Vidya Jyothi Institute of Technology
(Accredited by NBA, Approved by AICTE New Delhi)
Aziz nagar Gate, C.B. Post, Hyderabad-500 075

DEPARTMENT OF MECHANICAL ENGINEERING

REGULATION:	R15
BATCH:	2017-2021
ACADEMIC YEAR:	2020 - 2021
PROGRAM:	B.TECH (MECHANICAL ENGINEERING)
YEAR/SEM:	IV / II
COURSE NAME:	PRODUCTION PLANNING & CONTROL
COURSE CODE:	A18345

NAME OF THE FACULTY: Dr. B. SUDHABINDU

DESIGNATION: Asst.Professor

COURSE FILE INDEX

SYLLABUS

UNIT	TOPICS	Total No. of Hours
I	**Introduction:** Definitions — objectives of production planning and control- functions of production planning and control elements of production control- types of production- organization of production planning and control — internal organizations department.	10
II	**Forecasting** – Importance of forecasting — types of forecasting, their uses- general principles of forecasting techniques- Qualitative methods and quantitative methods	8
III	**Inventory Management**- Functions inventory- Relevant inventory cost- ABC analysis- VED Analysis- EOQ model -Inventory control systems — P-Systems and Q — Systems introduction to MRP and ERP, LOB (Line of balance), JIT inventory, Japanese concepts.	15
IV	**Routing** – Definition — routing procedure- Route sheets — Bill of material- factors affecting routing procedure. Schedule — definition — difference with loading. Scheduling polices — techniques, standard scheduling methods- job shop, flow shop,. Line balancing, aggregate planning- methods for aggregate planning- Chase planning, expediting, control aspects.	25
V	**Dispatching** – Activities of dispatcher- Dispatching procedure — follow up — definition — reasons for existence of functions — types of follow up, applications of computer in production planning and control.	6
	TOTAL HOURS	64

TEXT BOOK & OTHER REFERENCES

S. NO.	TITLES
	TEXT BOOKS
1	Production Planning and Control/ M. Mahajan/ Dhanpati rai & Co.
2.	Production Planning and Control/ Jain & Jain/ Khanna publications
3	Production Planning and Control – Text & cases/ SK Mukhopadhyaya/ PHI.
4	Production and operations Management/ R. Panneer Selvam/ PHI.
5	Operations Management/Chase/PHI.
	REFERENCES
1	Operations Management/ Heizer/ Pearson.
2	Production and Operations Management (Theory and Practice) Dipak Kumar Bhattacharyya/ University Press.
3	Operations Management/ S.N. Chary/TMH
	Web References: • http://nptel.ac.in/courses/112105125/28 https://ocw.mit.edu/courses

PROGRAM OUTCOMES (PO's) & PROGRAM SPECIFIC OUTCOMES (PSO's)

PO's	STATEMENT
PO1	**Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO2	**Problem Analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO3	**Design/Development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO4	**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.
PO5	**Modern tool usage:** Create, select, and apply appropriate techniques, resources and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
PO6	**The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO7	**Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO8	**Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO9	**Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO10	**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.
PO11	**Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in team, to manage projects and in multidisciplinary environments.
PO12	**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.

PSO'S	STATEMENT
PSO1	Analyze and solve problems of thermal and manufacturing by comprehensive design of mechanical engineering components.
PSO2	Ability to design, develop and implement mechanical engineering solutions keeping in view, sustainability environmental issues with social responsibility

COURSE OBJECTIVES & COURSE OUTCOMES (CO's)

Course Objectives:

The objective of the course is to:

1	Understand the basic concepts of production planning and control. General principles and importance of forecasting techniques and analysis of inventory.
2	Plan the stock required based on various methods like MRP, ERP, LOB, JIT and other Japanese concepts. Know the factors of routing and schedule.
3	Apply standard scheduling methods and line balancing, dispatching procedure using computers

Course Outcomes:

At the end of the course, the students should be able to:

Production Planning & Control/A18345	**CO1**	Understand the basic concepts of production planning and control.
	CO2	Appreciate principles and importance of forecasting techniques.
	CO3	Analysis of various inventory management and control systems. Plan the stock required based on various methods like MRP, ERP, LOB, JIT and other Japanese concepts.
	CO4	Know the factors of routing and schedule. Apply standard scheduling methods and line balancing.
	CO5	Appreciate dispatching procedure and application of computer in production planning and control.

MAPPING OF COURSE OUTCOMES (CO's) WITH PROGRAM OUTCOMES (PO's) & PROGRAM SPECIFIC OUTCOMES (PSO's)

Production Planning & Control/A18345

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	1	1		1		3				3		3
CO2	3	3	3	3	3		3	3		3	3			3
CO3	3	3	3	3	3					3	3			2
CO4	3	3	3	3	3			3		3				
CO5	2	2				2		2			2	3		2
AVG	**2.8**	**2.8**	**2.5**	**2.5**	**3.00**	**1.5**	**3**	**2.75**		**3**	**2.67**	**3**		**2.5**

ACADEMIC CALENDAR

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B.Tech II & III Year Revised Academic Calendar for the Academic Year 2020-21

SECOND SEMESTER		Commencement of Class Work 30.03.2021	
I Spell of Instructions	30.03.2021	12.06.2021	11 WEEKS
I Mid Examinations	14.06.2021	22.06.2021	8 DAYS
II Spell of Instructions	23.06.2021	14.08.2021	8 WEEKS
II Mid Examinations	16.08.2021	19.08.2021	4 DAYS
Practical Examinations	20.08.2021	24.08.2021	4 DAYS
Betterment Examinations	25.08.2021	28.08.2021	4 DAYS
End Semester Examinations	30.08.2021	18.09.2021	3 WEEKS
Commencement of class work for B. Tech., III & IV Year I Semester will be from 20.09.2021			

DEAN EXAMS.

DIRECTOR

TEACHING SCHEDULE

Lecture No. as per period	Topic
UNIT-I INTRODUCTION	
LH 1	Introduction
LH 2	About Production Planning and Control
LH 3	System approach
LH 4	Types of manufacturing systems
LH 5	Functions of Production Planning and Control and its elements.
LH 6	Factors affecting manufacturing systems
LH 7	Types of production- job shop and batch
LH 8	Organization of Production Planning and Control and its objectives
LH 9	Objectives of Production Planning and Control
LH 10	Internal organizations
UNIT-II FORECASTING	
LH 11	Introduction- forecasting
LH 12	Fundamentals, types and uses
LH 13	Principles of Forecasting
LH 14	Qualitative methods
LH 15	Quantitative methods
LH 16	Time series models
LH 17	Problems
LH 18	Problems
UNIT-III Inventory management	
LH 19	Introduction
LH 20	Functions of Inventory
LH 21	Relevant inventory cost
LH 22	ABC analysis
LH 23	VED analysis
LH 24	Problems
LH 25	Problems
LH 26	EOQ model and Problem
LH 27	Inventory control systems
LH 28	P and Q systems
LH 29	Introduction to MRP and ERP
LH 30	Line of balance
LH 31	Problems
LH 32	JIT

LH 33	Japanese concepts
UNIT-IV Routing	
LH 34	Introduction
LH 35	Design of routing
LH 36	Routing procedure
LH 37	Examples
LH 38	Route sheets
LH 39	Examples
LH 40	Bill of materials
LH 41	Factors affecting routing procedure
LH 42	Definition of scheduling
LH 43	Difference with loading
LH 44	Problems
LH 45	Introduction
LH 46	Definition of scheduling
LH 47	Various techniques in scheduling
LH 48	Approaches in scheduling
LH 49	Algorithms in scheduling
LH 50	Standard scheduling methods
LH 51	Job shop
LH 52	Flow shop
LH 53	Problems
LH 54	Introduction on line balancing
LH 55	Aggregate planning & selection
LH 56	Different methods of aggregate planning
LH 57	Expediting and Control aspects
LH 58	Problems
UNIT-V Dispatching	
LH 59	Introduction - activities
LH 60	Dispatching procedure with example
LH 61	Follow up with definition
LH 62	Reasons for existence of functions
LH 63	Types of follow up
LH 64	Applications of computers

ASSIGNMENT QUESTIONS

ASSIGNMENT I

Q.No	Question	Bloom's Taxonomy Level	Course Outcomes
1	Discuss the scope and factors affecting PPC?	L2	CO 1 Unit1
2	Define time series. What are the various components and their advantages and disadvantages?	L3	CO 1 Unit 1
3	Distinguish ABC and VED analysis?	L3	CO 2 Unit3
4	Differentiate P and Q systems.	L3	CO 2 Unit3
5	Differentiate between MRP and ERP?	L3	CO 3 Unit3

ASSIGNMENT II

Q.No	Question	Bloom's Taxonomy Level	Course Outcomes
1	Explain briefly about the difference between loading and unloading?	L2	CO 3 Unit4
2	Differentiate between Job shop and batch shop?	L3	CO 4 Unit4
3	Write short notes on expediting control aspects?	L3	CO 4 Unit4
4	List out various types of follow up?	L3	CO 5 Unit5
5	Describe the follow up phase of ppc?	L1	CO 5 Unit5

MID QUESTION PAPERS I & II

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IV B.Tech II Semester MID II Examination, August/Sep-2021

Subject: PPC **Branch: MECH**

Time: 90 Minutes **Max Marks: 20**

Note: This question paper contains two ***Parts A and B.***

Part A is compulsory which carries 6 Marks.

Part B consists of 3 questions. Answer all the questions.

Bloom's Level:

Remember	I
Understand	II
Apply	III
Analyze	IV
Evaluate	V
Create	VI

PART-A (3Q×2M =6Marks)		**Outcomes**		**Bloom's Level**	**Marks**
ANSWER ALL THE QUESTIONS		**CO**	**PO**		
1.i)	What is MRP?	CO3	1,2,4,5,6,7,9,10	I	2
[OR]					
ii)	What are the benefits of MRP?	CO3	1,3,5,7,8,9,10,11	II	2
2.i)	What is meant by Routing?	CO4	1,2,4,5,6,7,9,10,11	II	2
[OR]					
ii)	What is meant by loading?	CO4	1,3,5,7,8,9,10.11	III	2
3.i)	Enumerate the duties of dispatcher.	CO5	1,2,4,5,67,8,9,10	I	2
[OR]					
ii)	Explain the applications of computers in PPC.	CO5	1,2,4,5,6,7,9,10	II	2
PART-B (4+5+5= 14 Marks)		**Outcomes**		**Bloom's Level**	**Marks**
ANSWER ALL THE QUESTIONS		**CO**	**PO**		
4. i)	Explain various functions of Inventory.	CO3	1,2,3,4,5,6,7,8,9,10	III	4
[OR]					
ii)	Explain the functions of MRP system.	CO3	1,3,5,7,8,9,10.11	III	4
5. i)	What is scheduling. Differentiate forward and backward scheduling	CO4	1,2,4,5,6,7,9,10	II	5
[OR]					

ii.	Explain the importance of bills of material in production control. How does it help in assembly production?	CO4	1,3,5,6,8,9,10,11	III	5
6.i)	Explain briefly about centralized dispatching.	CO5	1,2,3,4,5,67,8,9,10	III	5
	[OR]				
ii)	What is meant by follow up and list out the activities of follow up.	CO5	1,2,3,4,5,67,8,9,10	III	5

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III Year B.Tech II Semester 1st Mid Exam

Branch: Mechanical	Duration: 90Min
Sub: PPC	Marks: 20
Date:	Session:

Course Outcomes:

1 Understand the basic concepts of production planning and control.
2. Appreciate principles and importance of forecasting techniques.
3. Analysis of various inventory management and control systems. Plan the stock required based on various methods like MRP, ERP, LOB, JIT and other Japanese concepts.
4. Know the factors of routing and schedule. Apply standard scheduling methods and line balancing.

Bloom's Level:

Remember	I
Understand	II
Apply	III
Analyze	IV
Evaluate	V
Create	VI

PART-A (3Q×2M =6Marks)		**Course Outcomes**		**Bloom's Level**	**Marks**
ANSWER ALL THE QUESTIONS		**CO**	**PO**		
1.i)	List out the planning functions and controlling functions separately	1	1,3,5,6,7	II	2
	[OR]				
ii)	Define product analysis?	1	1,2,3,5,7	II	2
2.i)	Explain different types of forecasting.	2	1,3,7,12	II	2
	[OR]				
ii)	Write short notes on objectives of forecasting.	2	1,2,3,5,7	I	2
3.i)	Explain various costs associated with inventory.	3	1,2,3,5,7	I	2
	[OR]				
ii)	Explain in brief Reorder Quantity	3	1,2,3,5,7		2

PART-B (5+5+4= 14 Marks)		**Course Outcomes**		**Bloom's Level**	**Marks**
ANSWER ALL THE QUESTIONS		**CO**	**PO**		
4.i.a)	Explain the objectives of PPC	1	1,3,5,6,7	I	2
b)	What are differences between job shop, batch type and continuous production systems	1	1,3,5,6,7	II	3
	[OR]				
ii.a)	What is control phase and action phase.	1	1,3,5,6,7	I	3
b)	Discuss the applications of computers in production control.	1	1,3,5,6,7	II	2
5. i.a)	Explain the process of sales forecasting?	2	1,2,3,5,7	II	2
b)	Name the various methods of sales forecasting and describe any one method.	2	1,3,7,12	I	3
	[OR]				
ii.a)	Explain the general principles of forecasting techniques	2	1,3,5,6,7	II	2
b)	Write the objectives of forecasting. What is least square method?	2	1,3,5,6,7	II	3
6.i)	Describe briefly the ABC and VED analysis of inventory control.	3	1,3,7,12	II	4
	[OR]				
ii)	Describe the various re ordering systems with their advantages and limitations.	3	1,2,3,5,7	II	4

*****VJIT(A)*****

Dean Exminations **DIRECTOR**

RUBRICS FOR MID EXAMINATION EVALUATION

Criteria of Evaluation	Poor (1)	Satisfactory (2)	Good (3)	Very Good (4)	Excellent (5)
Interpretation	Answer reflects that the question was not understood at all	Answer reflects that the question was somewhat understood	Answer reflects that the Question was understood to a reasonable	Answer reflects that the Question was understood to an	Answer reflects that the Question was completely understood
Presentation	No proper presentation	Presentation was marginal with issues in legibility and grammar	Presentation was clear but with grammatical errors	Presentation was explicitly good and clear with minor grammatical	Presentation was excellent and clear with no grammatical errors
Solution	Solution has more errors	Solution has moderate amount of errors	Solution was complete but with minor errors	Solution was complete but with no clear mention of entire procedure	Solution was accurate/ complete with clear mention of the entire

LETCURE NOTES

1. INTRODUCTION

We will be shouldering the responsibilities of executive of tomorrow so it is to understand methods, plans, various techniques that are essential to operate the effectively and efficiently. For this purpose we must have the knowledge of PPC. This is also true that this subject intervene into many departments of industrial organization, their relations with these departments are explained in first few topics. This basic objective of creating the manufacturing organization is to make the products. Thus the production is the nucleus or the centre of entire business operations. It must be emphasized, however, that on signal system of forecasting, preplanning, planning and control is suited to all industrial enterprises, no matter how well it may meet the needs of this on that special company. PPC functions look after the manufacturing activities. PPC comprise the planning, routing, dispatching in the manufacturing process so that the movement of material, performance of machines and operation of labour however are subdivided and are directed and coordinated as to quantity, quality, time and place. Planning and control are two basic and interrelated managerial functions. They are so interrelated that they can be and often are considered as being one function. Planning is the preparation activity while control is the post-operation function. Both of them are so closely related that they are treated as Siamese twins. Planning sets the objectives, goals, targets on the basis of available resources with their given constraints. Control is the integral part of effective planning. Similarly control involves assessment of the performance, such assessment can be made effectively only when some standard of are set in advance. Planning involves setting up to such standard. The controlling is made by comparing the actual performance with these present standard and deviations are ascertained and analyzed. Production is an organised activity of converting raw materials into useful products but before starting that work of actual production, production planning is done in order to anticipated possible difficulties and decide in advance as to how the production should be carried out in the best and economical way. Since mere planning of production is not only sufficient, hence management takes all possible steps to see that project or plan chalked by the planning department are properly adhered to and the standards set are attained in order to achieve it, control over production is exercised. The aim of production control is to produce the products of right quality, in right quantity at the right time by using the best and least expensive methods.

 PPC thus defines as the process of planning the production in advance, setting the exact route of each item give “production order” to shops and lastly to follows up of progress of produces according to order. The principles of PPC gives in the statement, “First plan your work, then work your plan”. There are few other department associated with PPC are personnel department, manpower planning, costing department etc. Design department is important one as “ The design is the problem of anticipating or trying to do what will be required in future and improving what is being already produced. 1.2 PREPLANNING, PLANNING & CONTROL The activities of preplanning, planning and control may be considered to take place in a time sequence. The preplanning is completed before production commences. Planning takes place immediately before production starts and control is exercised during production. Preplanning : It is the procedure followed in developing and designing a work or production of a developing and installing a proper layout or tools. It may be involved many functions of the organization and draws upon forecasting, product design, jigs and tool design, machine selection and estimating to enable proper design to be made. In short, preplanning decides what shall be made and how it shall be made. In respective manufacture a large uneconomic output could be produced if preplanning is omitted. It is also important in one of the operations such as setting up a new plants as preplanning can identify and avoid probable costly errors. Planning : This stage decides where and when the product shall be made. It includes the sequencing of operations viz outing and the time schedule for manufacturing viz scheduling. It

also states procedures for material planning and supplies, machine loading and deliveries. To perform as functions properly it will need past records of performance and to control statistic which may be obtained from pre-planning, cost control or progress. Control : This refers to the stage of ensuring that the planned action is in tact carried out. Control initiate the plan at the right time using dispatching and there after control makes appropriate adjustments through progressing to take care of any unforeseen circumstances

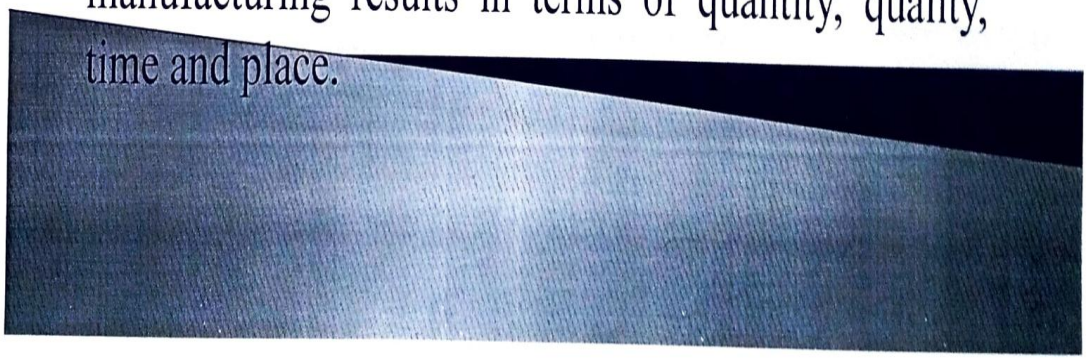
that might arise. It includes measurement of actual results, comparison of the same with the planned action and feeding back information the planning stage to make any adjustments required. The pattern of control is seen in material control, machine utilization, labour control, cost control and quality control.

PPT MATERIAL

Production Planning & Control

Production planning and control is the organization and planning of the manufacturing process.

It co-ordinates supply and movement of materials and labor, ensures economic and balanced utilization of machines and equipment as well as other activities related with production to achieve the desired manufacturing results in terms of quantity, quality, time and place.



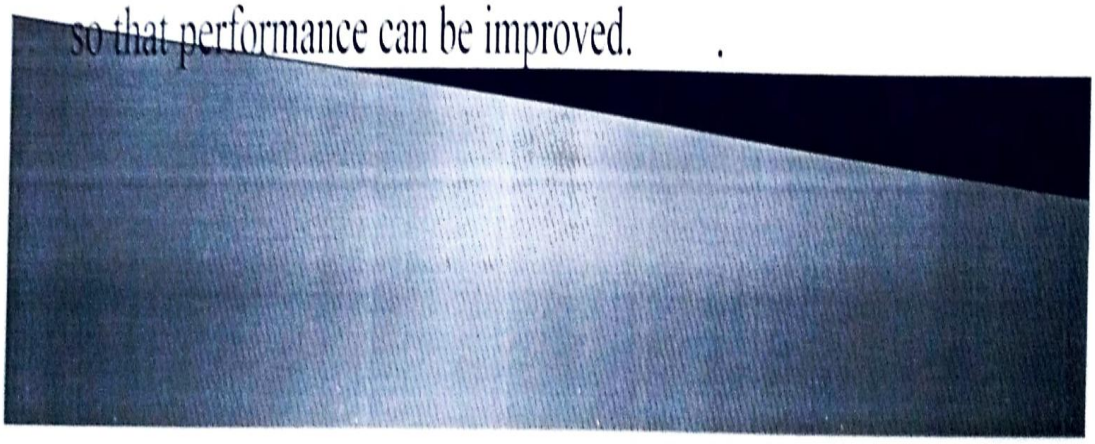
Production Planning & Control

There are three stages in PPC

Planning : The choice from several alternatives of the best utilizing the available resources to achieve the desired objective .

Operations: Performance in accordance with details set out in production plan.

Control: The monitoring of performance through a feed back by comparing the results achieved with planned targets so that performance can be improved.



END SEMESTER EXAMINATION QUESTION PAPERS

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Subject Code:A18345

R15

IV B.Tech II Semester Advanced Supplementary Examination,August/September 2021

Subject: Production Planning & Control **Branch :ME**
Time: 3 Hours **Max. Marks:75**

Bloom's Level:

Remember	L1
Understand	L2
Apply	L3
Analyze	L4
Evaluate	L5
Create	L6

ANSWER ANY FIVE QUESTIONS		5QX15M = 75M	Bloom's Level	Marks
1 a)	Explain the objectives of production planning.		L2	7M
b)	Discuss the organization structure of Production planning and control department in detail.		L2	8M
2 a)	Briefly explain the activities in control phase of PPC.		L2	7M
b)	Discuss the importance of PPC department in a typical production system.		L2	8M
3 a)	Discuss the advantages and limitations of sales forecasting.		L2	7M
b)	Explain general forecasting techniques.		L3	8M
4 a)	Explain Least square method of sales forecasting with its advantages and limitations.		L2	7M
b)	Explain how forecating is useful making production plan of an organization.		L3	8M
5 a)	Differentiate between VED analysis with ABC analysis.		L2	7M
b)	Explain the inputs and outputs of the MRP system in detail.		L2	8M
6 a)	Explain the term Line of Balance (LOB) in Production control along with the steps involved in it.		L2	7M
b)	Discuss about P and Q systems in inventory management.		L3	8M
7 a)	Explain the factors which influence the scheduling.		L2	7M
b)	Discuss the concept of Line Balancing in detail.		L2	8M
8 a)	Discuss in detail the steps involved in dispatching.		L2	7M
b)	Discuss the applications of computers in PPC.		L2	8M

VJIT(A)

SAMPLE COPIES OF ASSIGNMENTS

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1) Discuss the scope and factors affecting PPC?

A) production planning and control may be defined as the coordination of the series of tns which will utilize the plant facilities and regulate the orderly movement of goods during the entire manufacturing cycle

Factors affecting PPC are :-

1. It selects the best layout & work flow methods
2. It holds up the responsibility of selecting m/c's & equipments, procedures and schedules.
3. It computes the processing time
4. It determines loading & scheduling
5. It controls routing procedures

2Q) Define time series, what are the various components, advantages and disadvantages of time series?

A) Time series :- It is an arrangement of statistical data in a chronological order i.e in accordance with its time of occurence.

Components :-

1. Long term Movements
2. Short term Fluctuations
3. Random fluctuations

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1) Explain briefly about the Difference b/w loading and scheduling?

Loading:

1. The relationship which exists b/w load and capacity of work center.
2. It is concerned with having sufficient capacity for production plan
3. It deal with proper utilization of m/c's based on their capacity & to fit for the task for production plan.
4. Loading activities are used in scheduling

Scheduling

1. It deals with performing operations to product at the right time and determing starting & completion time of each operations.
2. It undertakes the task for completing the operations on maturity date.
3. It is a different task when compared to loading as it focuses on efficiency of plant, man power and equipment.
4. It ensures proper utilization of all the activities so that the operation is effective.

2) Briefly differentiate the job shop and batch shop?

Job shop

1. Standard machineries are installed whether the factory is engaged in light medium or heavy engg.
2. Similar machines are arranged
3. cost and time required to make product will be high
4. Work in progress will be high.
5. Involving standard material handling equipment

Batch shop

1. Special purpose machineries are installed
2. Different machines may be grouped
3. operation time & total time to make product will be satisfactory.
4. Similar to job production.
5. Requires special purpose handling equipment.

ASSESSMENT SHEET – CO WISE (DIRECT ATTAINMENT)

CO ATTAINMENT		
Batch: 2017-2021	**Year-Sem: IV-II**	**Course: PPC**

Mid 1												
PPC_M1	**Part A**			**Part B**			**Assignment**					**Total Marks**
Roll No:	**Q1**	**Q2**	**Q3**	**Q4**	**Q5**	**Q6**	**A_Q1**	**A_Q2**	**A_Q3**	**A_Q4**	**A_Q5**	
17911A0301	1	2	2	2	2	4	1	1	1		1	17
17911A0302	1	2	2	2	2	2	1	1	1		1	15
17911A0306	2	1	2	2	2	3	1	1	1		1	16
17911A0308	2	2	1	3	3	3	1	1	1		1	18
17911A0309	2	2	2	5	4	4	1	1	1	1	1	24
17911A0312	1	2	2	3	3	3	1	1	1		1	18
17911A0313	2	2	2	4	4	4	1	1	1	1	1	23
17911A0314	2	2		2	2	3	1			1	1	14
17911A0315	2	2	2	5	5	4	1	1	1	1	1	25
17911A0317	2	1	2	3	3	3	1	1	1		1	18
17911A0319	2	1	2	2	2	3	1	1	1		1	16
17911A0320	2	2	2	5	4	4	1	1	1	1	1	24
17911A0321	2	2	2	5	4	4	1	1	1	1	1	24
17911A0322	2	2		1	1	3	1			1	1	12
17911A0323	1	2	2	2	2	3	1	1	1		1	16
17911A0324	1	2	2	2	2	3	1	1	1		1	16
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17911A03A0												AB
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17911A03A7	1	2	2	3	3	3	1	1	1		1	18
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17911A03B0	1	2	2	2	2	4	1	1	1		1	17
17911A03B1	1	2	2	2	2	4	1	1	1		1	17
17911A03B2	1	2	2	3	3	3	1	1	1		1	18
17911A03B3	2	2		1	1	3	1			1	1	12
17911A03B4	1	2	2	2	2	3	1	1	1		1	16
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17911A03C5	2	2	1	3	3	3	1	1	1		1	18
17911A03C6	2	2	1	2	2	4	1	1	1		1	17
17911A03C7	2	2	2	5	5	4	1	1	1	1	1	25
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17911A03C9	1	2	2	2	2	4	1	1	1		1	17
17911A03D0	2	2	2	5	4	4	1	1	1	1	1	24
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17911A03D6	1	2	2	2	2	4	1	1	1		1	17
17911A03D7	2		2	2	2	3	1			1	1	14
17911A03D8	2	2	1	3	3	3	1	1	1		1	18
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17911A03E1	2	2	2	4	4	4	1	1	1	1	1	23
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17911A03E3	2	2	1	2	2	3	1	1	1		1	16
17911A03E4	2	2	2	5	5	4	1	1	1	1	1	25
17911A03E5	2	2	1	2	2	4	1	1	1		1	17

17911A03E7	1	2	2	3	3	3	1	1	1		1	18
17911A03E8	2	2	2	5	5	4	1	1	1	1	1	25
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17911A03F4	2	2	2	5	5	4	1	1	1	1	1	25
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17911A03F8	2	1	2	2	2	2	1	1	1		1	15
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17911A03G0	2	2	2	5	5	4	1	1	1	1	1	25
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17911A03G3	1	2	2	2	2	3	1	1	1		1	16
17911A03G5	2	2	2	5	5	4	1	1	1	1	1	25
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17911A03G7	2	2	2	5	5	4	1	1	1	1	1	25
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17911A03H2	2	2	1	3	3	3	1	1	1		1	18
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17911A03J1	2	2	2	4	4	4	1	1	1	1	1	23
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17911A03J3	2	2	2	5	5	4	1	1	1	1	1	25
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17911A03L3	1	2	2	2	2	3	1	1	1		1	16
17911A03L4	2	2	2	4	4	4	1	1	1	1	1	23
17911A03L5	2	1	2	3	3	3	1	1	1		1	18
17911A03L6	2	2	2	5	5	4	1	1	1	1	1	25

17911A03L7	2	2	2	5	5	4	1	1	1	1	1	25
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17911A03L9		2	2	1	1	2	1			1	1	11
17911A03M0	2	2	2	4	4	4	1	1	1	1	1	23
17911A03M1	2	2	2	5	5	4	1	1	1	1	1	25
17911A03M2	1	2	2	2	2	3	1	1	1		1	16
17911A03M3	2	2	1	2	2	3	1	1	1		1	16
17915A0342	2		2	2	2	3	1			1	1	14
18915A0301	2	2	2	5	5	4	1	1	1	1	1	25
18915A0302	2	2	2	5	5	4	1	1	1	1	1	25
18915A0303	2	1	2	3	3	3	1	1	1		1	18
18915A0304	2	1	2	2	2	4	1	1	1		1	17
18915A0305	2	2	2	5	5	4	1	1	1	1	1	25
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18915A0307	2	2	2	5	5	4	1	1	1	1	1	25
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18915A0311	1	2	2	3	3	3	1	1	1		1	18
18915A0312	2	2	2	5	5	4	1	1	1	1	1	25
18915A0313	2	1	2	3	3	3	1	1	1		1	18
18915A0314	2	2	2	5	5	4	1	1	1	1	1	25
18915A0315	2	1	2	2	2	3	1	1	1		1	16
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18915A0319	1	2	2	2	2	4	1	1	1		1	17

18915A0320	2	2	2	5	4	4	1	1	1	1	1	24
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18915A0322	1	2	2	2	2	4	1	1	1		1	17
18915A0323	1	2	2	3	3	3	1	1	1		1	18
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18915A0326	2	2	2	5	5	4	1	1	1	1	1	25
18915A0327	2	2	2	4	4	4	1	1	1	1	1	23
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18915A0329	2	2	1	3	3	3	1	1	1		1	18
18915A0330	2	2	2	5	5	4	1	1	1	1	1	25
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18915A0336	1	2	2	2	2	4	1	1	1		1	17
18915A0337	1	2	2	2	2	3	1	1	1		1	16
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18915A0340	2	2	2	4	4	4	1	1	1	1	1	23
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18915A0342	1	2	2	2	2	4	1	1	1		1	17
18915A0343	1	2	2	2	2	4	1	1	1		1	17
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18915A0345	1	2	2	2	2	4	1	1	1		1	17

18915A0346	1	2	2	2	2	4	1	1	1		1	17
18915A0347	2	2	2	5	4	4	1	1	1	1	1	24
18915A0348	2	2	2	5	4	4	1	1	1	1	1	24
18915A0349	2	2	2	4	4	4	1	1	1	1	1	23
18915A0350	2	2	2	4	4	4	1	1	1	1	1	23
18915A0351	2	2	2	5	5	4	1	1	1	1	1	25
18915A0352	2	2	2	5	5	4	1	1	1	1	1	25
18915A0353		2	2	2	2	2	1			1	1	13
No of students attempted	231	232	232	235	235	235	236	236	236	236	236	
No of students who scored >= 60% Marks	180	197	208	151	151	235	235	223	224	127	235	
% of students who scored >= 60% Marks	78	85	90	64	64	100	100	94	95	54	100	
Attainment	3	3	3	2	2	3	3	3	3	1	3	

Mid 2												
PPC_M2	**Part A**			**Part B**			**Assignment**					**Total Marks**
Roll No:	**Q1**	**Q2**	**Q3**	**Q4**	**Q5**	**Q6**	**A_Q1**	**A_Q2**	**A_Q3**	**A_Q4**	**A_Q5**	
17911A0301	1	2	2	2	2	3	1	1	1		1	16
17911A0302	2	2	2	4	4	4	1	1	1	1	1	23
17911A0306	2	2	2	4	4	5	1	1	1	1	1	24
17911A0308	2	2	2	4	5	5	1	1	1	1	1	33

17911A0309	1	2	2	2	2	4	1	1	1		1	17
17911A0312	2	2	2	4	5	5	1	1	1	1	1	33
17911A0313	2	2	2	4	4	5	1	1	1	1	1	24
17911A0314	2	2	2	4	4	5	1	1	1	1	1	24
17911A0315	2	2	2	3	3	5	1	1	1	1	1	22
17911A0317	2	2	2	4	5	5	1	1	1	1	1	33
17911A0319	2	2	2	4	4	5	1	1	1	1	1	24
17911A0320	2	1	2	2	2	4	1	1	1		1	17
17911A0321	2	2	2	4	4	4	1	1	1	1	1	23
17911A0322	2	2	2	3	3	4	1	1	1	1	1	21
17911A0323	2	2		2	2	2	1			1	1	13
17911A0324	1	2	2	2	2	4	1	1	1		1	17
17911A0325	2	2	2	3	3	5	1	1	1	1	1	22
17911A0327	2	2	2	4	4	4	1	1	1	1	1	23
17911A0328	2	2	1	2	2	4	1	1	1		1	17
17911A0329	2	2	1	2	2	4	1	1	1		1	17
17911A0330	2	2	2	4	5	4	1	1	1	1	1	25
17911A0331	2	2	1	2	2	3	1	1	1		1	16
17911A0332	2	2	2	3	3	5	1	1	1	1	1	22
17911A0333	2	2	1	2	2	3	1	1	1		1	16
17911A0334	2	2	1	2	2	3	1	1	1		1	16
17911A0335	2	2	2	4	4	4	1	1	1	1	1	23
17911A0336	2	2	2	4	4	5	1	1	1	1	1	24
17911A0337	2	2	2	4	4	5	1	1	1	1	1	24
17911A0338	2	2	2	4	4	5	1	1	1	1	1	24
17911A0339	2	2	2	4	4	5	1	1	1	1	1	24

17911A0340	2	1	2	2	2	4	1	1	1		1	17
17911A0341	2	1	2	2	2	3	1	1	1		1	16
17911A0342	2	2	2	4	5	5	1	1	1	1	1	33
17911A0343	2	2	2	3	3	5	1	1	1	1	1	22
17911A0344	2	2	2	3	3	5	1	1	1	1	1	22
17911A0345	1	2	2	2	2	2	1	1	1		1	15
17911A0346	2	2	2	4	4	5	1	1	1	1	1	24
17911A0347	2	2	2	4	5	5	1	1	1	1	1	32
17911A0349	2	2	2	4	5	4	1	1	1	1	1	25
17911A0350	2	2	2	4	4	5	1	1	1	1	1	24
17911A0351	2	2	2	4	5	5	1	1	1	1	1	32
17911A0352	2	2	2	3	3	5	1	1	1	1	1	22
17911A0354	2	2	2	4	4	4	1	1	1	1	1	23
17911A0355	2	2	2	4	4	4	1	1	1	1	1	23
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17911A0358	2	2	2	4	4	5	1	1	1	1	1	24
17911A0359	2	2	2	4	4	4	1	1	1	1	1	23
17911A0360	2	1	2	2	2	2	1	1	1		1	15
17911A0361		2	2	1	1	2	1			1	1	11
17911A0362	2	2	2	4	5	5	1	1	1	1	1	33
17911A0363	2	1	2	2	2	3	1	1	1		1	16
17911A0365	2	2	1	2	2	4	1	1	1		1	17
17911A0367	2	2	2	4	4	4	1	1	1	1	1	23
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17911A0369	2	2	2	4	5	5	1	1	1	1	1	33
17911A0371	2	2	2	3	3	4	1	1	1	1	1	21

17911A0372	2	2	2	4	4	5	1	1	1	1	1	24
17911A0373	1	2	2	2	2	4	1	1	1		1	17
17911A0374	2	2	2	4	4	5	1	1	1	1	1	24
17911A0375	2	2	2	4	4	4	1	1	1	1	1	23
17911A0376	2	1	2	2	2	2	1	1	1		1	15
17911A0377	2	1	2	2	2	4	1	1	1		1	17
17911A0380	2	1	2	2	2	3	1	1	1		1	16
17911A0381	2	2	2	4	5	5	1	1	1	1	1	33
17911A0382	2	2	2	4	4	4	1	1	1	1	1	23
17911A0383	2	2	2	4	4	4	1	1	1	1	1	23
17911A0384	2	2	2	4	4	4	1	1	1	1	1	23
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17911A0391	2	2	2	4	4	4	1	1	1	1	1	23
17911A0392	2	2	2	4	5	5	1	1	1	1	1	33
17911A0393	2	2	2	4	4	5	1	1	1	1	1	24
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17911A0396	2	2	2	4	5	4	1	1	1	1	1	25
17911A0397	2	2	2	4	4	4	1	1	1	1	1	23
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17911A0399	2	2	2	3	3	5	1	1	1	1	1	22
17911A03A0												AB

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17911A03A2	2	2	2	4	5	5	1	1	1	1	1	25
17911A03A4	2	2	2	3	3	5	1	1	1	1	1	22
17911A03A5	2	2	2	3	3	5	1	1	1	1	1	22
17911A03A6	2	2	2	4	4	4	1	1	1	1	1	23
17911A03A7	2	2	2	4	5	4	1	1	1	1	1	25
17911A03A8	2	1	2	2	2	3	1	1	1		1	16
17911A03B0	2	2	2	4	4	4	1	1	1	1	1	23
17911A03B1	2	2		2	2	2	1			1	1	13
17911A03B2	2	2	2	4	5	5	1	1	1	1	1	32
17911A03B3	1	2	2	2	2	3	1	1	1		1	16
17911A03B4	1	2	2	2	2	4	1	1	1		1	17
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17911A03B6	2	2	2	3	3	4	1	1	1	1	1	21
17911A03B7	2	2	2	4	4	4	1	1	1	1	1	23
17911A03B8	2	2	2	4	4	4	1	1	1	1	1	23
17911A03B9	2	2	2	3	3	5	1	1	1	1	1	22
17911A03C1	2	2	2	4	4	5	1	1	1	1	1	24
17911A03C2	2	2	2	3	3	5	1	1	1	1	1	22
17911A03C3	2	2	2	4	5	5	1	1	1	1	1	33
17911A03C4	2	2	2	4	4	5	1	1	1	1	1	24
17911A03C5	2	2	2	4	4	5	1	1	1	1	1	24
17911A03C6	2	2	2	4	4	4	1	1	1	1	1	23
17911A03C7	2	2	2	3	3	5	1	1	1	1	1	22
17911A03C8	2	2	2	4	4	5	1	1	1	1	1	24
17911A03C9	2	2	2	4	4	5	1	1	1	1	1	24

17911A03D0	2	2	2	4	4	4	1	1	1	1	1	23
17911A03D1	2	1	2	2	2	3	1	1	1		1	16
17911A03D2		2	2	2	2	3	1			1	1	14
17911A03D3	2	2	2	4	4	5	1	1	1	1	1	24
17911A03D4	2	2	2	4	5	5	1	1	1	1	1	25
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17911A03D6	2	2	2	4	4	5	1	1	1	1	1	24
17911A03D7	2	2	1	2	2	3	1	1	1		1	16
17911A03D8	2	2	2	4	5	5	1	1	1	1	1	32
17911A03D9	2	2	2	3	3	5	1	1	1	1	1	22
17911A03E0	2	2	2	3	3	5	1	1	1	1	1	22
17911A03E1	2	2	2	3	3	4	1	1	1	1	1	21
17911A03E2	2	2	2	3	3	5	1	1	1	1	1	22
17911A03E3	2	2	2	4	4	4	1	1	1	1	1	23
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17911A03E5	2	2	2	4	4	5	1	1	1	1	1	24
17911A03E7	2	2	2	4	5	5	1	1	1	1	1	33
17911A03E8	2	2	2	4	5	5	1	1	1	1	1	25
17911A03E9	2	2	2	3	3	5	1	1	1	1	1	22
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17911A03F2	1	2	2	2	2	2	1	1	1		1	15
17911A03F4	2	2	2	3	3	5	1	1	1	1	1	22
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17911A03F6	2	2	2	3	3	4	1	1	1	1	1	21
17911A03F7	2	1	2	2	2	3	1	1	1		1	16

17911A03F8	2	1	2	2	2	2	1	1	1		1	15
17911A03F9	1	2	2	2	2	4	1	1	1		1	17
17911A03G0	2	2	2	4	5	5	1	1	1	1	1	25
17911A03G1	2	2	2	3	3	5	1	1	1	1	1	22
17911A03G2	2	2	2	4	4	5	1	1	1	1	1	24
17911A03G3	2	2	2	4	4	4	1	1	1	1	1	23
17911A03G5	2	2	2	4	5	5	1	1	1	1	1	25
17911A03G6	2	2	2	4	5	4	1	1	1	1	1	25
17911A03G7	2	2	1	2	2	3	1	1	1		1	16
17911A03G8	2	2	2	4	4	5	1	1	1	1	1	24
17911A03H0	2	2	1	2	2	4	1	1	1		1	17
17911A03H1	2	2	1	2	2	3	1	1	1		1	16
17911A03H2	2	2	2	4	5	5	1	1	1	1	1	33
17911A03H3	2	2	2	4	4	5	1	1	1	1	1	24
17911A03H4	2	2	2	4	5	5	1	1	1	1	1	33
17911A03H5	2	2	2	3	3	5	1	1	1	1	1	22
17911A03H6	2	2	2	4	4	4	1	1	1	1	1	23
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17911A03H9	2	2	2	4	4	5	1	1	1	1	1	24
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17911A03J2	2	2	2	4	5	5	1	1	1	1	1	32
17911A03J3	2	2	2	4	4	5	1	1	1	1	1	24
17911A03J4	2	2	2	4	4	5	1	1	1	1	1	24
17911A03J5	2	2	2	4	4	4	1	1	1	1	1	23
17911A03J6	2	2	2	4	4	4	1	1	1	1	1	23
17911A03J7	2	2	2	4	5	5	1	1	1	1	1	32

17911A03J9	2	2	2	4	4	5	1	1	1	1	1	24
17911A03K0	2	2	2	4	4	5	1	1	1	1	1	24
17911A03K1	2	2	2	4	4	5	1	1	1	1	1	24
17911A03K2	2	1	2	2	2	4	1	1	1		1	17
17911A03K3	2	2	2	4	4	4	1	1	1	1	1	23
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17911A03K7	1	2	2	2	2	3	1	1	1		1	16
17911A03K8	2	2	2	4	4	4	1	1	1	1	1	23
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17911A03L0	2	2	2	4	4	5	1	1	1	1	1	24
17911A03L1	2	2	2	3	3	4	1	1	1	1	1	21
17911A03L3	2	2	2	4	4	4	1	1	1	1	1	23
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17911A03L6	2	2	2	4	4	5	1	1	1	1	1	24
17911A03L7	2	2	2	3	3	5	1	1	1	1	1	22
17911A03L8	2	1	2	2	2	3	1	1	1		1	16
17911A03L9	2	1	2	2	2	2	1	1	1		1	15
17911A03M0	2	2	2	3	3	4	1	1	1	1	1	21
17911A03M1	1	2	2	2	2	3	1	1	1		1	16
17911A03M2	1	2	2	2	2	2	1	1	1		1	15
17911A03M3	2	2	2	4	4	5	1	1	1	1	1	24
17915A0342	2	2	1	3	3	3	1	1	1		1	18
18915A0301	2	2	2	4	4	5	1	1	1	1	1	24
18915A0302	2	2	2	4	4	4	1	1	1	1	1	23

18915A0303	2	2	2	4	5	5	1	1	1	1	1	33
18915A0304	2	2	2	4	4	5	1	1	1	1	1	24
18915A0305	2	2	2	3	3	5	1	1	1	1	1	22
18915A0306	2	2	2	4	4	4	1	1	1	1	1	23
18915A0307	2	2	2	4	4	4	1	1	1	1	1	23
18915A0308	2	2	2	3	3	5	1	1	1	1	1	22
18915A0310	2	2	2	4	4	5	1	1	1	1	1	24
18915A0311	2	2	2	4	5	5	1	1	1	1	1	33
18915A0312	2	1	2	2	2	4	1	1	1		1	17
18915A0313	2	2	2	4	5	5	1	1	1	1	1	33
18915A0314	2	2	2	4	4	4	1	1	1	1	1	23
18915A0315	2	1	2	2	2	4	1	1	1		1	17
18915A0316	2	1	2	2	2	4	1	1	1		1	17
18915A0317	2	2	2	4	4	4	1	1	1	1	1	23
18915A0318	2	2	2	3	3	4	1	1	1	1	1	21
18915A0319	2	2	2	4	4	5	1	1	1	1	1	24
18915A0320	1	2	2	2	2	4	1	1	1		1	17
18915A0321	2	2	2	4	5	5	1	1	1	1	1	25
18915A0322	2	2	2	4	4	4	1	1	1	1	1	23
18915A0323	2	2	2	4	5	5	1	1	1	1	1	32
18915A0324	2	2	2	4	4	4	1	1	1	1	1	23
18915A0325	2	2	2	3	3	4	1	1	1	1	1	21
18915A0326	2	2	2	4	4	4	1	1	1	1	1	23
18915A0327	2	2	2	3	3	4	1	1	1	1	1	21
18915A0328	1	2	2	3	3	3	1	1	1		1	18
18915A0329	2	2	2	4	5	5	1	1	1	1	1	32

18915A0330	2	2	2	4	4	4	1	1	1	1	1	23
18915A0331	2	2	2	4	4	5	1	1	1	1	1	24
18915A0332	2	2	2	3	3	4	1	1	1	1	1	21
18915A0333	2	2	2	4	4	5	1	1	1	1	1	24
18915A0334		2	2	2	2	2	1			1	1	13
18915A0335	2	2	2	3	3	4	1	1	1	1	1	21
18915A0336	1	2	2	2	2	3	1	1	1		1	16
18915A0337	2	2	2	4	4	4	1	1	1	1	1	23
18915A0338	2	2	2	3	3	5	1	1	1	1	1	22
18915A0339	2	2	2	4	4	5	1	1	1	1	1	24
18915A0340	2	2	2	3	3	4	1	1	1	1	1	21
18915A0341	1	2	2	2	2	4	1	1	1		1	17
18915A0342	2	2	2	3	3	4	1	1	1	1	1	21
18915A0343	2	2	2	4	4	5	1	1	1	1	1	24
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18915A0347	2	2	2	4	4	4	1	1	1	1	1	23
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18915A0349	2	2	2	3	3	4	1	1	1	1	1	21
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18915A0351	2	2	2	4	4	5	1	1	1	1	1	24
18915A0352	2	2	2	4	4	4	1	1	1	1	1	23
18915A0353	2	1	2	2	2	2	1	1	1		1	15
No of students	232	236	234	235	235	235	236	236	236	236	236	

attempted												
No of students who scored >= 60% Marks	216	216	222	186	186	235	235	230	231	189	235	
% of students who scored >= 60% Marks	93	92	95	79	79	100	100	97	98	80	100	
Attainment	3	3	3	3	3	3	3	3	3	3	3	

External	
Roll No:	**External Marks**
17911A0301	51
17911A0302	45
17911A0306	52
17911A0308	50
17911A0309	45
17911A0312	27
17911A0313	52
17911A0314	26
17911A0315	26
17911A0317	52
17911A0319	45
17911A0320	34
17911A0321	26
17911A0322	48

17911A0323	45
17911A0324	48
17911A0325	26
17911A0327	52
17911A0328	37
17911A0329	52
17911A0330	47
17911A0331	45
17911A0332	26
17911A0333	47
17911A0334	48
17911A0335	47
17911A0336	26
17911A0337	51
17911A0338	49
17911A0339	48
17911A0340	51
17911A0341	27
17911A0342	45
17911A0343	46
17911A0344	27
17911A0345	28
17911A0346	51
17911A0347	46
17911A0349	45
17911A0350	52

17911A0351	46
17911A0352	26
17911A0354	52
17911A0355	46
17911A0356	51
17911A0358	48
17911A0359	32
17911A0360	33
17911A0361	27
17911A0362	48
17911A0363	46
17911A0365	41
17911A0367	49
17911A0368	52
17911A0369	52
17911A0371	46
17911A0372	45
17911A0373	45
17911A0374	46
17911A0375	46
17911A0376	27
17911A0377	45
17911A0380	26
17911A0381	34
17911A0382	26
17911A0383	26

17911A0384	46
17911A0385	49
17911A0387	52
17911A0388	46
17911A0389	35
17911A0390	26
17911A0391	26
17911A0392	26
17911A0393	50
17911A0394	38
17911A0395	34
17911A0396	47
17911A0397	53
17911A0398	45
17911A0399	45
17911A03A0	AB
17911A03A1	50
17911A03A2	52
17911A03A4	46
17911A03A5	45
17911A03A6	52
17911A03A7	46
17911A03A8	52
17911A03B0	47
17911A03B1	52
17911A03B2	47

17911A03B3	52
17911A03B4	34
17911A03B5	49
17911A03B6	26
17911A03B7	26
17911A03B8	48
17911A03B9	52
17911A03C1	50
17911A03C2	52
17911A03C3	52
17911A03C4	46
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17911A03C7	49
17911A03C8	27
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17911A03D3	16
17911A03D4	40
17911A03D5	35
17911A03D6	31
17911A03D7	27
17911A03D8	27
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17911A03E0	52
17911A03E1	27
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17911A03E3	51
17911A03E4	45
17911A03E5	26
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17911A03G1	50
17911A03G2	45
17911A03G3	51
17911A03G5	47
17911A03G6	46
17911A03G7	33
17911A03G8	35

17911A03H0	32
17911A03H1	52
17911A03H2	27
17911A03H3	46
17911A03H4	26
17911A03H5	51
17911A03H6	51
17911A03H7	47
17911A03H9	26
17911A03J1	27
17911A03J2	47
17911A03J3	27
17911A03J4	26
17911A03J5	51
17911A03J6	49
17911A03J7	52
17911A03J9	47
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17911A03K2	46
17911A03K3	48
17911A03K5	47
17911A03K6	52
17911A03K7	45
17911A03K8	45
17911A03K9	31

17911A03L0	49
17911A03L1	47
17911A03L3	46
17911A03L4	47
17911A03L5	51
17911A03L6	45
17911A03L7	47
17911A03L8	33
17911A03L9	36
17911A03M0	27
17911A03M1	26
17911A03M2	52
17911A03M3	45
17915A0342	31
18915A0301	49
18915A0302	16
18915A0303	26
18915A0304	48
18915A0305	26
18915A0306	47
18915A0307	51
18915A0308	47
18915A0310	52
18915A0311	26
18915A0312	52
18915A0313	45

18915A0314	52
18915A0315	48
18915A0316	27
18915A0317	55
18915A0318	47
18915A0319	26
18915A0320	50
18915A0321	41
18915A0322	36
18915A0323	46
18915A0324	27
18915A0325	47
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18915A0337	47
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18915A0339	47

18915A0340	38
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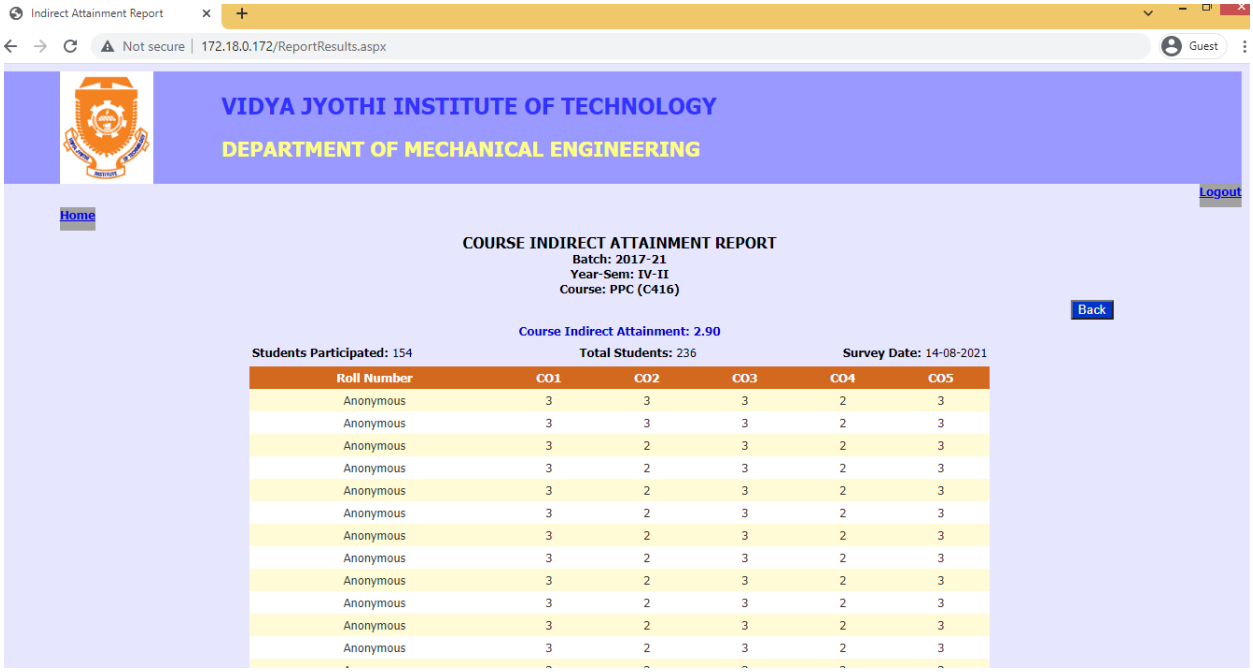
18915A0345	40
18915A0346	26
18915A0347	52
18915A0348	26
18915A0349	34
18915A0350	52
18915A0351	47
18915A0352	46
18915A0353	52
No of students attempted	235
No: of students who scored more than 60%	150
% of students who scored more than 60%	64
Attainment	2

CO	Method	Value	Average	Attainment Level (Internal)	Attainment Level (External)	CO Direct Attainment (25%Int+75%Ext)
CO1	M1_D_Q1	3	2.75	2.80	2.00	**2.20**
	M1_D_Q4	2				
	M1_A_Q1	3				
	M1_A_Q2	3				
CO2	M1_D_Q2	3	2.25			
	M1_D_Q5	2				
	M1_A_Q3	3				
	M1_A_Q4	1				
CO3	M1_D_Q3	3	3.00			
	M1_D_Q6	3				
	M1_A_Q5	3				
	M2_D_Q1	3				
	M2_D_Q4	3				
	M2_A_Q1	3				
CO4	M2_D_Q2	3	3.00			
	M2_D_Q5	3				
	M2_A_Q2	3				
	M2_A_Q3	3				
CO5	M2_D_Q3	3	3.00			
	M2_D_Q6	3				
	M2_A_Q4	3				
	M2_A_Q5	3				

Direct CO Attainment	2.20
Indirect CO Attainment	2.90
Overall CO Attainment (0.8 * Direct Attainment+ 0.2 * Indirect Attainment)	2.34

COURSE END SURVEY FORM


Indirect Attainment Report
Not secure | 172.18.0.172/ReportResults.aspx
Guest
VIDYA JYOTHI INSTITUTE OF TECHNOLOGY
DEPARTMENT OF MECHANICAL ENGINEERING
Logout
Home
COURSE INDIRECT ATTAINMENT REPORT
Batch: 2017-21
Year-Sem: IV-II
Course: PPC (C416)
Back
Course Indirect Attainment: 2.90
Students Participated: 154
Total Students: 236
Survey Date: 14-08-2021
Roll Number CO1 CO2 CO3 CO4 CO5
Anonymous 3 3 3 2 3
Anonymous 3 3 3 2 3
Anonymous 3 2 3 2 3
Anonymous 3 2 3 2 3
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Anonymous 3 2 3 2 3
Anonymous 3 2 3 2 3

TOPICS COVERED UNDER CONTENT BEYOND SYLLABUS

Project Management

- Managers have been planning, scheduling, monitoring, and controlling large scale projects for hundred years, but it has only been in the last 50 years that management science techniques have been applied to major projects.
- In 1957, the Critical Path Method (CPM) was developed by Kelly and Walker to assist in building and maintenance of chemical plants.
- In 1958, the special projects office of the US navy developed the Program Evaluation and Review Technique (PERT) to plan and control the Polaris missile program.
- In the recent time, PERT and CPM are two popular management science techniques that help mangers plan, schedule, monitor, and control large scale and complex projects

PERT/CPM

- PERT stands for Program Evaluation and Review Technique.
- CPM stands for Critical Path Method.
- PERT/CPM is used to plan the scheduling of individual activities that make up a project.
- PERT/CPM can be used to determine the earliest/latest start and finish times for each activity, the entire project completion time and the slack time for each activity.
- PERT and CPM are similar in their basic approach, they do differ in the way activity times are estimated.
- For each PERT activity three times (optimistic, pessimistic and most likely times) are combined to determine the expected activity completion time and its variance. Thus, PERT is a probabilistic technique: it allows us to find the probability of the entire project being completed by any given date.
- CPM, on the other hand, is called a deterministic approach. It uses two time estimate, the normal time and the crash time, for each activity

Importance of PERT/CPM

- By using PERT and CPM analysis you will be able to answer questions such as:

1. When will the entire project be completed?
2. What are the critical activities or tasks in the project, that is, the ones that will delay the entire project if they are late?
3. Which are the noncritical activities, that is, the ones that can run late without delaying the whole project's completion time?
4. What is the probability that the project will be completed by a specific date?
5. At any particular date, is the project on schedule, behind schedule, or a head of the schedule?
6. On any given date, is the money spent equal to, less than, or greater than the budgeted amount?
7. Are there enough resources available to finish the project on time?
8. If the project is to be finished in a shorter amount of time, what is the best way to accomplish this at the least cost? (crash analysis)

CPM

- Finding the critical path is a major part of controlling a project.
- The activities on the critical path represent tasks that will delay the entire project if they are delayed.
- Manager gain flexibility by identifying noncritical activities and replanning, rescheduling, and reallocating resources such as personnel and finances

INNOVATIONS IN TEACHING

Innovation Process Steps

Step 1: Define the Problem

The innovation process starts with a problem such as:

- increasing sales;
- improving the production process;
- satisfying the particular customer needs and etc.

Step 2: Generate Ideas

Methods of generating new ideas:

- Focus Groups
- Brainstorming
- Problem Inventory Analysis

Step 3: Evaluate the Ideas

Methods of evaluation:

- SWOT analysis
- Evaluation matrix
- Pass / fail evaluation

Step 4: Choose the best Idea / Ideas

The best innovative idea is that one that best fits your criteria and shows great results on your method for estimation.

Step 5: Develop the Idea

- Design
- Engineering
- Prototyping
- Test in the business environment
- Manufacturing
- Distribution
- Branding
- Marketing and sales

Step 6: Implement the Idea

Strategy elements to consider:

- Get personnel and management involved
- Train the staff
- Make a business plan
- Consider outside factors and details

Step7: Monitoring

Steps of the monitoring process:

- Collect data during the process of implementation
- Compare the collected data with required results for the particular moments
- Decide what actions have to be done to improve the process

COURSE CLOSURE REPORT

Regulation: R15

Batch: 2017-2021

Academic Year: 2020-2021

Program: B.Tech (Mechanical Engineering)

Year/Sem: IV/II

Course Name: Material Technology

Course Code: A18345

Contact Hours: 4Lectures/4 Credit

No. of Students: 236

No. of lecture classes taken	**56**
No. of tutorial classes taken	**10**
Course delivery modes	Lectures, Demonstration
Technology utilization	Power Point / OHP Slides
Assessment Tools	Internal Mid Examinations, Assignments and End Exam

OVERALL ATTAINMENT (80% DIRECT + 20% INDIRECT)	
DIRECT	2.20
INDIRECT	2.90
OVERALL ATTAINMENT	2.34