

APJ ABDUL KALAM  
TECHNOLOGICAL  
UNIVERSITY

# COMMON COURSES

(S5 & S6)

Estd.



2014

MCN	DISASTER MANAGEMENT	Category	L	T	P	CREDIT	YEAR OF INTRODUCTION
301		Non - Credit	2	0	0	Nil	2019

**Preamble:** The objective of this course is to introduce the fundamental concepts of hazards and disaster management.

**Prerequisite:** Nil

**Course Outcomes:** After the completion of the course the student will be able to

<b>CO1</b>	Define and use various terminologies in use in disaster management parlance and organise each of these terms in relation to the disaster management cycle (Cognitive knowledge level: <b>Understand</b> ).
<b>CO2</b>	Distinguish between different hazard types and vulnerability types and do vulnerability assessment (Cognitive knowledge level: <b>Understand</b> ).
<b>CO3</b>	Identify the components and describe the process of risk assessment, and apply appropriate methodologies to assess risk (Cognitive knowledge level: <b>Understand</b> ).
<b>CO4</b>	Explain the core elements and phases of Disaster Risk Management and develop possible measures to reduce disaster risks across sector and community (Cognitive knowledge level: <b>Apply</b> )
<b>CO5</b>	Identify factors that determine the nature of disaster response and discuss the various disaster response actions (Cognitive knowledge level: <b>Understand</b> ).
<b>CO6</b>	Explain the various legislations and best practices for disaster management and risk reduction at national and international level (Cognitive knowledge level: <b>Understand</b> ).

**Mapping of course outcomes with program outcomes**

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1		2				2				2		2
CO2	2	3	2		2	2	3			3		2
CO3	2	3	2	2	2	2	3			3		2
CO4	3	3	3		2	2	3					2
CO5	3	3			2	2	3					2
CO6	3					2	3	3				2

<b>Abstract POs defined by National Board of Accreditation</b>			
<b>PO#</b>	<b>Broad PO</b>	<b>PO#</b>	<b>Broad PO</b>
PO1	Engineering Knowledge	PO7	Environment and Sustainability
PO2	Problem Analysis	PO8	Ethics
PO3	Design/Development of solutions	PO9	Individual and team work
PO4	Conduct investigations of complex problems	PO10	Communication
PO5	Modern tool usage	PO11	Project Management and Finance
PO6	The Engineer and Society	PO12	Life long learning

## Assessment Pattern

Bloom's Category	Continuous Assessment Tests		End Semester Examination Marks
	Test 1 (Marks)	Test 2 (Marks)	
Remember	10	10	20
Understand	25	25	50
Apply	15	15	30
Analyze			
Evaluate			
Create			

## Mark Distribution

Total Marks	CIE Marks	ESE Marks	ESE Duration
150	50	100	3 hours

### Continuous Internal Evaluation Pattern:

Attendance : 10 marks

Continuous Assessment - Test : 25 marks

Continuous Assessment - Assignment : 15 marks

### Internal Examination Pattern:

Each of the two internal examinations has to be conducted out of 50 marks. First series test shall be preferably conducted after completing the first half of the syllabus and the second series test shall be preferably conducted after completing remaining part of the syllabus. There will be two parts: Part A and Part B. Part A contains 5 questions (preferably, 2 questions each from the completed modules and 1 question from the partly completed module), having 3 marks for each question adding up to 15 marks for part A. Students should answer all questions from Part A.

Part B contains 7 questions (preferably, 3 questions each from the completed modules and 1 question from the partly completed module), each with 7 marks. Out of the 7 questions, a student should answer any 5.

**End Semester Examination Pattern:**

There will be two parts; Part A and Part B. Part A contains 10 questions with 2 questions from each module, having 3 marks for each question. Students should answer all questions. Part B contains 2 questions from each module of which a student should answer any one. Each question can have maximum 2 sub-divisions and carries 14 marks.

# SYLLABUS

## MCN 301 Disaster Management

### Module 1

Systems of earth

Lithosphere- composition, rocks, soils; Atmosphere-layers, ozone layer, greenhouse effect, weather, cyclones, atmospheric circulations, Indian Monsoon; hydrosphere- Oceans, inland water bodies; biosphere

Definition and meaning of key terms in Disaster Risk Reduction and Management- disaster, hazard, exposure, vulnerability, risk, risk assessment, risk mapping, capacity, resilience, disaster risk reduction, disaster risk management, early warning systems, disaster preparedness, disaster prevention, disaster mitigation, disaster response, damage assessment, crisis counselling, needs assessment.

### Module 2

Hazard types and hazard mapping; Vulnerability types and their assessment- physical, social, economic and environmental vulnerability.

Disaster risk assessment –approaches, procedures

### Module 3

Disaster risk management -Core elements and phases of Disaster Risk Management

Measures for Disaster Risk Reduction – prevention, mitigation, and preparedness.

Disaster response- objectives, requirements; response planning; types of responses.

Relief; international relief organizations.

### Module 4

Participatory stakeholder engagement; Disaster communication- importance, methods, barriers; Crisis counselling

Capacity Building: Concept – Structural and Non-structural Measures, Capacity Assessment; Strengthening Capacity for Reducing Risk

## **Module 5**

Common disaster types in India; Legislations in India on disaster management; National disaster management policy; Institutional arrangements for disaster management in India.

The Sendai Framework for Disaster Risk Reduction- targets, priorities for action, guiding principles

### **Reference Text Book**

1. R. Subramanian, Disaster Management, Vikas Publishing House, 2018
2. M. M. Sulphery, Disaster Management, PHI Learning, 2016
3. UNDP, Disaster Risk Management Training Manual, 2016
4. United Nations Office for Disaster Risk Reduction, Sendai Framework for Disaster Risk Reduction 2015-2030, 2015

### **Sample Course Level Assessment Questions**

#### **Course Outcome 1 (CO1):**

1. What is the mechanism by which stratospheric ozone protects earth from harmful UV rays?
2. What are disasters? What are their causes?
3. Explain the different types of cyclones and the mechanism of their formation
4. Explain with examples, the difference between hazard and risk in the context of disaster management
5. Explain the following terms in the context of disaster management (a) exposure (b) resilience (c) disaster risk management (d) early warning systems, (e) damage assessment (f) crisis counselling (g) needs assessment

#### **Course Outcome 2 (CO2):**

1. What is hazard mapping? What are its objectives?
2. What is participatory hazard mapping? How is it conducted? What are its advantages?
3. Explain the applications of hazard maps
4. Explain the types of vulnerabilities and the approaches to assess them

#### **Course Outcome 3 (CO3):**

1. Explain briefly the concept of 'disaster risk'

2. List the strategies for disaster risk management ‘before’, ‘during’ and ‘after’ a disaster
3. What is disaster preparedness? Explain the components of a comprehensive disaster preparedness strategy

**Course Outcome 4 (CO4):**

1. What is disaster prevention? Distinguish it from disaster mitigation giving examples
2. What are the steps to effective disaster communication? What are the barriers to communication?
3. Explain capacity building in the context of disaster management

**Course Outcome 5 (CO5):**

1. Briefly explain the levels of stakeholder participation in the context of disaster risk reduction
2. Explain the importance of communication in disaster management
3. Explain the benefits and costs of stakeholder participation in disaster management
4. How are stakeholders in disaster management identified?

**Course Outcome 6 (CO6):**

1. Explain the salient features of the National Policy on Disaster Management in India
2. Explain the guiding principles and priorities of action according to the Sendai Framework for Disaster Risk Reduction
3. What are Tsunamis? How are they caused?
4. Explain the earthquake zonation of India



**Model Question paper**

**QP CODE:**

**PAGES:3**

**Reg No:** \_\_\_\_\_

**Name :** \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**

**FIFTH SEMESTER B.TECH DEGREE EXAMINATION, MONTH & YEAR**

**Course Code: MCN 301**

**Course Name: Disaster Management**

**Max.Marks:100**

**Duration: 3 Hours**

**PART A**

**Answer all Questions. Each question carries 3 Marks**

1. What is the mechanism by which stratospheric ozone protects earth from harmful UV rays?
2. What are disasters? What are their causes?
3. What is hazard mapping? What are its objectives?
4. Explain briefly the concept of 'disaster risk'
5. List the strategies for disaster risk management 'before', 'during' and 'after' a disaster
6. What is disaster prevention? Distinguish it from disaster mitigation giving examples
7. Briefly explain the levels of stakeholder participation in the context of disaster risk reduction
8. Explain the importance of communication in disaster management
9. What are Tsunamis? How are they caused?
10. Explain the earthquake zonation of India

**Part B**

**Answer any one Question from each module. Each question carries 14 Marks**

11. a. Explain the different types of cyclones and the mechanism of their formation [10]  
b. Explain with examples, the difference between hazard and risk in the context of disaster management [4]

OR

12. Explain the following terms in the context of disaster management [14]  
(a) exposure (b) resilience (c) disaster risk management (d) early warning systems, (e) damage assessment (f) crisis counselling (g) needs assessment

13. a. What is participatory hazard mapping? How is it conducted? What are its advantages? [8]  
b. Explain the applications of hazard maps [6]

OR

14. Explain the types of vulnerabilities and the approaches to assess them [14]  
15. a. Explain the core elements of disaster risk management [8]  
b. Explain the factors that decide the nature of disaster response [6]

OR

16. a. What is disaster preparedness? Explain the components of a comprehensive disaster preparedness strategy [6]  
b. Explain the different disaster response actions [8]  
17. a. Explain the benefits and costs of stakeholder participation in disaster management [10]  
b. How are stakeholders in disaster management identified? [4]

OR

18. a. What are the steps to effective disaster communication? What are the barriers to communication? [7]  
b. Explain capacity building in the context of disaster management [7]

19. Explain the salient features of the National Policy on Disaster Management in India

[14]

OR

20. Explain the guiding principles and priorities of action according to the Sendai Framework for Disaster Risk Reduction

[14]

## Teaching Plan

	<b>Module 1</b>	<b>5 Hours</b>
1.1	Introduction about various Systems of earth, Lithosphere-composition, rocks, Soils; Atmosphere-layers, ozone layer, greenhouse effect, weather	1 Hour
1.2	Cyclones, atmospheric circulations, Indian Monsoon; hydrosphere-Oceans, inland water bodies; biosphere	1 Hour
1.3	Definition and meaning of key terms in Disaster Risk Reduction and Management- disaster, hazard,	1 Hour
1.4	Exposure, vulnerability, risk, risk assessment, risk mapping, capacity, resilience, disaster risk reduction, Disaster risk management, early warning systems	1 Hour
1.5	Disaster preparedness, disaster prevention, disaster, Mitigation, disaster response, damage assessment, crisis counselling, needs assessment.	1 Hour
	<b>Module 2</b>	<b>5 Hours</b>
2.1	Various Hazard types, Hazard mapping; Different types of Vulnerability types and their assessment	1 Hour
2.2	Vulnerability assessment and types, Physical and social vulnerability	1 Hour
2.3	Economic and environmental vulnerability, Core elements of disaster risk assessment	1 Hour
2.4	Components of a comprehensive disaster preparedness strategy approaches, procedures	1 Hour
2.5	Different disaster response actions	1 Hour
	<b>Module 3</b>	<b>5 Hours</b>
3.1	Introduction to Disaster risk management, Core elements of Disaster Risk Management	1 Hour
3.2	Phases of Disaster Risk Management, Measures for Disaster Risk Reduction	1 Hour
3.3	Measures for Disaster prevention, mitigation, and preparedness.	1 Hour

3.4	Disaster response- objectives, requirements. Disaster response planning; types of responses.	1 Hour
3.5	Introduction- Disaster Relief, Relief; international relief organizations.	1 Hour
	<b>Module 4</b>	<b>5 Hours</b>
4.1	Participatory stakeholder engagement	1 Hour
4.2	Importance of disaster communication.	1 Hour
4.3	Disaster communication- methods, barriers. Crisis counselling	1 Hour
4.4	Introduction to Capacity Building. Concept – Structural Measures, Non-structural Measures.	1 Hour
4.5	Introduction to Capacity Assessment, Capacity Assessment; Strengthening, Capacity for Reducing Risk	1 Hour
	<b>Module 5</b>	<b>5 Hours</b>
5.1	Introduction-Common disaster types in India.	1 Hour
5.2	Common disaster legislations in India on disaster management	1 Hour
5.3	National disaster management policy, Institutional arrangements for disaster management in India.	1 Hour
5.4	The Sendai Framework for Disaster Risk Reduction and targets	1 Hour
5.5	The Sendai Framework for Disaster Risk Reduction-priorities for action, guiding principles	1 Hour

<b>HUT 300</b>	<b>Industrial Economics &amp; Foreign Trade</b>	<b>Category</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>CREDIT</b>
		HSMC	<b>3</b>	<b>0</b>	<b>0</b>	<b>3</b>

**Preamble:** To equip the students to take industrial decisions and to create awareness of economic environment.

**Prerequisite:** Nil

**Course Outcomes:** After the completion of the course the student will be able to

<b>CO1</b>	Explain the problem of scarcity of resources and consumer behaviour, and to evaluate the impact of government policies on the general economic welfare. (Cognitive knowledge level: <b>Understand</b> )
<b>CO2</b>	Take appropriate decisions regarding volume of output and to evaluate the social cost of production. (Cognitive knowledge level: <b>Apply</b> )
<b>CO3</b>	Determine the functional requirement of a firm under various competitive conditions. (Cognitive knowledge level: <b>Analyse</b> )
<b>CO4</b>	Examine the overall performance of the economy, and the regulation of economic fluctuations and its impact on various sections in the society. (Cognitive knowledge level: <b>Analyse</b> )
<b>CO5</b>	Determine the impact of changes in global economic policies on the business opportunities of a firm. (Cognitive knowledge level: <b>Analyse</b> )

**Mapping of course outcomes with program outcomes**

	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>
<b>CO1</b>	2										3	
<b>CO2</b>	2	2			2	2	3				3	
<b>CO3</b>	2	2	1								3	
<b>CO4</b>	2	2	1			1					3	
<b>CO5</b>	2	2	1								3	

<b>Abstract POs defined by National Board of Accreditation</b>			
<b>PO#</b>	<b>Broad PO</b>	<b>PO#</b>	<b>Broad PO</b>
PO1	Engineering Knowledge	PO7	Environment and Sustainability
PO2	Problem Analysis	PO8	Ethics
PO3	Design/Development of solutions	PO9	Individual and team work
PO4	Conduct investigations of complex problems	PO10	Communication
PO5	Modern tool usage	PO11	Project Management and Finance
PO6	The Engineer and Society	PO12	Lifelong learning

### Assessment Pattern

<b>Bloom's Category</b>	<b>Continuous Assessment Tests</b>		<b>End Semester Examination Marks</b>
	<b>Test 1 (Marks)</b>	<b>Test 2 (Marks)</b>	
Remember	<b>15</b>	<b>15</b>	<b>30</b>
Understand	<b>20</b>	<b>20</b>	<b>40</b>
Apply	<b>15</b>	<b>15</b>	<b>30</b>

### Mark Distribution

<b>Total Marks</b>	<b>CIE Marks</b>	<b>ESE Marks</b>	<b>ESE Duration</b>
<b>150</b>	<b>50</b>	<b>100</b>	<b>3 hours</b>

**Continuous Internal Evaluation Pattern:**

Attendance	: 10 marks
Continuous Assessment - Test (2 numbers)	: 25 marks
Continuous Assessment - Assignment	: 15 marks

**Internal Examination Pattern:**

Each of the two internal examinations has to be conducted out of 50 marks. First series test shall be preferably conducted after completing the first half of the syllabus and the second series test shall be preferably conducted after completing remaining part of the syllabus. There will be two parts: Part A and Part B. Part A contains 5 questions (preferably, 2 questions each from the completed modules and 1 question from the partly completed module), having 3 marks for each question adding up to 15 marks for part A. Students should answer all questions from Part A. Part B contains 7 questions (preferably, 3 questions each from the completed modules and 1 question from the partly completed module), each with 7 marks. Out of the 7 questions, a student should answer any 5.

**End Semester Examination Pattern:**

There will be two parts; Part A and Part B.

Part A	: 30 marks
Part B	: 70 marks

Part A contains 10 questions with 2 questions from each module, having 3 marks for each question. Students should answer all questions. Part B contains 2 questions from each module of which a student should answer any one. Each question can have maximum 3 sub-divisions and carries 14 marks.



# SYLLABUS

## HUT 300 Industrial Economics & Foreign Trade

### Module 1 (Basic Concepts and Demand and Supply Analysis)

Scarcity and choice - Basic economic problems- PPC – Firms and its objectives – types of firms – Utility – Law of diminishing marginal utility – Demand and its determinants – law of demand – elasticity of demand – measurement of elasticity and its applications – Supply, law of supply and determinants of supply – Equilibrium – Changes in demand and supply and its effects – Consumer surplus and producer surplus (Concepts) – Taxation and deadweight loss.

### Module 2 (Production and cost)

Production function – law of variable proportion – economies of scale – internal and external economies – Isoquants, isocost line and producer's equilibrium – Expansion path – Technical progress and its implications – Cobb-Douglas production function - Cost concepts – Social cost: private cost and external cost – Explicit and implicit cost – sunk cost - Short run cost curves - long run cost curves – Revenue (concepts) – Shutdown point – Break-even point.

### Module 3 (Market Structure)

Perfect and imperfect competition – monopoly, regulation of monopoly, monopolistic completion (features and equilibrium of a firm) – oligopoly – Kinked demand curve – Collusive oligopoly (meaning) – Non-price competition – Product pricing – Cost plus pricing – Target return pricing – Penetration pricing – Predatory pricing – Going rate pricing – Price skimming.

### Module 4 (Macroeconomic concepts)

Circular flow of economic activities – Stock and flow – Final goods and intermediate goods - Gross Domestic Product - National Income – Three sectors of an economy- Methods of measuring national income – Inflation- causes and effects – Measures to control inflation- Monetary and fiscal policies – Business financing- Bonds and shares -Money market and Capital market – Stock market – Demat account and Trading account - SENSEX and NIFTY.

### Module 5 (International Trade)

Advantages and disadvantages of international trade - Absolute and Comparative advantage theory - Heckscher - Ohlin theory - Balance of payments – Components – Balance of Payments

deficit and devaluation – Trade policy – Free trade versus protection – Tariff and non-tariff barriers.

### **Reference Materials**

1. Gregory N Mankiw, 'Principles of Micro Economics', Cengage Publications
2. Gregory N Mankiw, 'Principles of Macro Economics', Cengage Publications
3. Dwivedi D N, 'Macro Economics', Tata McGraw Hill, New Delhi.
4. Mithani D M, 'Managerial Economics', Himalaya Publishing House, Mumbai.
5. Francis Cherunilam, 'International Economics', McGraw Hill, New Delhi.

### **Sample Course Level Assessment Questions**

#### **Course Outcome 1 (CO1):**

1. Why does the problem of choice arise?
2. What are the central problems?
3. How do we solve the basic economic problems?
4. What is the relation between price and demand?
5. Explain deadweight loss due to the imposition of a tax.

#### **Course Outcome 2 (CO2):**

1. What is shutdown point?
2. What do you mean by producer equilibrium?
3. Explain break-even point;
4. Suppose a chemical factory is functioning in a residential area. What are the external costs?

#### **Course Outcome 3 (CO3):**

1. Explain the equilibrium of a firm under monopolistic competition.
2. Why is a monopolist called price maker?
3. What are the methods of non-price competition under oligopoly?

4. What is collusive oligopoly?

**Course Outcome 4 (CO4):**

1. What is the significance of national income estimation?
2. How is GDP estimated?
3. What are the measures to control inflation?
4. How does inflation affect fixed income group and wage earners?

**Course Outcome 5 (CO5):**

1. What is devaluation?
2. Suppose a foreign country imposes a tariff on Indian goods. How does it affect India's exports?
3. What is free trade?
4. What are the arguments in favour of protection?

**Model Question paper**

**QP CODE:**

**PAGES:3**

**Reg No:** \_\_\_\_\_

**Name :** \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY FIFTH /SIXTH SEMESTER  
B.TECH DEGREE EXAMINATION, MONTH & YEAR**

**Course Code: HUT 300**

**Course Name: Industrial Economics & Foreign Trade**

**Max.Marks:100**

**Duration: 3 Hours**

**PART A**

**Answer all Questions. Each question carries 3 Marks**

1. Why does an economic problem arise?
2. What should be the percentage change in price of a product if the sale is to be increased by 50 percent and its price elasticity of demand is 2?
3. In the production function  $Q = 2L^{1/2}K^{1/2}$  if  $L=36$  how many units of capital are needed to produce 60 units of output?
4. Suppose in the short run  $AVC < P < AC$ . Will this firm produce or shut down? Give reason.
5. What is predatory pricing?
6. What do you mean by non- price competition under oligopoly?
7. What are the important economic activities under primary sector?
8. Distinguish between a bond and share?
9. What are the major components of balance of payments?

10. What is devaluation?

(10 x 3 = 30 marks)

### **PART B**

**(Answer one full question from each module, each question carries 14 marks)**

#### **MODULE I**

11. a) Prepare a utility schedule showing units of consumption, total utility and marginal utility, and explain the law of diminishing marginal utility. Point out any three limitations of the law.
- b) How is elasticity of demand measured according to the percentage method? How is the measurement of elasticity of demand useful for the government?

**Or**

12. a) Explain the concepts consumer surplus and producer surplus.
- b) Suppose the government imposes a tax on a commodity where the tax burden met by the consumers. Draw a diagram and explain dead weight loss. Mark consumer surplus, producer surplus, tax revenue and dead weight loss in the diagram.

#### **MODULE II**

13. a) What are the advantages of large-scale production?
- b) Explain Producer equilibrium with the help of isoquants and isocost line. What is expansion path?

**Or**

14. a) Explain break-even analysis with the help of a diagram.
- b) Suppose the monthly fixed cost of a firm is Rs. 40000 and its monthly total variable cost is Rs. 60000.
- If the monthly sales is Rs. 120000 estimate contribution and break-even sales.
  - If the firm wants to get a monthly profit of Rs.40000, what should be the sales?
- c) The total cost function of a firm is given as  $TC=100+50Q - 11Q^2+Q^3$ . Find marginal cost when output equals 5 units.

#### **MODULE III**

15. a) What are the features of monopolistic competition?  
b) Explain the equilibrium of a firm earning supernormal profit under monopolistic competition.

**Or**

16. a) Make comparison between perfect competition and monopoly.  
b) Explain price rigidity under oligopoly with the help of a kinked demand curve.

#### **MODULE IV**

17. a) How is national income estimated under product method and expenditure method?  
b) Estimate GDPmp, GNPmp and National income

Private consumption expenditure	= 2000 (in 000 cores)
Government Consumption	= 500
NFIA	= -(300)
Investment	= 800
Net=exports	=700
Depreciation	= 400
Net-indirect tax	= 300

**Or**

18. a) What are the monetary and fiscal policy measures to control inflation?  
b) What is SENSEX?

#### **MODULE V**

19. a) What are the advantages of disadvantages of foreign trade?  
b) Explain the comparative cost advantage.

**Or**

20. a) What are the arguments in favour protection?  
b) Examine the tariff and non-tariff barriers to international trade.

**(5 × 14 = 70 marks)**

### Teaching Plan

<b>Module 1 (Basic concepts and Demand and Supply Analysis)</b>		<b>7 Hours</b>
1.1	Scarcity and choice – Basic economic problems - PPC	1 Hour
1.2	Firms and its objectives – types of firms	1 Hour
1.3	Utility – Law of diminishing marginal utility – Demand – law of demand	1 Hour
1.4	Measurement of elasticity and its applications	1 Hour
1.5	Supply, law of supply and determinants of supply	1 Hour
1.6	Equilibrium – changes in demand and supply and its effects	1 Hour
1.7	Consumer surplus and producer surplus (Concepts) – Taxation and deadweight loss.	1 Hour
<b>Module 2 (Production and cost)</b>		<b>7 Hours</b>
2.1	Productions function – law of variable proportion	1 Hour
2.2	Economies of scale – internal and external economies	1 Hour
2.3	producers equilibrium – Expansion path	1 Hour
2.4	Technical progress and its implications – cob Douglas Production function	1 Hour
2.5	Cost concepts – social cost: private cost and external cost – Explicit and implicit cost – sunk cost	1 Hour
2.6	Short run cost curves & Long run cost curves	1 Hour
2.7	Revenue (concepts) – shutdown point – Break-even point.	1 Hour
<b>Module 3 (Market Structure)</b>		<b>6 hours</b>
3.1	Equilibrium of a firm, MC – MR approach and TC – TR approach	1 Hour
3.2	Perfect competition & Imperfect competition	1 Hour
3.3	Monopoly – Regulation of monopoly – Monopolistic competition	1 Hour
3.4	Oligopoly – kinked demand curve	1 Hour
3.5	Collusive oligopoly (meaning) – Non price competition	1 Hour
3.6	Cost plus pricing – Target return pricing – Penetration, Predatory pricing – Going rate pricing – price skimming	1 Hour

<b>Module 4 (Macroeconomic concepts)</b>		<b>7 Hours</b>
4.1	Circular flow of economic activities	1 Hour
4.2	Stock and flow – Final goods and intermediate goods – Gross Domestic Product - National income – Three sectors of an economy	1 Hour
4.3	Methods of measuring national income	1 Hour
4.4	Inflation – Demand pull and cost push – Causes and effects	1 Hour
4.5	Measures to control inflation – Monetary and fiscal policies	1 Hour
4.6	Business financing – Bonds and shares – Money market and capital market	1 Hour
4.7	Stock market – Demat account and Trading account – SENSEX and NIFTY	1 Hour
<b>Module 5 (International Trade)</b>		<b>8 Hours</b>
5.1	Advantages and disadvantages of international trade	1 Hour
5.2	Absolute and comparative advantage theory	2 Hour
5.3	Heckscher – Ohlin theory	1 Hour
5.4	Balance of payments - components	1 Hour
5.5	Balance of payments deficit and devaluation	1 Hour
5.6	Trade policy – Free trade versus protection	1 Hour
5.7	Tariff and non tariff barriers.	1 Hour



<b>HUT 310</b>	<b>Management for Engineers</b>	<b>Category</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Credit</b>
		<b>HMC</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>3</b>

**Preamble:** This course is intended to help the students to learn the basic concepts and functions of management and its role in the performance of an organization and to understand various decision-making approaches available for managers to achieve excellence. Learners shall have a broad view of different functional areas of management like operations, human resource, finance and marketing.

**Prerequisite:** Nil

**Course Outcomes** After the completion of the course the student will be able to

<b>CO1</b>	Explain the characteristics of management in the contemporary context (Cognitive Knowledge level: <b>Understand</b> ).
<b>CO2</b>	Describe the functions of management (Cognitive Knowledge level: <b>Understand</b> ).
<b>CO3</b>	Demonstrate ability in decision making process and productivity analysis (Cognitive Knowledge level: <b>Understand</b> ).
<b>CO4</b>	Illustrate project management technique and develop a project schedule (Cognitive Knowledge level: <b>Apply</b> ).
<b>CO5</b>	Summarize the functional areas of management (Cognitive Knowledge level: <b>Understand</b> ).
<b>CO6</b>	Comprehend the concept of entrepreneurship and create business plans (Cognitive Knowledge level: <b>Understand</b> ).

### Mapping of course outcomes with program outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2				1	2	2	2		2	1	1
CO2	2				1	1		2	1	2	1	1
CO3	2	2	2	2	1							
CO4	2	2	2	2	1						2	1
CO5	2					1	1		1	2	1	
CO6		2	2	2	1	1	1	1	1	1	1	1

Abstract POs defined by National Board of Accreditation				
PO1	Engineering Knowledge		PO7	Environment and Sustainability
PO2	Problem Analysis		PO8	Ethics
PO3	Design/Development of solutions		PO9	Individual and team work
PO4	Conduct investigations of complex problems		PO10	Communication
PO5	Modern tool usage		PO11	Project Management and Finance
PO6	The Engineer and Society		PO12	Life long learning

### Assessment Pattern

Bloom's Category	Test 1 (Marks in percentage)	Test 2 (Marks in percentage)	End Semester Examination (Marks in percentage)
Remember	15	15	30
Understand	15	15	30
Apply	20	20	40
Analyse			
Evaluate			
Create			

## Mark Distribution

Total Marks	CIE Marks	ESE Marks	ESE Duration
150	50	100	3 Hours

### Continuous Internal Evaluation Pattern:

Attendance : 10 marks

Continuous Assessment - Test : 25 marks

Continuous Assessment - Assignment : 15 marks

### Internal Examination Pattern:

Each of the two internal examinations has to be conducted out of 50 marks. First series test shall be preferably conducted after completing the first half of the syllabus and the second series test shall be preferably conducted after completing remaining part of the syllabus. There will be two parts: Part A and Part B. Part A contains 5 questions (preferably, 2 questions each from the completed modules and 1 question from the partly completed module), having 3 marks for each question adding up to 15 marks for part A. Students should answer all questions from Part A. Part B contains 7 questions (preferably, 3 questions each from the completed modules and 1 question from the partly completed module), each with 7 marks. Out of the 7 questions, a student should answer any 5.

### End Semester Examination Pattern:

There will be two parts; Part A and Part B. Part A contains 10 questions with 2 questions from each module, having 3 marks for each question. Students should answer all questions. Part B contains 2 questions from each module of which a student should answer any one. Each question can have maximum 2 sub-divisions and carries 14 marks.

## **SYLLABUS**

### **HUT 310 Management for Engineers (35 hrs)**

#### **Module 1 (Introduction to management Theory- 7 Hours)**

Introduction to management theory, Management Defined, Characteristic of Management, Management as an art-profession, System approaches to Management, Task and Responsibilities of a professional Manager, Levels of Manager and Skill required.

#### **Module 2 (management and organization- 5 hours)**

Management Process, Planning types , Mission, Goals, Strategy, Programmes, Procedures, Organising, Principles of Organisation, Delegation, Span of Control, Organisation Structures, Directing, Leadership, Motivation, Controlling..

#### **Module 3 (productivity and decision making- 7 hours)**

Concept of productivity and its measurement; Competitiveness; Decision making process; decision making under certainty, risk and uncertainty; Decision trees; Models of decision making.

#### **. Module 4 (project management- 8 hours)**

Project Management, Network construction, Arrow diagram, Redundancy. CPM and PERT Networks, Scheduling computations, PERT time estimates, Probability of completion of project, Introduction to crashing.

#### **Module 5 (functional areas of management- 8 hours)**

Introduction to functional areas of management, Operations management, Human resources management, Marketing management, Financial management, Entrepreneurship, Business plans, Corporate social responsibility, Patents and Intellectual property rights.

#### **References:**

1. H. Koontz, and H. Weihrich, Essentials of Management: An International Perspective. 8th ed., McGraw-Hill, 2009.
2. P C Tripathi and P N Reddy, Principles of management, TMH, 4<sup>th</sup> edition, 2008.
3. P. Kotler, K. L. Keller, A. Koshy, and M. Jha, Marketing Management: A South Asian Perspective. 14th ed., Pearson, 2012.
4. M. Y. Khan, and P. K. Jain, Financial Management, Tata-McGraw Hill, 2008.
5. R. D. Hisrich, and M. P. Peters, Entrepreneurship: Strategy, Developing, and Managing a New Enterprise, 4th ed., McGraw-Hill Education, 1997.
6. D. J. Sumanth, Productivity Engineering and Management, McGraw-Hill Education, 1985.
7. K.Ashwathappa, 'Human Resources and Personnel Management', TMH, 3<sup>rd</sup> edition, 2005.
8. R. B. Chase, Ravi Shankar and F. R. Jacobs, Operations and Supply Chain Management, 14th ed. McGraw Hill Education (India), 2015.

### **Sample Course Level Assessment Questions**

**Course Outcome1 (CO1):** Explain the systems approach to management?

**Course Outcome 2 (CO2):** Explain the following terms with a suitable example Goal, Objective, and Strategy.

**Course Outcome 3 (CO3):** Mr. Shyam is the author of what promises to be a successful novel. He has the option to either publish the novel himself or through a publisher. The publisher is offering Mr. Shyam Rs. 20,000 for signing the contract. If the novel is successful, it will sell 200,000 copies. Else, it will sell 10,000 copies only. The publisher pays a Re. 1 royalty per copy. A market survey indicates that there is a 70% chance that the novel will be successful. If Mr. Shyam undertakes publishing, he will incur an initial cost of Rs. 90,000 for printing and marketing., but each copy sold will net him Rs. 2. Based on the given information and the

decision analysis method, determine whether Mr. Shyam should accept the publisher's offer or publish the novel himself.

**Course Outcome 4 (CO4):** Explain the concepts of crashing and dummy activity in project management.

**Course Outcome 5 (CO5):** Derive the expression for the Economic order quantity (EOQ)?

**Course Outcome 6 (CO6):** Briefly explain the theories of Entrepreneurial motivation.?

**Model Question Paper**

QP CODE:

PAGES: 4

Reg No: \_\_\_\_\_

Name: \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY  
FOURTH SEMESTER B.TECH DEGREE EXAMINATION, MONTH & YEAR**

**Course Code: HUT 310**

**Course name: Management for Engineers**

**Max Marks: 100**

**Duration: 3 Hours**

**PART-A (Answer All Questions. Each question carries 3 marks)**

1. "Management is getting things done through other." Elaborate.
2. Comment on the true nature of management. Is it a science or an art?
3. Planning is looking ahead and controlling is looking back. Comment with suitable examples
4. Explain the process of communication?
5. Explain the hierarchy of objectives?
6. Explain the types of decisions?
7. Describe the Economic man model?
8. Explain the concepts of crashing and dummy activity in project management.
9. Differentiate the quantitative and qualitative methods in forecasting.
10. What are the key metrics for sustainability measurement? What makes the measurement and reporting of sustainability challenging?

**PART-B (Answer any one question from each module)**

11. a) Explain the systems approach to management. (10)  
b) Describe the roles of a manager (4)

**OR**

12. a) Explain the 14 principles of administrative management? **(10)**

b) Explain the different managerial skills **(4)**

13. a) What are planning premises, explain the classification of planning premises. **(10)**

b) Distinguish between strategy and policy. How can policies be made effective. **(4)**

**OR**

14 a) Explain three motivational theories. **(9)**

b) Describe the managerial grid. **(5)**

15. a) Modern forest management uses controlled fires to reduce fire hazards and to stimulate new forest growth. Management has the option to postpone or plan a burning. In a specific forest tract, if burning is postponed, a general administrative cost of Rs. 300 is incurred. If a controlled burning is planned, there is a 50% chance that good weather will prevail and burning will cost Rs. 3200. The results of the burning may be either successful with probability 0.6 or marginal with probability 0.4. Successful execution will result in an estimated benefit of Rs. 6000, and marginal execution will provide only Rs. 3000 in benefits. If the weather is poor, burning will be cancelled incurring a cost of Rs. 1200 and no benefit. i) Develop a decision tree for the problem. (ii) Analyse the decision tree and determine the optimal course of action. **(8)**

b) Student tuition at ABC University is \$100 per semester credit hour. The Education department supplements the university revenue by matching student tuition, dollars per dollars. Average class size for typical three credit course is 50 students. Labour costs are \$4000 per class, material costs are \$20 per student, and overhead cost are \$25,000 per class. (a) Determine the total factor productivity. (b) If instructors deliver lecture 14 hours per week and the semester lasts for 16 weeks, what is the labour productivity? **(6)**

**OR**

16. a) An ice-cream retailer buys ice cream at a cost of Rs. 13 per cup and sells it for Rs. 20 per cup; any remaining unsold at the end of the day, can be disposed at a salvage price of Rs. 2.5 per cup. Past sales have ranged between 13 and 17 cups per day; there is no reason to believe that



sales volume will take on any other magnitude in future. Find the expected monetary value and EOL, if the sales history has the following probabilities:  
(9)

<b>Market Size</b>	13	14	15	16	17
<b>Probability</b>	0.10	0.15	0.15	0.25	0.35

b) At Modern Lumber Company, Kishore the president and a producer of an apple crates sold to growers, has been able, with his current equipment, to produce 240 crates per 100 logs. He currently purchases 100 logs per day, and each log required 3 labour hours to process. He believes that he can hire a professional buyer who can buy a better quality log at the same cost. If this is the case, he increases his production to 260 crates per 100 logs. His labour hours will increase by 8 hours per day. What will be the impact on productivity (measured in crates per labour-hour) if the buyer is hired? What is the growth in productivity in this case?  
(5)

17. a) A project has the following list of activities and time estimates:

<b>Activity</b>	<b>Time (Days)</b>	<b>Immediate Predecessors</b>
A	1	-
B	4	A
C	3	A
D	7	A
E	6	B
F	2	C, D
G	7	E, F
H	9	D
I	4	G, H

(a) Draw the network. (b) Show the early start and early finish times. (c) Show the critical path.  
(10)

b) An opinion survey involves designing and printing questionnaires, hiring and training personnel, selecting participants, mailing questionnaires and analysing data. Develop the precedence relationships and construct the project network. **(4)**

**OR**

18. a) The following table shows the precedence requirements, normal and crash times, and normal and crash costs for a construction project:

Activity	Immediate Predecessors	Required Time (Weeks)		Cost (Rs.)	
		Normal	Crash	Normal	Crash
A	-	4	2	10,000	11,000
B	A	3	2	6,000	9,000
C	A	2	1	4,000	6,000
D	B	5	3	14,000	18,000
E	B, C	1	1	9,000	9,000
F	C	3	2	7,000	8,000
G	E, F	4	2	13,000	25,000
H	D, E	4	1	11,000	18,000
I	H, G	6	5	20,000	29,000

Draw the network. (b) Determine the critical path. (c) Determine the optimal duration and the associated cost. **(10)**

b) Differentiate between CPM and PERT. **(4)**

19. a) What is meant by market segmentation and explain the process of market segmentation **(8)**

b) The Honda Co. in India has a division that manufactures two-wheel motorcycles. Its budgeted sales for Model G in 2019 are 80,00,000 units. Honda's target ending inventory is 10,00,000 units and its beginning inventory is 12,00,000 units. The company's budgeted selling price to its distributors and dealers is Rs. 40,000 per motorcycle. Honda procures all its wheels from an

outside supplier. No defective wheels are accepted. Honda's needs for extra wheels for replacement parts are ordered by a separate division of the company. The company's target ending inventory is 3,00,000 wheels and its beginning inventory is 2,00,000 wheels. The budgeted purchase price is Rs. 1,600 per wheel.

(a) Compute the budgeted revenue in rupees.

(b) Compute the number of motorcycles to be produced.

Compute the budgeted purchases of wheels in units and in rupees.? **(6)**

**OR**

20. a) a) "Human Resource Management policies and principles contribute to effectiveness, continuity and stability of the organization". Discuss. (b) What is a budget? Explain how sales budget and production budgets are prepared? **(10)**

b) Distinguish between the following: (a) Assets and Liabilities (b) Production concept and Marketing concept (c) Needs and Wants (d) Design functions and Operational control functions in operations **(4)**

## Teaching Plan

Sl.No	TOPIC	SESSION
<b>Module I</b>		
1.1	Introduction to management	1
1.2	Levels of managers and skill required	2
1.3	Classical management theories	3
1.4	neo-classical management theories	4
1.5	modern management theories	5
1.6	System approaches to Management,	6
1.7	Task and Responsibilities of a professional Manager	7
<b>Module 2</b>		
2.1	Management process – planning	8
2.2	Mission – objectives – goals – strategy – policies – programmes – procedures	9
2.3	Organizing, principles of organizing, organization structures	10
2.4	Directing, Leadership	11
2.5	Motivation, Controlling	12
<b>Module III</b>		
3.1	Concept of productivity and its measurement Competitiveness	13
3.2	Decision making process;	14
3.3	Models in decision making	15
3.4	Decision making under certainty and risk	16
3.5	Decision making under uncertainty	17
3.6	Decision trees	18
3.7	Models of decision making.	19
<b>Module IV</b>		
4.1	Project Management	20

<b>Sl.No</b>	<b>TOPIC</b>	<b>SESSION</b>
	<b>Module I</b>	
4.2	Network construction	21
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4.8	Introduction to crashing	
	<b>Module V</b>	
5.1	Introduction to functional areas of management,	28
5.2	Operations management	29
5.3	Human resources management ,	30
5.4	Marketing management	31
5.5	Financial management	32
5.6	Entrepreneurship,	33
5.7	Business plans	34
5.8	Corporate social responsibility, Patents and Intellectual property rights	35