: 2020 – 21)		
Name of the Program:	M. Tech. CE	Semester:	I
Paper Title:	Management Principles and Risk Analysis	Paper Code:	ECE61123
Maximum Marks:	50	Time Duration:	3 Hrs
Total No. of Questions:		Total No of Pages:	
(Any other information for the student may be mentioned here)	1. At top sheet, clearly mention Name, Univ. Roll No., Enrolment No., Paper Name & Code, Date of Exam. 2. All parts of a Question should be answered consecutively. Each Answer should start from a fresh page. 3. Assumptions made if any, should be stated clearly at the beginning of your answer.		

Group A			
Answer All the Questions (5 x 1 = 5)			
1	Discuss role of OR in management.	U	CO1
2	Compare Simplex and Graphical Method.	U	CO2
3	What are the different types of decisions?	R	CO3
4	Define Slack and Surplus Variables.	R	CO4
5	Give the principles of Simplex Method.	U	CO5
Group B			
Answer All the Questions (5 x 2 = 10)			
6 a)	Describe the characteristics of Liquidity Preference Theory.	U	CO1
(OR)			
6 b)	Examine the contribution of Receivables in Liquidity Management.	Ap	CO1
7 a)	Elucidate the factors influencing Over and Under Capitalization.	Ap	CO2
(OR)			
7 b)	Explain with Example: i) Systematic Risk ii) Floats.	U	CO2
8 a)	Explain why do some problems have multiple optimal feasible solutions.	E	CO3
(OR)			
8 b)	Calculate EOQ from the following – Annual Demand – 36000 units, Cost price per unit - ₹50, Holding cost – 20%, Ordering cost per order - ₹25.	Ap	CO3
9 a)	State at least five application areas of linear programming	R	CO4
(OR)			
9 b)	A small manufacturer employs 5 skilled men and 10 semi skilled men and makes an article in two qualities, a deluxe model and an	Ap	CO4



Year: I
Semester
: I

1. Name of the Faculty: Dr. T. Senthil
Vadivel
2. Course : Construction Planning, Scheduling &
Control
3. Program : M.Tech (CEM)
4. Target : 60%

Course Code:
BCE61125

	ordinary model the making of deluxe model requires 2 hours work by a skilled man and 2 hours work by a semi-skilled man. The ordinary model requires 1 hour work by a skilled man and 3 hour work by a semiskilled man. By union rules no man can work more than 8 hours per day. The manufacturer’s clear profit of the deluxe model is Rs.10 and of ordinary model Rs.8. Formulate the model of the problem.																																						
10 a)	Solve the problem by Big M method – Maximize subject to $Z= x_1+2x_2+ 3x_3-x_4$, $x_1+2x_2+3x_3=15$, $2x_1+x_2+ 5x_3=20$, $x_1+2x_2+x_3+x_4=10$, $x_1, x_2, x_3, x_4\geq 0$	Ap	CO5																																				
(OR)																																							
10 b)	State the benefits of maintaining adequate liquidity	U	CO5																																				
Group C Answer All the Questions (7 x 5 = 35)																																							
11 a)	Explain the following in the context of transportation problem. a) Degenerate transportation problem b) Modified distribution method.	E	CO1																																				
(OR)																																							
11 b)	State the steps of NWCM of Transportation Problem.	E	CO1																																				
12 a)	Explain the advantages of PERT Method for evaluation of the project.	R	CO2																																				
(OR)																																							
12 b)	Solve the following assignment problem. <table><tr><td></td><td>I</td><td>II</td><td>III</td><td>IV</td><td>V</td></tr><tr><td>A</td><td>11</td><td>17</td><td>8</td><td>16</td><td>20</td></tr><tr><td>B</td><td>9</td><td>7</td><td>12</td><td>6</td><td>15</td></tr><tr><td>C</td><td>13</td><td>16</td><td>15</td><td>12</td><td>16</td></tr><tr><td>D</td><td>21</td><td>24</td><td>17</td><td>28</td><td>26</td></tr><tr><td>E</td><td>14</td><td>10</td><td>12</td><td>11</td><td>13</td></tr></table>		I	II	III	IV	V	A	11	17	8	16	20	B	9	7	12	6	15	C	13	16	15	12	16	D	21	24	17	28	26	E	14	10	12	11	13	Ap	CO2
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C	13	16	15	12	16																																		
D	21	24	17	28	26																																		
E	14	10	12	11	13																																		
13 a)	The cost of a project is ₹50,000 and it generates cash inflows of ₹20,000, ₹15,000, ₹25,000 and ₹10,000 in four years. Using present value index method, appraise profitability of the proposed investment assuming a 10% rate of discount.	App	CO3																																				
(OR)																																							
13 b)	State the advantages and disadvantages of Net Present Value Method.	U	CO3																																				
14 a)	Solve the problem by using Duality Method of LP. Minimize $Z = x_1 + 2x_2 + 3x_3$ S.t. $2x_1 - x_2 + x_3 \geq 4$ $x_1+x_2+2x_3 \leq 8$ $x_2 - x_3 \geq 2$ $x_1, x_2 \text{ and } x_3 \geq 0$	Ap	CO4																																				



Year: I
Semester
: I

1 Name of the Faculty: Dr. T. Senthil
2 Vadivel
3 Cours : Construction Planning, Scheduling &
4 e Control
5 Progra : M.Tech (CEM)
6 m
7 Target : 60%

Course Code:
BCE61125

(OR)			
14 b)	Explain the KAIZEN technique of Quality Control.	E	C04
15 a)	Distinguish between Systematic and Un-systematic Risk	E	C04
(OR)			
15 b)	A manufacturer reported that he needs to order a particular RM in every 3 months by 900 units. The cost per unit is ₹12, the order cost is ₹16 per order, and Carrying cost is 25%. How much the company will save if they go for EOQ buying option?	Ap	C04
16 a)	Differentiate between Hypothecation and Lease.	A	C05
(OR)			
16 b)	Outsourcing increases cost of a product, explain whether you agree with the statement or not proper example.	E	C05
17 a)	Differentiate between Fixed and Variable Costs.	A	C05
(OR)			
17 b)	Total Cost for producing X is ₹1,00,000. Fixed Cost is 40%. Total Production is 10,000 units. Selling price per unit is ₹15. Ascertain the BEP in units as well as in ₹.	App	C05



Year: I
Semester
: I

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3 Control
4 Program : M.Tech (CEM)
Target : 60%

Course Code:
ECE61125

End Semester Question Papers – Set 2

	ADAMAS UNIVERSITY END SEMESTER EXAMINATION (Academic Session: 2020 – 21)		
Name of the Program:	M. Tech. CE	Semester:	I
Paper Title:	Management Principles and Risk Analysis	Paper Code:	ECE61123
Maximum Marks:	50	Time Duration:	3 Hrs
Total No. of Questions:	29	Total No of Pages:	03
(Any other information for the student may be mentioned here)	4. At top sheet, clearly mention Name, Univ. Roll No., Enrolment No., Paper Name & Code, Date of Exam. 5. All parts of a Question should be answered consecutively. Each Answer should start from a fresh page. 6. Assumptions made if any, should be stated clearly at the beginning of your answer.		

Group A Answer All the Questions (5 x 1 = 5)			
1	Discuss role of PERT CPM in Project Management.	U	CO1
2	Define Unbound Solution.	U	CO2
3	What is the main importance of Working Capital?	R	CO3
4	Define Treasury Management.	R	CO4
5	Define Break Even Point.	U	CO5
Group B Answer All the Questions (5 x 2 = 10)			
6 a)	Describe the characteristics of Slack and Surplus Variables..	U	CO1
(OR)			
6 b)	Examine the contribution of LPP in solving constraints.	Ap	CO1
7 a)	State the algorithm to solve LPP using Graphical method for maximization of profit..	Ap	CO2
(OR)			
7 b)	Explain Duality..	U	CO2
8 a)	Explain TQM	E	CO3
(OR)			
8 b)	Calculate EOQ from the following – Annual Demand – 48000 units, Cost price per unit - ₹60, Holding cost – 25%, Ordering cost per order - ₹35.	Ap	CO3
9 a)	Indicate the importance of Working Capital Management.	R	CO4
(OR)			
9 b)	SK Manufacturing Company uses discounted payback period to	Ap	CO4



Year: I
Semester : I

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Control
3. Program : M.Tech (CEM)
4. Target : 60%

Course Code:
BCE61125

	evaluate investments in capital assets. The company expects the following annual cash flows from an investment of ₹3,500,000: <table><tr><th>Year</th><th>Cash Flows (₹)</th></tr><tr><td>0</td><td>3500000</td></tr><tr><td>1</td><td>900000</td></tr><tr><td>2</td><td>900000</td></tr><tr><td>3</td><td>900000</td></tr><tr><td>4</td><td>900000</td></tr><tr><td>5</td><td>900000</td></tr><tr><td>6</td><td>900000</td></tr><tr><td>7</td><td>900000</td></tr><tr><td>8</td><td>900000</td></tr></table> No salvage/residual value is expected. The company’s cost of capital is 12%. Required: 1. Compute discounted payback period of the investment. 2. Is the investment desirable if the required payback period is 4 years or less	Year	Cash Flows (₹)	0	3500000	1	900000	2	900000	3	900000	4	900000	5	900000	6	900000	7	900000	8	900000		
Year	Cash Flows (₹)																						
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10 a)	State how the decision of Make or Buy can be advised.	Ap	CO5																				
(OR)																							
10 b)	Explain the BEP point.	U	CO5																				
Group C																							
Answer All the Questions (7 x 5 = 35)																							
11 a)	Give the limitations of operations research.	E	CO1																				
(OR)																							
11 b)	State the steps of graphical method of linear programming.	E	CO1																				
12 a)	Explain the assumptions of the BE Analysis.	R	CO2																				
(OR)																							
12 b)	A manufacturer of bags makes three types of bags P, Q and R which are processed on three machines M1, M2 and M3. Bag P requires 2 hours on machine M1 and 3 hours on machine M2 and 2 hours on machine M3. bag Q requires 3 hours on machine M1, 2 hours on machine M2 and 2 hours on machine M3 and Bag R requires 5 hours on machine M2 and 4 hours on machine M3. There are 8 hours of time per day available on machine M1, 10 hours of time per day available on machine M2 and 15 hours of time per day available on machine M3. The profit gained from bag P is Rs 3.00 per unit, from bag Q is Rs 5.00 per unit and from bag R is Rs 4.00 per unit. what should be the daily production of each type of bag so that the products yield the maximum profit ?	Ap	CO2																				
13 a)	Explain the elements of Quality Control techniques.	App	CO3																				



Year: I
Semester
: I

1 Name of the Faculty: Dr. T. Senthil
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Course Code:
BCE61125

: Construction Planning, Scheduling &
Control
: M.Tech (CEM)
: 60%

(OR)			
13 b)	State the assumptions of the Replacement Theory.	U	C03
14 a)	State the different activities of Cash Flow Statement.	Ap	C04
(OR)			
14 b)	Explain the PDCA Cycle.	E	C04
15 a)	Distinguish between NPV and IRR.	E	C04
(OR)			
15 b)	Demand for the component is at the rate of 6000 units per year and this demand is going to continue for next three years. The company has two options. It can get the component manufactured from outside or it can manufacture in house. It costs the company Rs. 2.80 per unit to buy the component. The in house manufacture will incur a fixed cost to the extent of Rs. 10,000 and variable cost of Rs. 1.50 per unit. Give the decision rule for make or buy.	Ap	C04
16 a)	Differentiate Lease and Mortgage of properties..	A	C05
(OR)			
16 b)	The critical path can be determined by use of either the "forward pass" or the "backward pass." – Explain.	E	C05
17 a)	State the assumptions of Game Theory.	A	C05
(OR)			
17 b)	State the assumptions of Monte Carlo Simulation Model.	App	C05



Year: I
Semester
: I

1	Name of the Faculty:	Dr. T. Senthil	Course Code:	
2	Vadivel		ECE61125	
3	Cours	: Construction Planning, Scheduling &		
4	e	Control		
5	Progra	: M.Tech (CEM)		
6	m	: 60%		
7	Target			

Answer Script

Anindya Ghosh

M.TECH Construction Engineering and Management

School of Engineering and Technology Adamas University

Reg. No.: - AU/2020/0004499

Roll. No.: - PG/02/MTCOEM/2020/001

SUBJECT: - Management Principles and Risk analysis (ECE61123)

EXAM: - Semester (I) 8/3/21



Year: I
Semester
: I

1. Name of the Faculty: Dr. T. Senthil
Vadivel
2. Course : Construction Planning, Scheduling &
e Control
3. Program : M.Tech (CEM)
4. Target : 60%

Course Code:
BCE61125

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Evaluation Sheet (End Semester)

Roll Number	Registration Number	Name of the Student	Marks (50)
PG/02/MTCOEM/2020/001	AU/2020/0004499	Anindya Ghosh	44

Signature of HOD/Dean

Date: 26.03.2021

Signature of Faculty

Date: 26.03.2021



Year: I
Semester : I

1 Name of the Faculty: Dr. T. Senthil
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Course Code: BCE61125

: Construction Planning, Scheduling & Control
: M.Tech (CEM)
: 60%

Planning for Remedial Classes – End Semester

Sl. No.	Name of Student	Rol l No.	Re g. No.	End Sem Marks	Remedial Classes Held							Class test on the basis of Remedial Classes	Supple Exam Marks	Improvem ent (Y/N)
					Date									
					Venu e	Room No. 5001								
					Time									

Signature of HOD/ Dean

Signature of Faculty

Date

Date



Year: I
Semester
: I

1	Name of the Faculty:	Dr. T. Senthil	Course Code:
2	Vadivel		BCE61125
3	Course	: Construction Planning, Scheduling & Control	
4	Program	: M.Tech (CEM)	
5	Target	: 60%	

Content Beyond Syllabus

Industry Expert Lectures

FRIDAY
05.03.2021
04.30 PM - 06.00 PM

ADAMAS UNIVERSITY
PROGRESS EXCELLENCE

Department of Civil Engineering

EXPERT TALK SERIES - Lecture - 4

HOW TO ACE THE INTERVIEW?

Resource Person:
Mr. A. Raqib Hussain
Career Consultant & Life Skills Coach,
University of Technology and Applied
Sciences, Nizwa, Sultanate of Oman

Coordinator:
Dr. T. Senthil Vadivel, Prof. & HOD, CE
Coordinator:
Mr. Senthil Vadivel, Asst. Prof., CE
Coordinator:
Mr. Senthil Vadivel, Asst. Prof., CE
Coordinator:
Mr. Senthil Vadivel, Asst. Prof., CE

Registration Link:
<https://bit.ly/3kkyav>

ADAMAS UNIVERSITY
PROGRESS EXCELLENCE

Department of Civil Engineering

EXPERT TALK SERIES - Lecture - 6

FRIDAY, MARCH 12, 2021 @ 03.30 PM

PREPARE YOUR FOOTPRINTS FOR PLACEMENT

Resource Person:
MR. PRAVEENKUMAR RAJA
Director, Placements and Corporate Relations,
Jayam Group of Institutions, Tamilnadu

Coordinator:
Dr. T. Senthil Vadivel, Prof. & HOD, CE
Coordinator:
Mr. Senthil Vadivel, Asst. Prof., CE
Coordinator:
Mr. Senthil Vadivel, Asst. Prof., CE
Coordinator:
Mr. Senthil Vadivel, Asst. Prof., CE

Registration Link:
<https://bit.ly/3kkyav>



Year: I
Semester
: I

1 Name of the Faculty: Dr. T. Senthil
Vadivel
2 Course : Construction Planning, Scheduling &
Control
3 Program : M.Tech (CEM)
4 Target : 60%

Course Code:
BCE61125

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Consolidated Mark Statement (Sample)

Roll Number	Registration Number	Name of the Student	Marks			
			Mid (20)	Int (30)	End (50)	Tot (100)
PG/02/MTCOEM/2020/001	AU/2020/0004499	Anindya Ghosh	18	27	44	89

Signature of Dean/HOD

Date: 26.03.2021

Signature of Faculty

Date: 26.03.2021



Year: I
Semester
: I

1. Name of the Faculty: Dr. T. Senthil
Vadivel
2. Course : Construction Planning, Scheduling &
Control
3. Program : M.Tech (CEM)
4. Target : 60%

Course Code:
ECE61125

CO ATTAINMENT – GAP ANALYSIS & REMEDIAL MEASURES

ADAMAS UNIVERSITY, KOLKATA SCHOOL OF ENGINEERING & TECHNOLOGY DEPARTMENT OF CIVIL ENGINEERING CO ATTAINMENT - GAP ANALYSIS & REMEDIAL MEASURES							
Batch:	2020-22					Academic Year: 2020-21	
Course Code & Name			Name of the Coordinator			Year & Semester	
ECE61125 & Construction Planning, Scheduling and Control			Dr. T. Senthil Vadivel			I & I	
CO	Direct Assessment	Indirect Assessment	CO Attainment	Target	CO Attainment Gaps	Action for Bridge the Gap	Target Modification
CO1	75	100	80	70	-10		85
CO2	75	100	80	70	-10		85
CO3	75	100	80	70	-10		85
CO4	75	100	80	70	-10		85
						Specific Durability Study Experiments to be demonstrated in the special laboratory in NITTTR, Kolkata (5 Hrs.)	80 (Target Remains)

Signature of HOD/Dean

Signature of Faculty



Year: I
Semester
: I

1.	Name of the Faculty: Dr. T. Senthil	Course Code:
2.	Vadivel	BCE61125
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5.	Program	IT
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Date: 07.04.2021

Date: 07.04.2021



Year: I
Semester : I

1. Name of the Faculty: Dr. T. Senthil
2. Vadivel
3. Course : Construction Planning, Scheduling &
4. e Control
5. Program : M.Tech (CEM)
6. Target : 60%

Course Code:
ECE61125

CO-PO ATTAINMENT

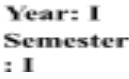
ADAMAS UNIVERSITY, KOLKATA SCHOOL OF ENGINEERING & TECHNOLOGY DEPARTMENT OF CIVIL ENGINEERING CO-PO ATTAINMENT												
Programme: M.Tech (CEM)		Year & Sem: I & I		Academic Year: 2020-21		Batch:2020-22						
Course Code	Course Title	CO-PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
ECE61125	Construction Planning, Scheduling & Control	Relationship	CO1, CO2, CO3, CO4,	CO1, CO2, CO4,	CO1, CO2	CO2, CO3, CO4,	NA	CO3	CO2, CO4	CO1,	CO1, CO2	CO3,
		Mapping Value	3	3	2	3	NA	1	2	1	3	1
		Attainment	2.4	2.4	1.6	2.4	NA	0.8	1.6	0.8	2.4	0.8

Signature of HOD/Dean

Date: 07.04.2021

Signature of Faculty

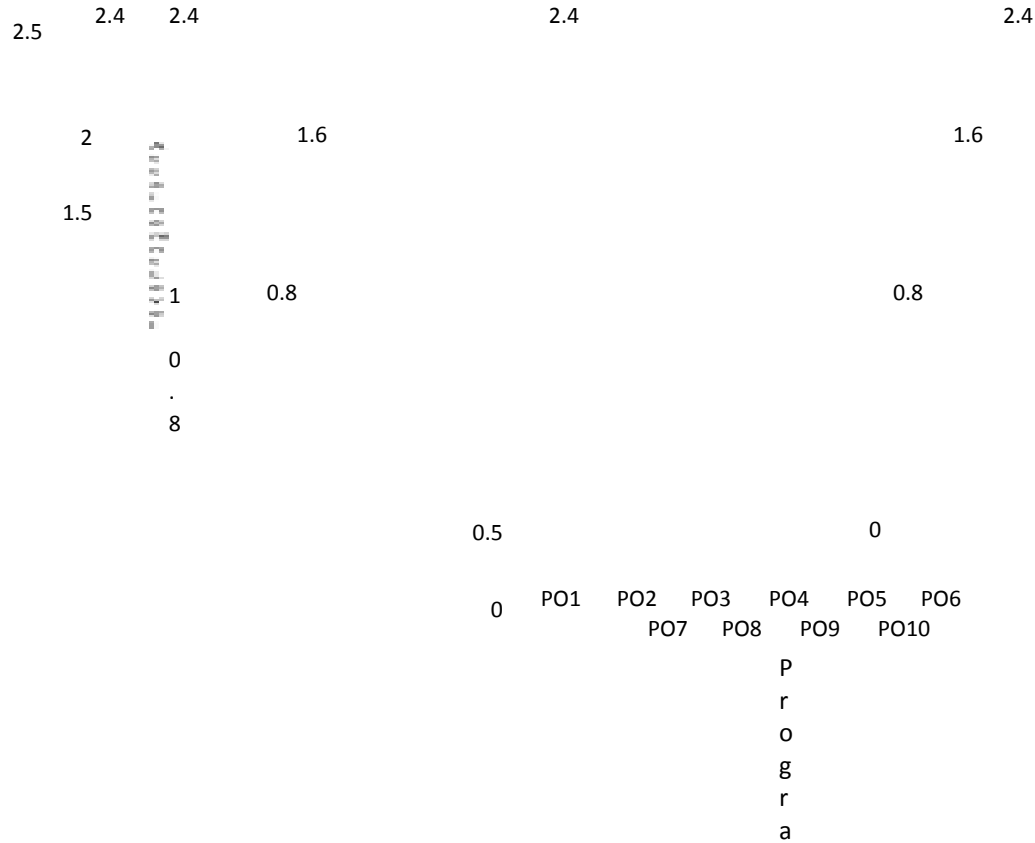
Date: 07.04.2021



1	Name of the Faculty: Dr. T. Senthil Vadivel	Course Codes: BCE61125
2	Course : Construction Planning, Scheduling & Control	
3	Program : M.Tech (CEM)	
4	Target : 60%	

PO ATTAINMENT OF THE COURSE

PO Attainment of ECE61125





Year: I
Semester
: I

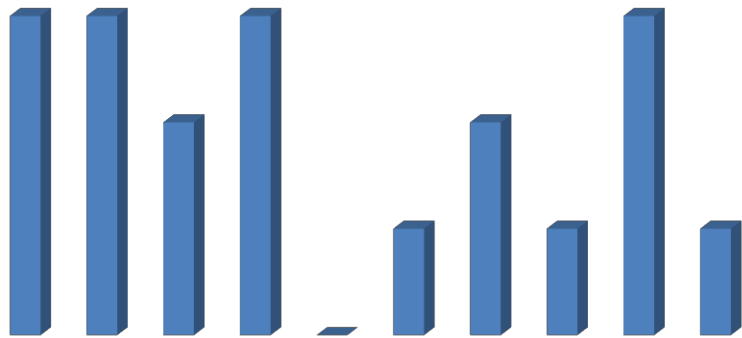
1.	Name of the Faculty:	Dr. T. Senthil	Course Code:	t
2.	Vadivel		BCE61125	c
3.	Cours	: Construction Planning, Scheduling &		o
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5.	Program	: M.Tech (CEM)		e
6.	Target	: 60%		s

Signature of HOD/Dean

Signature of Faculty

Date: 07.04.2021

Date: 07.04.2021





Year: I
Semester: I

1. Name of the Faculty:	Dr. T. Senthil Vadivel	Course Code:	ECE61125
2. Course	: Construction Planning, Scheduling & Control	L:	3
3. Program	: M.Tech (CEM)	T:	0
4. Target	: 60%	P:	0
		C:	0

INSTRUCTIONS FOR FACULTY

Instructions for Faculty

- Faculty should keep track of the students with low attendance and counsel them regularly.
- Course coordinator will arrange to communicate the short attendance (as per University policy) cases to the students and their parents monthly.
- Topics covered in each class should be recorded in the table of RECORD OF CLASS TEACHING (Suggested Format).
- Internal assessment marks should be communicated to the students twice in a semester.
- The file will be audited by respective Academic Monitoring and Review Committee (AMRC) members for theory as well as for lab as per AMRC schedule.
- The faculty is required to maintain these files for a period of at least three years.
- This register should be handed over to the head of department, whenever the faculty member goes on long leave or leaves the Colleges/University.
- For labs, continuous evaluation format (break-up given in the guidelines for result preparation in the same file) should be followed.
- Department should monitor the actual execution of the components of continuous lab evaluation regularly.
- Instructor should maintain record of experiments conducted by the students in the lab weekly.
- Instructor should promote students for self-study and to make concept diary, due weightage in the internal should be given under faculty assessment for the same.
- Course outcome assessment: To assess the fulfilment of course outcomes two different approaches have been decided. Degree of fulfillment of course outcomes will be assessed in different ways through direct assessment and indirect assessment. In Direct Assessment, it is measured through quizzes, tests, assignment, Mid-term and/or End-term examinations. It is suggested that each examination is designed in such a way that it can address one or two outcomes (depending upon the course completion). Indirect assessment is done through the student survey which needs to be designed by the faculty (sample format is given below) and it shall be conducted towards the end of course completion. The evaluation of the achievement of the Course Outcomes shall be done by analyzing the inputs received through Direct and Indirect Assessments and then corrective actions suggested for further improvement.
- **Submission Targets of Course Contents:**
 - **S. No. 1 to 8 : Before Starting the Course (01.09.2020)**
 - **S. No. 9 & 10 : After Mid Semester Examination (18.01.2021)**
 - **S. No. 11 to 18 : Immediately After End Semester Examination (26.03.2021)**
 - **S. No. 19 to 22 : After Declaration of Result of the Course (07.04.2021)**