Gujarat Technological University
Shantilal Shah Engineering College, Bhavnagar
Production Engineering Department
Tool Engineering (2152507)
ALA COMPONENT TOPIC

Group No	ROLL NO.	ENROLMENT NO.	NAME OF STUDENTS	TOPIC	NAME OF GUIDE
1	5001	150430125062	KOTHIYA SANIT GHANSHYAMBHAI	Tool design practice, procedure of tool design, process planning and tool design,Place of machine in production , classification of material removal processes, orthogonal and oblique cutting, merchant's circle diagram-force and velocity relationship	Prof.B.J.Chudasma
	5002	160430125001	AKBARI HARDIK KAILESHBHAI		
	5003	160430125002	AMRELIYA RUTVIK MAHESHBHAI		
	5004	160430125003	BAMBHANIYA NAIMISH ARVIND BHAI		
	5005	160430125004	BARAIYA KEVAL		
2	5006	160430125005	BARAIYA RAMKUMAR DEVJIBHAI	types of cutting tool mechanics, their characteristics and selection criteria, mechanics of metal cutting- effect of tool-geometry and other cutting parameters,	Prof.B.J.Chudasma
	5007	160430125012	CHAD AKSHAR NARUBHAI		
	5008	160430125013	CHAUHAN DARSHAN NANDKISHORBHAI		
	5009	160430125015	CHAUHAN KAUSHIKBHAI SURESHBHAI		
	5010	160430125018	CHODVADIYA ANKURKUMAR MATHURBH		
3	5011	160430125020	DABHI VIMAL JAYSUKHBHAI	mechanisms of formation of chips-types of chips formed, concept of specific cutting pressure , types of tool wear, Factors causing wear, tool life, variables affecting tool life	Prof.B.J.Chudasma
	5012	160430125021	DASA RAVI DHIRUBHAI		
	5013	160430125022	DAVARA NIRAVKUMAR BHARATBHAI		
	5014	160430125023	DER VIJAYBHAI JAGUBHAI		
	5015	160430125025	DHAPA SUNNY VIJAYBHAI		
4	5016	160430125027	FAGA DASHARATHBHAI VIKRAMBHAI	economical cutting speed, machinability of metals, economics of machining.Thermal Aspects in Machining: Sources of heat generation in machining and its effects, temperature measurement techniques in machining,	Prof.B.J.Chudasma
	5017	160430125029	GOHIL AVIRAJSINH NARENDRASINH		
	5018	160430125030	GOHIL JAYRAJSINH DHARMENDRASINH		
	5019	160430125031	GOHIL MAYURSINH VIJAYSINH		
	5020	160430125032	GOHIL RAVIRAJSINH HARPALSINH		
5	5021	160430125033	GOYAL KAMLESHBHAI KABABHAI	types of cutting fluids, Functions of cutting fluid, Characteristics of cutting fluid, Application of cutting fluids,Design of Single Point Cutting Tools: Tool geometry for single point cutting tool, tool signature	Prof.B.J.Chudasma
	5022	160430125034	HADIYA KIRAN RANABHAI		
	5023	160430125036	JADAV RAHUL PREMJIBHAI		
	5024	160430125037	JADAV RAMJIBHAI GOVINDBHAI		
	5025	160430125038	JADVANI NIKITABEN ASHOKBHAI		
6	5026	160430125041	KACHHADIYA SAGARKUMAR MAHESHBH	Design of single point cutting tools such as solid tools , tipped tools, coated tipped,tools, throw away type tools and diamond tools.	Prof.P.V.Sartanpara
	5027	160430125043	KALAVADIA ARJUNKUMAR NARENDRABH		
	5028	160430125044	KALOLA YASH KANTIBHAI		
	5029	160430125045	KALSARIYA HARDIKKUMAR HADABHAI		
	5030	160430125049	KANSARA VATSAL RAJESHBHAI		
7	5031	160430125050	KATARIYA NITIN HIMMATBHAI	Design of milling cutters, gear milling cutters, hobs gear shaping tools,broaches, drills, reamers,	Prof.P.V.Sartanpara
	5032	160430125053	KHUNTI BHAVESH LAKHMANBHAI		
	5033	160430125055	KORAT MEET BHANUBHAI		
	5034	160430125056	KOTADIYA HITESHBHAI DULABHAI		
	5035	160430125057	LUKHI HARSHILKUMAR MUKESHBHAI		

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8	5036	160430125060	MAKWANA HARDIK SUDHIRBHAI	taps & dies for thread cutting, boring tools, flat form tools, circular form tools. Standard tool holders & standard tooling and their design for turrets and automates.	Prof.P.H.Solanki
	5037	160430125062	MALAVIYA DARSHAN HARESHBHAI		
	5038	160430125063	MAVANI JAYMIN HASMUKHBHAI		
	5039	160430125064	METALIYA CHINTAN MUKESHBHAI		
	5040	160430125065	MISHRA SUMITKUMAR SHREE RAJAN		
9	5041	160430125066	MODHAVADIYA HITESH KESHU	Cutting Tool Materials:Types of cutting tool materials, their selection and Applications.	Prof.P.H.Solanki
	5042	160430125068	NAVADIYA JAY ANILBHAI		
	5043	160430125069	PAGHDAR ANKITKUMAR VRAJLAL		
	5044	160430125072	PARMAR ANAND VALLABHBHAI		
	5045	160430125073	PARMAR JAYNEET JAYESHBHAI		
10	5046	160430125074	PARMAR RAHUL MOHANBHAI	Introduction to press tools and related terminology, effect of clearances,theory of deformation, stages of cutting operation, center of pressure	Prof.P.V.Sartanpara
	5047	160430125075	PARMAR VATSALKUMAR KIRANBHAI		
	5048	160430125076	PATAT KRUPAL DEVAYATBHAI		
	5049	160430125079	PATEL SON RAKESHBHAI		
	5050	160430125081	PIPALIYA JAYDIP HARJIBHAI		
11	5051	160430125082	PIPALIYA RAHUL MATHURBHAI	strap strip layout , die and punch design, design of simple, compound and progressive dies, methods of mounting punches and dies	Prof.P.V.Sartanpara
	5052	160430125083	PUROHIT BALDEV AMBASHANKARBHAI		
	5053	160430125087	SAMA TUFEL RAFIKBHAI		
	5054	160430125089	SARVAIYA YUVRAJSINH CHANDUBHA		
	5055	160430125090	SAVANI HARDIKKUMAR ASHOKBHAI		
12	5056	160430125092	SELADIYA HARSH SURESHBHAI	design of drawing dies, bend allowances, bending and forming dies, Dies for diecasting and forging operations.	Prof.P.V.Sartanpara
	5057	160430125093	SENJALIYA PIYUSHKUMAR PRADIPBHAI		
	5058	160430125095	SINGH SANDEEPKUMAR RADHAMOHAN		
	5059	160430125096	SOLANKI BHARATKUMAR MAHESHSINH		
	5060	160430125097	SOLANKI HITESHBHAI ASHOKBHAI		
13	5061	160430125098	SOLANKI PRADIPSINH DIPAKSINH	Essential requirements of jigs & fixtures, economics of jigs and fixtures,principles of location and clamping, location and clamping devices	Prof.P.H.Solanki
	5062	160430125100	SONAGARA MEHUL RANCHHOD BHAI		
	5063	160430125101	SOSA CHINTAN PALABHAI		
	5064	160430125103	TARAPADA PIYUSH BABUBHAI		
	5065	160430125106	VAGHASIYA SAVAN KISHORBHAI		
14	5066	160430125107	VAGHASIYA VAIBHAVKUMAR JAGDISHBH	types of drill bushes, types of jigs and fixtures- such as fixtures for milling,welding, heat treatment, grinding, assembly and inspection processes;	Prof.P.H.Solanki
	5067	160430125108	VALA RAVIRAJ RAMSINGBHAI		
	5068	160430125110	VARIYA DHAVALKUMAR ISHWARBHAI		
	5069	160430125113	VEGAD ROHAN JAYENDRABHAI		
	5070	160430125114	VEGAD VANRAJBHAI VASHRAMBHAI		

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Group No	ROLL NO.	ENROLMENT NO.	NAME OF STUDENTS	TOPIC	NAME OF GUIDE
15	5071	160430125115	VYAS DEVAM KAUSHIKBHAI	standardization in jigs and fixtures, principle of work holders, common work holders for production like vises, chucks, arbors, mandrels & collets.	Prof.P.H.Solanki
	5072	160430125116	ZAZDIYA JAYKUMAR VIPULBHAI		
	5073	160430125118	SUBHANKAR DEY		
	5074	170433125012	SACHANIYA KEYUR GOPALBHAI		

Instructions:

1. All students are required to submit ACTIVE LEARNING ASSIGNMENT(ALA)component CD/DVD mentioning on it
   (1) GROUP NUMBER
   (2) TOPIC NAME
   (3) SEM. 5th PRODUCTION ENGG.
   (4) SUBJECT CODE:-2152507, SUBJECT NAME:- Tool Engineering
   (5) STUDENT ENROLMENT NUMBERS AND NAMES with Permanent Marker in legible writing.
2. ACTIVE LEARNING ASSIGNMENTS: Preparation of power-point slides, which include videos, animations, pictures, graphics for better understanding of theory.
3. All students who are on roll at present are instructed to submit ALA - CD/DVD on **21/07/2018** without fail to **Prof. P.H.Solanki.**

Subject Co-ordinator:

Prof. P.H.Solanki

Shantilal Shah Engineering College, Bhavnagar
PRODUCTION ENGINEERING DEPARTMENT
ASSIGNMENT
Sem.5th B.E.(Production Engineering)
SUBJECT - TOOL ENGINEERING (2152507)

(1) Students are instructed to answer the questions as mentioned in the table.
(2) Students are instructed to submit the assignment to **Prof.P.H.Solanki** on or before **11/08/2018.**

Sr. No.	Topic	Questions	Total
1	1 - Introduction	1,4,5,7,10	5
2	2 - Mechanics of Machining	1,2,4,5,7,8,9,10,17,26,27,29,30,31,33,35,39,42,44,55	20
3	3 - Thermal Aspects of Machining	1,2,7,8,10,11,13,21	8
4	4- Design of Single Point Cutting Tools	1,3,6,7	4
5	5- Design of Multi Point Cutting Tools	1,2,3,4,6,10,11,12,13,16,20,21	12
6	6 - Cutting Tool Materials	1,2,3,5,8,9	6
7	7- Design of Press Tools	1,2,3,4,5,6,7,8,13,15,16,18,19,20,21,23,25,26,29,30,31,33,35,40,45	25
8	8 - Jigs and Fixtures	1,2,3,4,6,10,16,17,18,22,23,24,26,29,31,32,34,35,36,37	20
		TOTAL	100

TOPIC - 1 - INTRODUCTION

Q.1 Define Tool Design. Explain the procedure of Tool Design.
Q.2. Define Tool Design. Explain the procedure of Tool Design.
Q.3. What is Tool Design? Explain the procedure of Tool Design.
Q.4. What is Tool Design? Explain how it is related to Process Planning?
Q.5. What is tool engineering? How it is useful in modern industrial scenario? Explain it with suitable examples.
Q.6. Discuss importance of Tool Design in Process Planning.
Q.7. Discuss the general problems of cutting tool design.
Q.8. Discuss importance of Tool Design in Process Planning.
Q.9. Explain basic procedure of tool design.
Q.10. Which factors are considered for low cost processing in process planning and tool design?

TOPIC - 2 - MECHANICS OF MACHINING

Q.1 Draw the Merchant Circle diagram and state its assumptions.
Q.2 Explain Orthogonal and Oblique cutting system with neat sketch.
Q.3 Derive the equation of shear angle.
Q.4 What are the impacts of different cutting parameters on tool life? .
Q.5 Why tool wear is important in metal cutting? Discuss various types of tool wear.
Q.6 Explain "Merchant force circle" with neat sketch.
Q.7. The following data relate to an orthogonal cutting process: Chip thickness = 0.65mm, Feed = 0.25mm/rev., Rake angle = 15°. Calculate: (i) cutting ratio and chip reduction co-efficient, (ii) shear angle and (iii) the dynamic shear strain involved in the deformation process.
Q.8. Sketch a single point cutting tool and show on it the various tool elements.
Q.9 Discuss the various types of chips produced during metal cutting.
Q.10. In an orthogonal cutting operation, the following data have been observed:

Cutting speed = 0.223 m/s Uncut chip thickness = 0.06 m
Width of cut = 3.83 mm Chip thickness ratio = 0.51
Cutting Force = 363 N Thrust Force = 127 N
Rake Angle = 20^{o}

Determine: Shear angle, friction angle, shear stress along the shear plane, chip velocity, shear strain in chip and the power for the cutting operation.
Q.11. What do you understand by tool life? Explain various variables that play and important role in tool life.
Q.12. Explain the various elements of a single point cutting tool with the help of a neat diagram.
Q.13. Explain the Merchant Circle diagram and state its assumptions.
Q.14. What are the impacts of different cutting parameters on tool life?
Q.15. Differentiate Orthogonal and Oblique cutting system with neat sketch.
Q.16. Describe merchant's circle diagram in detail with a sketch.
Q.17. Differentiate Orthogonal and Oblique cutting with sketch.
Q.18. Explain Taylor's Tool Life equation. Which factors affect it? How it can be improved?
Q.19. Describe types of tool wear with suitable example.
Q.20. Explain how the chips are formed in machining and how are they classified?
Q.21. What do you understand by tool life? Explain various variables that play an important role in tool life.
Q.22. Draw the Merchant Circle diagram and state its assumptions.
Q.23. Differentiate Orthogonal and Oblique cutting system with neat sketch.
Q.24. Differentiate between orthogonal and oblique metal cutting operations.
Q.25. Draw the Merchant circle diagram and state its assumption.
Q.26. Describe type of cutting tool wear and its causes.
Q.27. Discuss various types of chips produced during metal cutting.
Q.28. Discuss various types of Tool wear.
Q.29. Differentiate between "ASA" and "ORS" system to designate the tool shape.
Q.30. What is a chip breaker? Discuss various types of chip breakers and explain how does a chip breaker break up a chip?
Q.31. Explain Mechanics of Machining. Explain the heat and friction generation in machining. Classify chips and explain chip formation process.
Q.32. What is the usefulness of Merchant Circle Diagram for force and velocity relationship in machining? How it is prepared? Explain with neat sketch.
Q.33. Define tool geometry and its elements. Explain each element of it with its effect on machining. What happens if the value is changed of each element?
Q.34. Define tool life. How tool life of a tool can be improved? What are the causes of wear? What precautions can be taken to reduce wear?
Q.35. Define and explain various cutting parameters and its effects on machining. What happens if a parameter value id changed?
Q.36. Explain Tool Signature as per ASA system.
Q.37. What is Tool Life and State the Factors effectin tool life.
Q.38. Explain Merchant Circle Diagram with neat sketch and state its assumptions.

Q.39. Explain Cutting Ratio.
Q.40. State the differences between Orthogonal and Oblique Cutting.
Q.41. State and Explain the various angles of Single Point Cutting Tool and its significance with neat sketch.
Q.42. Write a short note on Chip Breakers.
Q.43. Discuss various types of Tool wears.
Q.44. With the help of a neat sketch, discuss the principal surfaces & planes in metal cutting.
Q.45. Explain the various elements of a single-point cutting tool with the help of a neat diagram.
Q.46. Differentiate between Orthogonal & Oblique cutting.
Q.47. Discuss the various types of chip breakers.
Q.48. Explain cutting ratio.
Q.49. Explain merchant circle diagram with neat sketch and state its assumption.
Q.50. Explain the mechanism of chip formation and discuss the types of chips with neat sketch.
Q.51. Discuss the two methods of metal cutting.
Q.52. Explain Merchant Force Circle.
Q.53. Explain Tool Wear and Tool Life.
Q.54. Explain the Mechanism of Chip Formation.
Q.55. Explain importance of various Tool Angles.
Q.56. Explain tool geometry of Single Point Cutting Tool.

TOPIC - 3 - THERMAL ASPECTS OF MACHINING

Q. 1 Write sources of heat generation in machining and its effects.
Q.2. Describe the properties of coolants. Explain different types of coolants with their applications.
Q.3 Discuss various types of cutting fluids along with its specific applications.
Q.4. Describe the properties of coolants. Explain different types of coolants with their applications.
Q.5. Write sources of heat generation in machining and its effects.
Q.6. Describe the properties of coolants. Explain different types of coolants. with their applications.
Q.7. Describe sources of heat generation, its causes, its effect and its remedies.
Q.8. Describe importance of cutting fluids. Suggest various types of cutting fluids with its specific application.
Q.9. Write sources of heat generation in machining and its effects.
Q.10. Discuss function of cutting fluid and it's types.
Q.11. Explain any one temperature measurement techniques.
Q.12. Discuss various types of Cutting fluids with their related functions, characteristics and applications.
Q.13. What is the function of cutting fluid in machining? Explain types of cutting fluid with their characteristic, working and applications.
Q.14. What is Cutting Fluid and Mention its essential properties.
Q.15. List & explain types of cutting fluids.
Q.16. State functions of cutting fluids.
Q.17. What are the different sources and areas of heat generation during metal cutting? Explain.
Q.18. Explain the heat generation in machining with neat sketch.
Q.19. List & explain types of cutting fluids.
Q.20. Explain types of Cutting Fluids and its function.
Q.21. Explain various temperature techniques in machining.

TOPIC - 4 - DESIGN OF SINGLE POINT CUTTING TOOLS

Q.1. For the following tool signature draw the different views of a single point cutting tool $10^{o},5^{o},7^{o},6^{o},-5^{o},5^{o}$,1mm.
Q.2 Explain the various elements of a single point cutting tool with the help of a neat diagram.
Q.3 Discuss the design factors to be kept in mind when designing the cutting elements of a tool.

Q.4. Describe tool geometry of a single point cutting tool.
Q.5. Sketch a single point cutting tool and show on it the various tool elements and tool angles.
Q.6. For the following tool signature draw the different views of a single point cutting tool. 15º, 4º, 8º, 4º, 5º, 4º, 2 mms.
Q.7. Define a single point cutting tool. Explain various methods of manufacturing cutting single point cutting tool. Which method is better for a specific operation?

TOPIC - 5 - DESIGN OF MULTIPOINT CUTTING TOOLS

Q.1. Explain geometry of different multipoint cutting tools.
Q.2. Discuss the following design features of a milling cutter.
(1) Power required for milling (2) Number of teeth.(3) Size of cutter.
Q.3 Discuss the following design feature of a milling cutter:
(1) Size of Cutter (2) Tool Angles (3) Flutes (4) Number of Teeth (5) Power required for Milling.
Q.4. Draw a neat sketch of twist drill and state its following elements.(1) Helix Angle (2) Lip Relief Angle (3) Margin (4) Chiesel Edge.
Q.5. Explain geometry of different multipoint cutting tools.
Q.6. Design and draw a broach tool.
Q.7. Design and draw a drill.
Q.8. Explain geometry of different multipoint cutting tools.
Q.9. Draw a neat sketch of twist drill and state its following elements. i) Helix angle, ii) Lip relief angle, iii) Margin, iv) Chiesel edge.
Q.10. Define following terms. (10 Coated Tipped Tools (2) Boring tools (3) Circular form tools (4) Solid tools.
Q.11. Discuss following design features of a milling cutter:
(i) Size of cutter,
(ii) Tool angle,
(iii) Width of Land,
(iv) Number of teeth,
(v) Power requirements for milling,
(vi) Flutes
Q.12. Explain standard multipoint tools and tool holders. Explain their requirements in modern tool engineering. How they are designed for automates?
Q.13.Explain principles work holders. Explain working of common work holders in tool engineering.
Q.14. Explain various multipoint cutting tools with their features, working and applications.
Q.15. Explain the Nomenclature of Twist Drill with Neat Sketch.
Q.16. Discuss the following design features of a broach: (i) Rake & relief angles, (ii) Depth of cut per tooth, (iii) width of land, (iv) depth of cutting tooth.
Q.17. Explain nomenclature of twist drill with neat sketches.
Q.18. Define the broach and Discuss following term with reference to broach :- (I) Rake & relief angles, (II) Depth of cut per tooth, (III) width of land, (IV) depth of cutting tooth.
Q.19. Describe Drills with figure.
Q.20. Explain types of Reamers.
Q.21. Explain Milling Cutters.

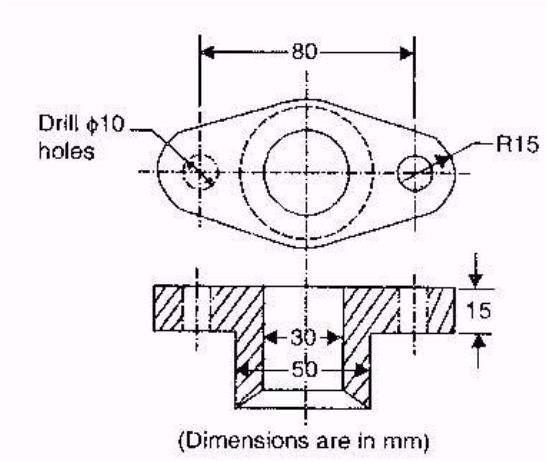
TOPIC - 6 - CUTTING TOOL MATERIALS

Q.1. Explain the types of cutting tool materials, their selection and applications.
Q.2. List advanced cutting tool materials and discuss any two with their advantages, limitations and specific applications.
Q.3. Write name of advanced cutting tool materials and discuss any two with their advantages, disadvantage and applications.
Q.4. Describe various cutting tool materials.
Q.5. List and explain the requirements of Cutting tool material.
Q.6. Describe types of cutting tool materials and factor for their selection.
Q.7. Write a short note on advanced cutting tool materials.

Q.8. Mention the characteristics that a cutting tool material must possesses.
Q,9. How will you select cutting tool material? Explain.
Q.10. List types of cutting tool materials & explain any one.
Q.11. List types of cutting tool materials & explain any one.
Q.12. Explain the characteristics that cutting tool materials possess.
Q.13. Write the criteria for cutting tool material selection.
Q.14. Explain Types of Cutting tool material its selection and application.

TOPIC - 7 - DESIGN OF PRESS TOOLS

Q.1 Explain the Press working terminology with neat sketch.
Q.2 Classify the press working dies. Explain any one of them.
Q.3 What are the various types of strippers? Explain their functions with the help of suitable sketches.
Q.4 Design and draw punch and die assembly for the component as shown in figure. Take shear stress for the material as 400 N/mm^2 .



Q. 5 Discuss design features of form tools.
Q.6 What is meant by 'Clearance'? What are the effects of inadequate clearance and excessive clearance upon die-cut metals?
Q.7. Differentiate between (1) Cutting Die and Forming Die (2) Blanking Die and Piercing Die (3) Combination Die and Compound Die.
Q.8. What are the various ways in which presses can be classified?
Q.9. Define the terms used with press working

i) Bolster Plate ii) Die block iii) Punch Plate iv) Shut height
v) Die vi) Pitman vii) Stripper.

Q.10. Explain the Press working terminology with neat sketch.
Q.11. Give the name of press working dies. Explain any one of them.
Q.12. What are the various types of strippers? Explain their functions with the help of suitable sketches
Q.13. Compare simple, compound and progressive dies.
Q.14. What are the various ways in which presses can be classified?
Q.15. Draw a neat diagram of Die and Punch assembly.
Q.16. Define following terms.(1) Centre of Pressure (2) Strap Strip Layout (3) Piercing and Blanking Operation.
Q.17. Differentiate between compact and progressive dies.
Q.18. Explain in brief various types of press operations.
Q.19. The symmetrical cup work piece shown in figure (i), is to be made from cold rolled steel 0.8mm thick. Make the necessary calculations for designing the drawing die for this part.
Q.20. Design and draw die and punch assembly for the component as shown in the figure (ii). Take shear stress as 400 N/mm^2, also calculate centre of pressure, draw strip layout and find percentage utilization.

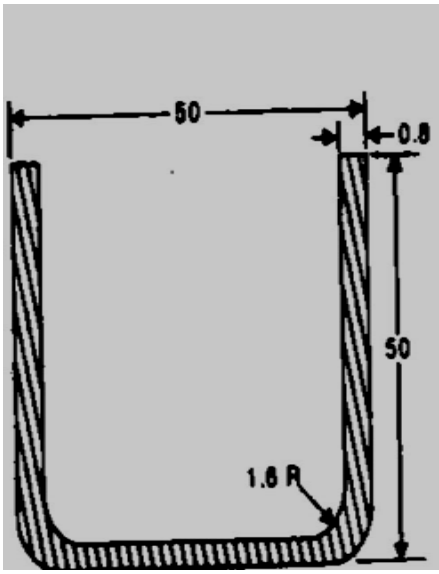


Fig.(i) ,Q.19

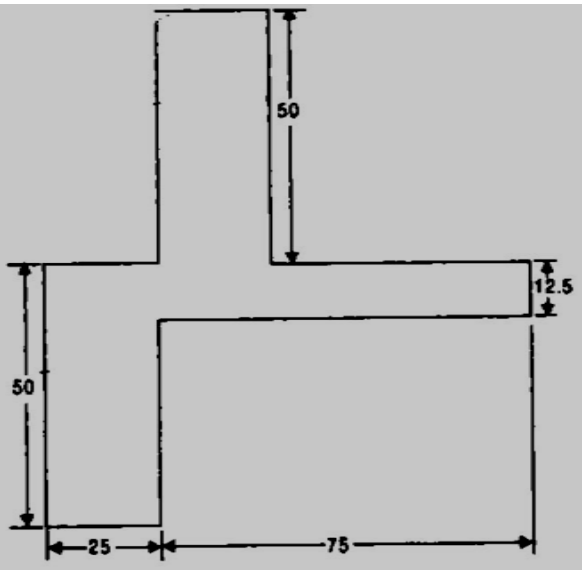
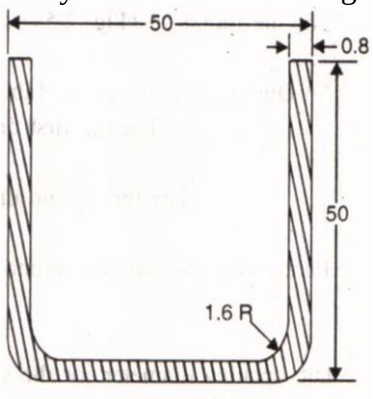


Fig.(ii). Q.20

Q.21. Explain centre of Pressure in press tools. How a compound die is designed? What calculations are carried out for designinf press die?
Q.22. Differentiate Simple, Compound and progressive dies in press working. How progressive die is designed?
Q.23. Explain Simple Cutting Die with neat sketch.
Q.24. Explain the Term Centre of Pressure with appropriate diagram.
Q.25. Explain Fool Proofing with neat sketch.
Q.26. Write a short note on Bending, with neat sketch.
Q.27. Explain Progressive Die ,with neat sketch.
Q.28. Explain Progressive Die with neat sketch.
Q.29. Differentiate between Mechanical and Hydraulic Press.
Q.30. Explain how Dies are classified?
Q.31. Discuss methods of reducing cutting forces in Press Operation.
Q.32. The symmetrical-cup work piece shown in figure (1) is to be made from steel 0.8 mm thick. Make the necessary calculations for designing the drawing die for this part.



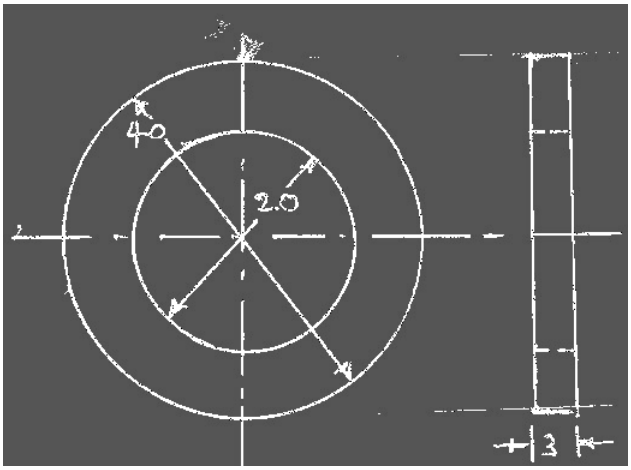
All Dimensions are in mm

Q.33. What is strip layout? Discuss with neat sketch.
Q.34. Explain how to apply clearance in Punch & Die with neat sketches.
Q.35. Discuss methods of reducing cutting forces in Press Operation.
Q.36. What is strip layout? Discuss with neat sketch.
Q.37. Explain fool proofing with neat sketch.
Q.38. Define press tool and explain press tool terminology with neat sketch.
Q.39. Difference between mechanical and hydraulic press tool.
Q.40. Explain different method of mounting punches and dies with neat sketches.
Q.41. Explain center of pressure with suitable example.
Q.42. Discuss methods of reducing cutting forces in Press Operation.
Q.43. What is strip layout? Discuss with neat sketch.
Q.44. State effect of Clearances.

Q.45. Explain Bend Allowance.
Q.46. Explain types of Dies.
Q.47. Explain Press Working Terminology with figure.

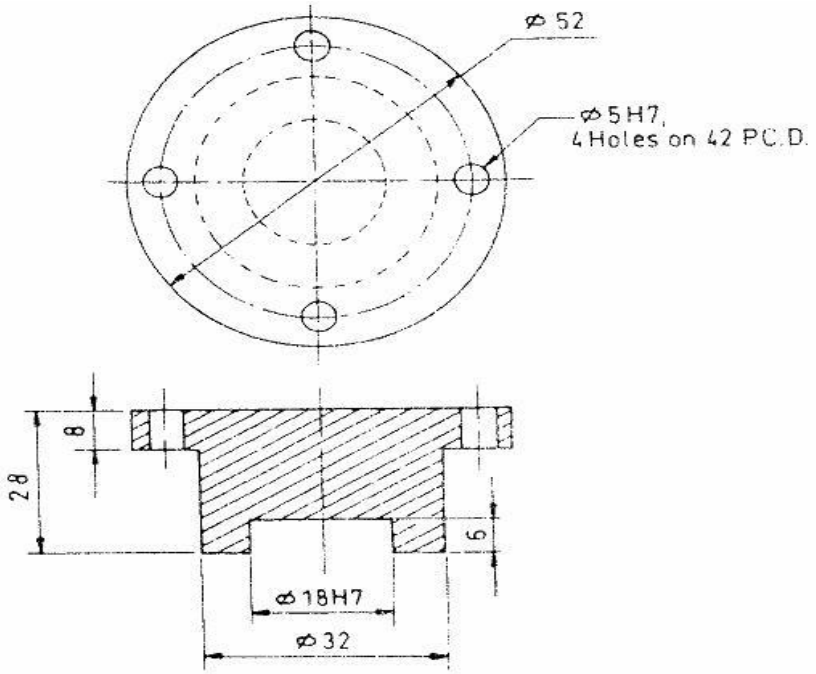
TOPIC -8 - JIGS AND FIXTURE

Q.1 Explain the principle of location. Or “Six point location” Or “3-2-1” principle.
Q.2 Explain the various types of clamping devices with neat sketch.
Q.3 What are the various location devices? Explain these with the aid of suitable sketches.
Q.4. Design and draw a drilling jig to drill the holes in the component shown in figure.



All Dimensions are in mm.

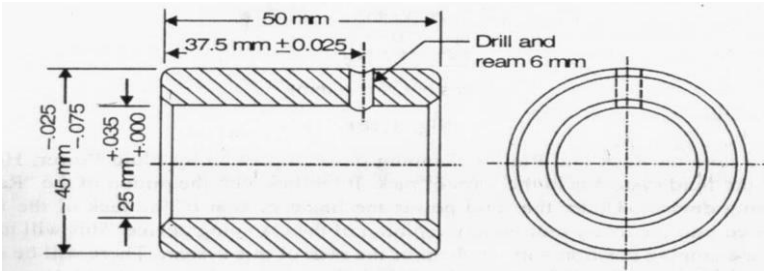
Q.5 What is the Six-point location principle? Explain it with the help of suitable sketches. and tool angles.
Q.6 Design and draw drilling jig for drilling the holes in the component shown in figure.



All Dimensions are in mm

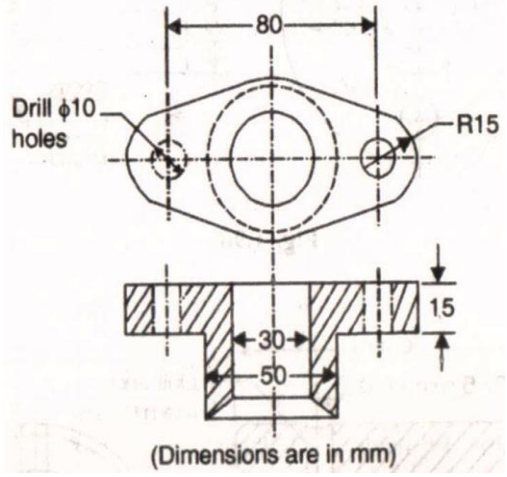
Q.7 Explain the various types of clamping devices with neat sketch.
Q.8. Explain the principle of location. Or “3-2-1” principle.
Q.9. What are the various location devices? Explain these with the aid of suitable sketches.
Q.10. Classify various types of jigs.
Q.11. Classify various types of clamping devices and locating devices.
Q.12. Explain the principle of location. Or “3-2-1” principle.

Q.13. What are the various location devices? Explain these with the aid of suitable sketches.
Q.14. Explain the various types of clamping devices with neat sketch.
Q.15. Explain"3-2-1" principle of location.
Q.16. Draw and explain (i) Latch type clamp (ii) Quick action hand nut.
Q.17. Explain different drill jig bushes.
Q.18. Design and draw fixture of welding for suitable component.
Q.19. What are various Location Devices? Explain these with the aid of suitable sketches.
Q.20. What is six point location principal? Explain it with the help of suitable sketches.
Q.21. Name various types of Jigs and explain any three with the help of suitable sketches.
Q.22. What are the requirements of jigs? Design a suitable jig for a drilling operation in a steel square plate at four corners and in centre?
Q.23. Which types of locaters and clamps used in latest jigs and fixtures? Explain each in detail with neat sketch.
Q.24. What are the essential features of jigs and fixtures?
Q.25. Explain 6-point location principle.
Q.26. Write a short note on Milling Fixture, with appropriate diagram.
Q.27. Explain different types of Clamping Devices with neat sketches.
Q.28. State design principles for location purpose.
Q.29. Design & draw drilling Jig for drilling hole in the component shown in figure .



All Dimensions are in mm

Q.30. Explain 3-2-1 Principle of Location with neat sketch.
Q.31. Design & draw drilling Jig for drilling holes in the component shown in figure.



Q.32. Explain use & operation of the "C clamp".
Q.33. Write the essential requirement of jigs and fixture.
Q.34. State design principles for location purpose.
Q.35. Explain classification of Milling Fixtures.
Q.36. Explain principle of Location and Clamping.
Q.37. What are the standardization required in Jigs and Fixtures?
Q.38. Explain types of Drill Bushes.
Q.39. Explain essential requirements of Jigs and Fixtures.

THE END

SHANTILAL SHAH ENGINEERING COLLEGE, BHAVNAGAR

Production Engineering Department

LECTURE PLAN & LAB/TUTORIAL PLAN

Course Code :	2152508	Year/Semester :	BE 3rd Year/ 5th Semester
Course Name :	Design of Machine Elements	Academic Year :	2018-19/ODD
L –T- P :	4-2-0	Credit :	6
Course Detail :	Theory and Tutorial	Term Start Date :	18/06/2018
Course Coordinator :	P. V. Sartanpara	Term End Date :	17/10/2018
Team of Instructors :	--	Class Test 1 :	--
Faculty Name:	Prof P V Sartanpara & Prof M J Vora	Class Test 2 :	--
		Mid Term Exam :	--

SHANTILAL SHAH ENGINEERING COLLEGE BHAVNAGAR

Department of Production Engineering

Lesson Plan

Academic Year : 2018-19	**Sem. : 5th Sem**
Name of Teacher : Prof M J Vora & Prof P V Sartanpara	**Name of Department : Production Engineering**
Subject : Design of Machine Elements	**Hrs./Week : 4**
Theory/Tutorial/Practical : Tutorial	**Days :**

Sr. No.	Name of Unit/Topics	Hrs. Allotted	Planned Date	Actual Date	Teaching Aid Code	Remarks
1.	Design of components subjected to variable stress.	3	02/07/2018			
2.	Design of brakes and clutches.	5	09/07/2018			
3.	Design of belts, pulleys and flywheel.	5	23/07/2018			
4.	Design of different types of Gears.	8	06/08/2018			
5.	Design of springs.	5	10/09/2018			
6.	Design of thick and thin cylinders.	3	24/09/2018			
7.	Design of power screws.	3	08/10/2018			

Teaching Aid Code:	
1	O.H.P
2	L.C.D PROJECTER
3	MODEL
4	CHART
5	OTHER (VIDEO)

Sign of Teacher : _____

Sign of H.O.D : _____

**** Remark column should cover any slippages and remedial action planned***

SHANTILAL SHAH ENGINEERING COLLEGE, BHAVNAGAR

Production Engineering Department

LECTURE PLAN & LAB/TUTORIAL PLAN

Course Code :	2152508	Year/Semester :	BE 3rd Year/ 5th Semester
Course Name :	Design of Machine Element	Academic Year :	2018-19/ ODD
L –T- P :	4-2-0	Credit :	6
Course Detail :	Theory and Tutorial	Term Start Date :	18/06/2018
Course Coordinator :	P V Sartanpara	Term End Date :	17/10/2018
Team of Instructors :	--	Class Test 1 :	--
Faculty Name:	Prof P V Sartanpara & Prof M J Vora	Class Test 2 :	--
		Mid Term Exam :	--

SHANTILAL SHAH ENGINEERING COLLEGE, BHAVNAGAR
Department of Production Engineering

Lesson Plan

Academic Year : 2018-19 Odd Sem			**Sem. : 5th Sem**			
Name of Teacher : Prof P V Sartanpara & Prof M J Vora			**Name of Department : Production Engineering**			
Subject : Design of Machine Elelment			**Hrs./Week : 4**			
Theory/Tutorial : Theory			**Days : Monday, Tuesday & Wednesday**			
Sr. No.	**Name of Unit/Topics**	**Hrs. Allotted**	**Planned Date**	**Actual Date**	**Teaching Aid Code**	**Faculty**
1	**Chapter 1: Variable Stresses in Machine Parts**	**06**				
A	Introduction, Completely reversed or cyclic stresses, Fatigue and endurance limit, Effect of loading on endurance limit- load factor	1	20/06/2018			Prof PVS
B	Effect of surface finish on endurance limit – surface finish factor, Effect of size on endurance limit-size factor, Effect of miscellaneous factors on endurance limit	1	20/06/2018			Prof PVS
C	Relation between endurance limit and ultimate tensile strength, Factors to be considered while designing machine parts to avoid fatigue failure	1	27/06/2018			Prof PVS
D	Stress concentration factor for various machine members, Fatigue stress concentration factor	1	27/06/2018			Prof PVS
E	Notch sensitivity, Combine steady and variable stresses. Failure theories: a) Gerber method of combination of stresses	1	04/07/2018			Prof PVS
F	Goodman method of combination of stresses and Soderberg method of combination of stresses	1	04/07/2018			Prof PVS
2	**Chapter 2: Design of Clutches and Brakes**	**10**				
A	Introduction, Types of clutches	1	11/07/2018			Prof PVS
B	Material, Design of a disc or plate clutch	1	11/07/2018			Prof PVS
C	Multiple disc clutch, Cone clutch	1	18/07/2018			Prof PVS
D	Centrifugal clutch, Introduction to Brake	1	18/07/2018			Prof PVS
E	Design of Single blocks or shoe brake	1	25/07/2018			Prof PVS
F	Pivoted block or shoe brake	1	25/07/2018			Prof PVS
G	Double blocks or shoe brake	1	01/08/2018			Prof PVS
H	Simple band brake, Differential band brake	1	01/08/2018			Prof PVS
I	Band and block brake	1	08/08/2018			Prof PVS
J	Internal expanding brake	1	08/08/2018			Prof PVS
3	**Chapter 3: Design of Belts & Pulleys,**	**08**				

	Flywheel					
A	**Chapter 3:** Introduction to Belts and Pulleys	1	29/08/2018			Prof PVS
B	Design of flat belt	1	29/08/2018			Prof PVS
C	Design of pulley for flat belt	1	05/09/2018			Prof PVS
D	Design of V-belt and its Pulley	1	05/09/2018			Prof PVS
E	Design of pulley for V-belt	1	12/09/2018			Prof PVS
F	Design of Flywheel Arms	1	12/09/2018			Prof PVS
G	Design of Shaft	1	19/09/2018			Prof PVS
H	Design of Hub, and Key, Construction of Flywheel	1	19/09/2018			Prof PVS
I	**Surprise Test**	1				Prof PVS
J	Design of Flat key, Kennedy key and Splines	1	26/09/2018			Prof PVS
K	Design of rigid coupling	1	26/09/2018			Prof PVS
L	Design of flexible couplings	1	03/10/2018			Prof PVS
4	**Chapter 4: Design of Gears**	**12**				
A	Spur Gears: Forms of teeth, Cycloid teeth, Involutes teeth	1	18/06/2018			Prof MJV
B	Systems of gear teeth, Standard proportions of gear system	1	19/06/2018			Prof MJV
C	Gear materials, Design consideration for gear drive	1	25/06/2018			Prof MJV
D	Causes of gear tooth failure, Design procedure for spur gears	1	26/06/2018			Prof MJV
E	Helical Gears: Introduction, Terms used in helical gear	1	02/07/2018			Prof MJV
F	Design procedure for helical gears	1	03/07/2018			Prof MJV
G	Bevel Gears: Introduction, Terms used in bevel gears	1	09/07/2018			Prof MJV
H	Proportions for bevel gears, Design of bevel gear.	1	10/07/2018			Prof MJV
I	Worm Gears: Introduction, Types of worms	1	16/07/2018			Prof MJV
J	Types of worm gears. , Terms used in worm gearing	1	17/07/2018			Prof MJV
K	Proportions for worms, Proportions for worm gears	1	23/07/2018			Prof MJV
L	Design of worm & worm gearing.	1	24/07/2018			Prof MJV
5	**Chapter 5 : Springs**	**10**				
A	Introduction, Types of Springs	1	30/07/2018			Prof MJV
B	Material for Helical springs, Terms used in Compression Springs	1	31/07/2018			Prof MJV
C	End Connections for helical spring, Stresses in helical spring of circular wire	1	06/08/2018			Prof MJV

D	Deflection of helical spring of circular wire, Energy stored in helical spring of circular wire	1	07/08/2018			Prof MJV
E	Stress and deflection in helical spring of non-circular wire	1	13/08/2018			Prof MJV
F	Helical spring subjected to fatigue loading	1	14/08/2018			Prof MJV
G	Spring, leaf spring	1	20/08/2018			Prof MJV
H	Construction of leaf spring	1	21/08/2018			Prof MJV
I	Equalized stresses in spring leaves, length of leaf spring leaves	1	27/08/2018			Prof MJV
J	Standard sizes of automobile suspension spring	1	28/08/2018			Prof MJV
6	**Chapter 6 : Thin and Thick Cylinders**	**10**				
A	Design of thick & thin cylinders	1	04/09/2018			Prof MJV
B	Design of pipes, tubes	1	10/09/2018			Prof MJV
C	Design of cylinder covers	1	11/09/2018			Prof MJV
D	Design of covers bolts	1	17/09/2018			Prof MJV
E	Initial tightening of bolts	1	18/09/2018			Prof MJV
F	Design of pressure vessels according to different standard of design	1	24/09/2018			Prof MJV
G	Design considerations in pressure vessels	1	25/09/2018			Prof MJV
H	Design of pipes	1	01/10/2018			Prof MJV
I	Hydraulic press	1	08/10/2018			Prof MJV
J	Hydraulic intensifier	1	09/10/2018			Prof MJV
7	**Chapter 7 : Power Screws**	**08**				
A	Types of threads	1	03/10/2018			Prof PVS
B	Design of screw with different types of threads used in practices	1	10/10/2018			Prof PVS
C	Design of nuts	1	15/10/2018			Prof PVS
D	Design of C clamp	1	16/10/2018			Prof PVS
E	Screw jack	1	17/10/2018			Prof PVS
F	Design of toggle jack	1	17/10/2018			Prof PVS
G	Design of coupler	1	17/10/2018			Prof PVS

Teaching Aid Code:	
1	O.H.P
2	L.C.D PROJECTER
3	MODEL
4	CHART
5	OTHER (VIDEO)

Sign of Teacher : _____

Sign of H.O.D : _____

SHANTILAL SHAH ENGINEERING COLLEGE

Department of Production Engineering

B.E.SEMESTER – V (Production)

Tool Engineering (2152507)

Lesson Planning

Sr. No	Topic	No. of Hours
1	To study about tool design, its procedure and process planning.	2
2	To study about mechanics of machining.	2
3	To study about thermal aspects in machining.	2
4	To understand about the design of single point cutting tool.	2
5	To understand about design of multipoint tools.	2
6	To study types of cutting tool materials.	2
7	To design press tools.	2
8	To study jigs and fixtures.	2

(Staff In-Charge) **(Head of Department)**

No of Experiments 08

SHANTILAL SHAH ENGINEERING COLLEGE

Department of Mechanical Engineering

LAB/TUTORIAL PLAN

Course Code :	2152506	Year/Semester :	BE III Year/ 5th Semester
Course Name :	Foundry Technology	Academic Year :	2017-18/ EVEN
L –T- P :	4-0-2	Credit :	5
Course Detail :	Theory and Practical	Term Start Date :	18/06/2018
Course Coordinator :	Prof.D.J.Desai	Term End Date :	22/10/2018
Team of Instructors :	-	Class Test 1 :	--
Faculty Name:	Prof.Dr.A.V.Gohil	Class Test 2 :	--
	Prof.D.J.Desai	Mid Term Exam :	--

SHANTILAL SHAH ENGINEERING COLLEGE BHAVNAGAR
Department of Mechanical Engineering

Lesson Plan (practical)

Academic Year : 2018 Odd Term	**Sem. : 5th sem**
Name of Teacher : Prof.D.J.Desai	**Name of Department : Production Engineering**
Subject : Foundry Technology	**Hrs./Week : 2**
Theory/Tutorial/Practical : Practical	**Days :**

Sr. No.	Name of Unit/Topics	Hrs. Allotted	Planned Date	Actual Date	Teaching Aid Code	Remarks
1.	To Study about Pattern and Pattern Making.	2	18-06-18		**2**	
2.	To Study about Mould and Mould Making	6	25-6-18 02-07-18 09-07-18		2	
3.	To Study about Melting Furnaces	2	16-07-18		2	
4.	To Study about Gating Systems	4	23-07-18 30-07-18		2	
5.	To Study about Finishing Processes	4	06-08-18 13-08-18		2	
6.	To Study about Advance Casting Processes	4	20-08-18 27-08-18		2	
7.	To Study about Inspection and Testing of Casting	2	10-09-18		2	
8.	To Study about Modernization and Mechanization of Foundry	4	24-09-18 01-10-18		2	
9.	Foundry Industries Industrial Visit with student's individual report	2	08-10-18		2	

Teaching Aid Code:	
1	O.H.P
2	L.C.D PROJECTER
3	MODEL
4	CHART
5	OTHER (VIDEO)

Sign of Teacher : _____

Sign of H.O.D : _____

**** Remark column should cover any slippages and remedial action planned***

List of Experiments :

1. To Study about Pattern and Pattern Making.
2. To Study about Mould and Mould Making
3. To Study about Melting Furnaces
4. To Study about Gating Systems
5. To Study about Finishing Processes
6. To Study about Advance Casting Processes
7. To Study about Inspection and Testing of Casting
8. To Study about Modernization and Mechanization of Foundry
9. Foundry Industries Industrial Visit with student's individual report

SHANTILAL SHAH ENGINEERING COLLEGE

Department of Production Engineering

LECTURE PLAN

Course Code :	2152506	Year/Semester :	BE III Year/ 5th Semester
Course Name :	Foundry Technology	Academic Year :	2017-18/ EVEN
L –T- P :	4-0-2	Credit :	5
Course Detail :	Theory and Practical	Term Start Date :	18/06/2018
Course Coordinator :	Prof.D.J.Desai	Term End Date :	22/10/2018
Team of Instructors :	-	Class Test 1 :	--
Faculty Name:	Prof.Dr.A.V.Gohil	Class Test 2 :	--
	Prof.D.J.Desai	Mid Term Exam :	--

SHANTILAL SHAH ENGINEERING COLLEGE, BHAVNAGAR
Department of Production Engineering

Lesson Plan (A-division)

Academic Year : 2017-18 First Term			**Sem. : 4th sem**			
Name of Teacher : Prof.D.J.Desai			**Name of Department : Production Engineering**			
Subject : Theory Of Machines			**Hrs./Week : 3**			
Theory/Tutorial : Theory			**Days :Mon,Tue.Fri.**			
Sr. No.	**Name of Unit/Topics**	**Hrs. Allotted**	**Planned Date**	**Actual Date**	**Teaching Aid Code**	**Remarks**
1	**Unit 1: Introduction and types of foundries:**	**2**				
A	Basic steps in the process of metal casting	1	20-06-18		OHP	
B	comparison of casting with metal joining	1	22-06-18		OHP	
2	**Unit 2: Pattern and Pattern Making:**	**6**				
A	Patterns: Materials,	1	27-06-18		OHP	
B	Types and design of Patterns,	2	29-06-18 04-07-18		OHP	
C	Pattern allowances	2	06-07-18 11-07-18		OHP	
D	Pattern colors	1	13-07-18		OHP	
3	**Unit 3 : Mould and Mould Making:**	**12**				
A	Introduction, Moulding Sand – Types and Properties	2	18-07-18 20-07-18		OHP	
B	Moulding Tools and Equipments-Machine Moulding, Moulding Machines and Hand Moulding tools	3	25-07-18 27-07-18 01-08-18		OHP	
C	Function of Core, Types of Cores, Core Prints, Core Venting and Baking, Core Shifting and Chaplets	3	03-08-18		OHP	
D	Moulding Processes- Bench Moulding, Floor Moulding, Pit Moulding, Stack Moulding, Green Sand Moulding, Dry Sand Moulding, Loam Moulding, Core Moulding	4	08-08-18 10-08-18 15-08-18 17-08-18		OHP	
4	**Unit 4: Foundry Furnaces:**	**5**				

A	Types of Foundry Furnaces- Cupola Furnace,	2	22-08-18			
B	Electric Arc Furnace,	2	24-08-18			
C	Induction Furnace.etc	1	29-08-18			

5	**Unit 5: Gating Systems:**	**5**				
A	Gating System- types of Gates and Risers, ,	1	31-08-18		OHP	
B	Gating Ratios and chills,	1	05-09-18		OHP	
C	Riser location & design in actual casting,	1	07-09-18		OHP	
D	Directional Solidification in Casting	1	12-09-18		OHP	
E	Physical Behavior of Metals during Solidification.	1	14-09-18		OHP	
6	**Unit 6: Finishing & Heat Treatment Processes:**	**8**				
A	Various Fettling	2	20-06-18 21-06-18		OHP	
B	Finishing and Heat Treatment of Casting	6	27-06-18 28-06-18 04-07-18 05-07-18 11-07-18 12-07-18		OHP	
7	**Unit 7: Advance Casting Processes:**	**12**				
A	Investment Casting, Centrifugal Casting,	3	18-07-18 19-07-18 25-07-18		OHP	
B	Shell Moulding, Gravity die/ permanent mold casting,	3	26-07-18 01-08-18 02-08-18		OHP	
C	Continuous Casting, pressure die casting, Slush Casting,	3	08-08-18 09-08-18		OHP	

			15-08-18			
D	Non metal Molding /Ceramic Molding.	3	16-08-18 22-08-18 23-08-18		OHP	
8	**Unit 8: Inspection and Testing of Casting:**	**4**				
A	Defects in Casting, its causes and remedies,	2	29-08-18			
B	Inspection and Nondestructive Testing of Casting	2	30-08-18			
9	**Modernization and Mechanization of Foundry:**					
A	Material Handling, Pollution Control in Foundry,	1	05-09-18			
B	Application of Computers in Casting Processes.	1	06-09-18			

Teaching Aid Code:		
1	O.H.P	
2	L.C.D PROJECTER	Sign of Teacher : _____
3	MODEL	
4	CHART	
5	OTHER (VIDEO)	Sign of H.O.D : _____
**** Remark column should cover any slippages and remedial action planned***		
LESSON PLANNING, Rev. no. :00		Page no.:__of __

Reference Books:

1. A Text Book of Foundry Technology by O.P. Khanna & M. Lal, Dhanpat Rai.
2. Manufacturing Technology Foundry Forming & Welding by P.N. Rao – TMH.
3. Foundry Technology by P.L. Jain.
4. Production Technology by P.C.Sharma – S Chand.
5. Process and Materials of Manufacture By Lindberg – PHI.
6. Casting Technology by Chakravarty – New Age.
7. Metal Casting by Ravi, PHI.
8. Metal Casting by Ramarao- New Age Publication.
9. Principles of Foundry Technology by R.K.Jain.
10. Principle of Metal Casting by Hein.

SHANTILAL SHAH ENGINEERING COLLEGE

Department of Production Engineering

LECTURE PLAN & LAB/TUTORIAL PLAN

Course Code :	2152506	Year/Semester :	BE III Year/ 5th Semester
Course Name :	Foundry Technology	Academic Year :	2017-18/ EVEN
L –T- P :	4-0-2	Credit :	5
Course Detail :	Theory and Practical	Term Start Date :	18/06/2018
Course Coordinator :	Prof.D.J.Desai	Term End Date :	22/10/2018
Team of Instructors :	-	Class Test 1 :	--
Faculty Name:	Prof.Dr.A.V.Gohil	Class Test 2 :	--
	Prof.D.J.Desai	Mid Term Exam :	--

SHANTILAL SHAH ENGINEERING COLLEGE, BHAVNAGAR
Department of Production Engineering

Lesson Plan (B-division)

Academic Year : 2017-18 First Term			**Sem. : 4th sem**			
Name of Teacher : Prof.D.J.Desai			**Name of Department : Production Engineering**			
Subject : Theory Of Machines			**Hrs./Week : 3**			
Theory/Tutorial : Theory			**Days :Mon,Tue.Fri.**			
Sr. No.	**Name of Unit/Topics**	**Hrs. Allotted**	**Planned Date**	**Actual Date**	**Teaching Aid Code**	**Remarks**
1	**Unit 1: Introduction and types of foundries:**	**2**				
A	Basic steps in the process of metal casting	1	18-06-18		OHP	
B	comparison of casting with metal joining	1	20-06-18		OHP	
2	**Unit 2: Pattern and Pattern Making:**	**6**				
A	Patterns: Materials,	1	25-06-18		OHP	
B	Types and design of Patterns,	2	27-06-18 02-07-18		OHP	
C	Pattern allowances	2	04-07-18 09-07-18		OHP	
D	Pattern colors	1	11-07-18		OHP	
3	**Unit 3 : Mould and Mould Making:**	**12**				
A	Introduction, Moulding Sand – Types and Properties	2	16-07-18 18-07-18		OHP	
B	Moulding Tools and Equipments-Machine Moulding, Moulding Machines and Hand Moulding tools	3	23-07-18 25-07-18 30-07-18		OHP	
C	Function of Core, Types of Cores, Core Prints, Core Venting and Baking, Core Shifting and Chaplets	3	01-08-18 06-08-18 08-08-18		OHP	
D	Moulding Processes- Bench Moulding, Floor Moulding, Pit Moulding, Stack Moulding, Green Sand Moulding, Dry Sand Moulding, Loam Moulding, Core Moulding	4	13-08-18 15-08-18 20-08-18 22-08-18		OHP	

4	**Unit 4: Foundry Furnaces:**	**5**				
A	Types of Foundry Furnaces- Cupola Furnace,	2	27-08-18 29-08-18			
B	Electric Arc Furnace,	2	03-09-18 05-09-18			
C	Induction Furnace.etc	1	10-09-18			

5	**Unit 5: Gating Systems:**	**5**				
A	Gating System- types of Gates and Risers, ,	1	12-09-18		OHP	
B	Gating Ratios and chills,	1	17-09-18		OHP	
C	Riser location & design in actual casting,	1	19-09-18		OHP	
D	Directional Solidification in Casting	1	24-09-18		OHP	
E	Physical Behavior of Metals during Solidification.	1	26-09-18		OHP	
6	**Unit 6: Finishing & Heat Treatment Processes:**	**8**				
A	Various Fettling	2	18-06-18 19-06-18		OHP	
B	Finishing and Heat Treatment of Casting	6	25-06-18 26-06-18 02-07-18 03-07-18 09-07-18 10-07-18		OHP	
7	**Unit 7: Advance Casting Processes:**	**12**				
A	Investment Casting, Centrifugal Casting,	3	16-07-18 17-07-18 23-07-18		OHP	
B	Shell Moulding, Gravity die/ permanent mold casting,	3	24-07-18 30-07-18		OHP	

			31-07-18			
C	Continuous Casting, pressure die casting, Slush Casting,	3	06-08-18 07-08-18 13-08-18		OHP	
D	Non metal Molding /Ceramic Molding.	3	14-08-18 20-08-18 21-08-18		OHP	
8	**Unit 8: Inspection and Testing of Casting:**	**4**				
A	Defects in Casting, its causes and remedies,	2	27-08-18			
B	Inspection and Nondestructive Testing of Casting	2	28-08-18			
9	**Modernization and Mechanization of Foundry:**					
A	Material Handling, Pollution Control in Foundry,	1	03-09-18			
B	Application of Computers in Casting Processes.	1	04-09-18			

Teaching Aid Code:	
1	O.H.P
2	L.C.D PROJECTER
3	MODEL
4	CHART
5	OTHER (VIDEO)

Sign of Teacher : _____

Sign of H.O.D : _____

**** Remark column should cover any slippages and remedial action planned***

Reference Books:

1. A Text Book of Foundry Technology by O.P. Khanna & M. Lal, Dhanpat Rai.
2. Manufacturing Technology Foundry Forming & Welding by P.N. Rao – TMH.
3. Foundry Technology by P.L. Jain.
4. Production Technology by P.C.Sharma – S Chand.
5. Process and Materials of Manufacture By Lindberg – PHI.
6. Casting Technology by Chakravarty – New Age.
7. Metal Casting by Ravi, PHI.
8. Metal Casting by Ramarao- New Age Publication.
9. Principles of Foundry Technology by R.K.Jain.
10. Principle of Metal Casting by Hein.

Shantilal Shah Engineering College, Bhavnagar
Production Engineering Department

LECTURE PLAN & LAB/TUTORIAL PLAN

Course Code :	2150003	Year/Semester :	BE III Year/ 5th Semester , Div. : A
Course Name :	Disaster management	Academic Year :	2018 odd term
L –T- P :	3-0-0	Credit :	3
Course Detail :	Theory	Term Start Date :	18/06/2018
Course Coordinator :	Prof. M. V. Gohil	Term End Date :	17/10/2018
Team of Instructors :	-	Class Test 1 :	
Faculty Name:	Prof. P.H. Solanki , Prof. B. J. Chudasama	Class Test 2 :	
	Prof. M.V. Gohil	Mid Term Exam :	

Shantilal Shah Engineering College, Bhavnagar
Production Engineering Department

Lesson Plan

Academic Year : 2018 odd Term	**Sem.: 5th sem, Div. A**
Name of Teacher : Prof.P.H.Solanki, Prof. T.S.Vala, and Prof.M.V.Gohil	**Name of Department :** Production Engineering
Subject : DISASTER MANAGEMENT [2150003]	**Hrs./Week : 3**
Theory/Tutorial : Theory	**Days:** MON, THU.

Sr. No	Topic	No. of Hours	Faculty	Planned Date	Actual Date	Teaching Aid Code	Remarks
1	**Unit 1: Understanding Disasters**	**4**					
A	Understanding the Concepts and definitions of Disaster	1	TSV	21-06-2018			
B	Hazard, Vulnerability, Risk, Capacity	1	TSV	28-06-2018			
C	Disaster and Development	1	TSV	05-07-2018			
D	Concept of disaster management	1	TSV	12-07-2018			
2	**Unit 2: Types, Trends, Causes, Consequences and Control of Disasters**	**8**					
A	Geological Disasters (earthquakes, landslides, tsunami, mining)	1	MVG	18-06-2018			
B	Hydro-Meteorological Disasters (floods, cyclones, lightning, thunder-storms, hail storms, avalanches, droughts, cold and heat waves)	1	MVG	21-06-2018			
C	Biological Disasters (epidemics, pest attacks, forest fire)	1	MVG	25-06-2018			
D	Technological Disasters (chemical, industrial, radiological, nuclear)	1	MVG	28-06-2018			
E	Man-made Disasters (building collapse, rural and urban fire)	1	MVG	02-07-2018			
F	Man-made Disasters road and rail (accidents, nuclear, radiological, chemicals and biological disasters)	1	MVG	05-07-2018			
G	Global Disaster Trends – Emerging Risks of Disasters	1	MVG	09-07-2018			
H	Climate Change and Urban Disasters	1	MVG	12-07-2018			
I	Test of unit 2	1		16-07-2018			
3	**Unit 3: Disaster Management Cycle and Framework**	**8**					
A	Disaster Management Cycle – Paradigm Shift in Disaster Management	1	TSV	19-07-2018			
B	Pre-Disaster – Risk Assessment and Analysis, Risk Mapping, zonation	1	TSV	26-07-2018			
C	Microzonation, Prevention and Mitigation of Disasters, Early Warning System;	1	TSV	02-08-2018			

	Preparedness, Capacity Development1						
D	Awareness During Disaster , Evacuation – Disaster Communication , Search and Rescue	1	TSV	09-08-2018			
E	Emergency Operation Centre – Incident Command System – Relief and Rehabilitation	1	TSV	16-08-2018			
F	Post-disaster – Damage and Needs Assessment, Restoration of Critical Infrastructure	1	TSV	13-08-2018			
G	Early Recovery – Reconstruction and Redevelopment	1	TSV	23-08-2018			
H	Yokohama Strategy, Hyogo, Framework of Action	1	TSV	30-08-2018			
I	Test of unit 3	1		06-09-2018			
4	**Unit 4 : Disaster Management in India**	**10**					
A	Disaster Profile of India	1	MVG	19-07-2018			
B	Mega Disasters of India	1	MVG	23-07-2018			
C	Mega Disasters of India	1	MVG	26-07-2018			
D	Lessons Learnt Disaster Management Act 2005	1	MVG	30-07-2018			
E	Lessons Learnt Disaster Management Act 2005	1	MVG	06-08-2018			
F	Institutional and Financial Mechanism National Policy on Disaster Management	1	MVG	09-08-2018			
G	National Guidelines and Plans on Disaster Management	1	MVG	13-06-2018			
H	National Guidelines and Plans on Disaster Management	1	MVG	16-08-2018			
I	Role of Government (local, state and national)	1	MVG	20-08-2018			
J	Role of Non-Government and Inter-Governmental Agencies	1	MVG	23-08-2018			
5	**Unit 5: Applications of Science and Technology for Disaster Management & Mitigation**	**12**					
A	Geo-informatics in Disaster Management (RS, GIS, GPS and RS)	1	MVG	27-08-2018			
B	Geo-informatics in Disaster Management (RS, GIS, GPS and RS)	1	MVG	30-08-2018			
D	Disaster Communication System (Early Warning and Its Dissemination)	1	MVG	06-09-2018			
E	Disaster Communication System (Early Warning and Its Dissemination)	1	MVG	10-09-2018			
F	Land Use Planning and Development Regulations	1	MVG	17-09-2018			
G	Land Use Planning and Development	1	MVG	20-09-2018			

	Regulations						
H	Disaster Safe Designs and Constructions	1	MVG	24-09-2018			
I	Disaster Safe Designs and Constructions	1	MVG	27-09-2018			
J	Structural and Non Structural Mitigation of Disasters	1	MVG	01-10-2018			
K	S&T Institutions for Disaster Management in India	1	MVG	04-10-2018			
L	S&T Institutions for Disaster Management in India	1	MVG	08-10-2018			
M	Test of unit 5	1		11-10-2018			
	Total	**42**					

Teaching Aid Code:		Prof. P.H.Solanki Prof. B J Chudasama Prof. M. V. Gohil **Sign of Teacher** **Sign of H.O.D**
1	O.H.P	
2	L.C.D PROJECTER	
3	MODEL	
4	CHART	
5	OTHER (VIDEO)	
**** Remark column should cover any slippages and remedial action planned***		
LESSON PLANNING, Rev. no. :00		Page no.:__of __

Reference books:

1. Coppola D P, 2007. Introduction to International Disaster Management, Elsevier Science (B/H), London.
2. Manual on natural disaster management in India, M C Gupta, NIDM, New Delhi
3. An overview on natural & man-made disasters and their reduction, R K Bhandani, CSIR, New Delhi
4. World Disasters Report, 2009. International Federation of Red Cross and Red Crescent, Switzerland
5. Encyclopedia of disaster management, Vol I, II and IIIL Disaster management policy and administration, S L Goyal, Deep & Deep, New Delhi, 2006
6. Encyclopedia of Disasters – Environmental Catastrophes and Human Tragedies, Vol. 1 & 2,Angus M. Gunn, Greenwood Press, 2008
7. Disasters in India Studies of grim reality, Anu Kapur & others, 2005, 283 pages, Rawat Publishers, Jaipur
8. Management of Natural Disasters in developing countries, H.N. Srivastava & G.D. Gupta, Daya Publishers, Delhi, 2006, 201 pages
9. Natural Disasters, David Alexander, Kluwer Academic London, 1999, 632 pages
10. Disaster Management Act 2005, Publisher by Govt. of India
11. Publications of National Disaster Management Authority (NDMA) on Various Templates and Guidelines for Disaster Management
12. NIDM Publications
13. High Power Committee Report, 2001, J.C. Pant
14. Disaster Mitigation in Asia & Pacific, Asian Development Bank

15. National Disaster Management Policy, 2009, GoI
16. Disaster Preparedness Kit, American Red Cross
17. Bryant Edwards (2005): Natural Hazards, Cambridge University Press, U.K.
18. Carter, W. Nick, 1991: Disaster Management, Asian Development Bank, Manila.
19. Sahni, Pardeep et.al. (eds.) 2002, Disaster Mitigation Experiences and Reflections, Prentice Hall of India, New Delhi.
20. Roy, P.S. (2000): Space Technology for Disaster management: A Remote Sensing & GIS Perspective, Indian Institute of Remote Sensing (NRSA) Dehradun.
21. Sharma, R.K. & Sharma, G. (2005) (ed) Natural Disaster, APH Publishing Corporation, New Delhi.
22. Kasperson, J.X., R.E. Kasperson, and B.L. Turner III (Eds.), 1995, Regions at Risk: Comparisons of Threatened Environments, United Nations University Press, Tokyo
23. Singh Satendra (2003): Disaster Management in the Hills, Concept Publishing Company, New Delhi.
24. Taori, K (2005) Disaster Management through Panchayati Raj, Concept Publishing Company, New Delhi.

Course Outcome:

After learning the course the students should be able to:
(a) Understand disasters, disaster preparedness and mitigation measures
(b) Understand role of IT, remote sensing, GIS and GPS in risk reduction
(c) Understand disaster management acts and guidelines along with role of various stack-holders during disasters

Shantilal Shah Engineering College, Bhavnagar
Production Engineering Department

LECTURE PLAN & LAB/TUTORIAL PLAN

Course Code :	2150003	Year/Semester :	BE III Year/ 5th Semester , Div. : B
Course Name :	Disaster management	Academic Year :	2018 odd term
L –T- P :	3-0-0	Credit :	3
Course Detail :	Theory	Term Start Date :	18/06/2018
Course Coordinator :	Prof. M. V. Gohil	Term End Date :	17/10/2018
Team of Instructors :	-	Class Test 1 :	
Faculty Name:	Prof. P.H. Solanki , Prof. B. J. Chudasama	Class Test 2 :	
	Prof. M.V. Gohil	Mid Term Exam :	

Shantilal Shah Engineering College, Bhavnagar
Production Engineering Department

Lesson Plan

Academic Year : 2018 odd Term	**Sem.: 5th sem, Div. B**
Name of Teacher : Prof.P.H.Solanki, Prof. T.S.Vala, and Prof.M.V.Gohil	**Name of Department :** Production Engineering
Subject : DISASTER MANAGEMENT [2150003]	**Hrs./Week : 3**
Theory/Tutorial : Theory	**Days:** MON, THU.

Sr. No	Topic	No. of Hours	Faculty	Planned Date	Actual Date	Teaching Aid Code	Remarks
1	**Unit 1: Understanding Disasters**	**4**					
A	Understanding the Concepts and definitions of Disaster	1	MVG	21-06-2018			
B	Hazard, Vulnerability, Risk, Capacity	1	MVG	28-06-2018			
C	Disaster and Development	1	MVG	05-07-2018			
D	Concept of disaster management	1	MVG	12-07-2018			
2	**Unit 2: Types, Trends, Causes, Consequences and Control of Disasters**	**8**					
A	Geological Disasters (earthquakes, landslides, tsunami, mining)	1	TSV	22-06-2018			
B	Hydro-Meteorological Disasters (floods, cyclones, lightning, thunder-storms, hail storms, avalanches, droughts, cold and heat waves)	1	TSV	29-06-2018			
C	Biological Disasters (epidemics, pest attacks, forest fire)	1	TSV	06-07-2018			
D	Technological Disasters (chemical, industrial, radiological, nuclear)	1	TSV	13-07-2018			
E	Man-made Disasters (building collapse, rural and urban fire)	1	TSV	20-07-2018			
F	Man-made Disasters road and rail (accidents, nuclear, radiological, chemicals and biological disasters)	1	TSV	27-07-2018			
G	Global Disaster Trends – Emerging Risks of Disasters	1	TSV	03-08-2018			
H	Climate Change and Urban Disasters	1	TSV	10-08-2018			
I	Test of unit 2	1					
3	**Unit 3: Disaster Management Cycle and Framework**	**8**					
A	Disaster Management Cycle – Paradigm Shift in Disaster Management	1	TSV	31-08-2018			
B	Pre-Disaster – Risk Assessment and Analysis, Risk Mapping, zonation	1	TSV	07-09-2018			
C	Microzonation, Prevention and Mitigation of Disasters, Early Warning System;	1	TSV	14-09-2018			

	Preparedness, Capacity Development						
D	Awareness During Disaster , Evacuation – Disaster Communication , Search and Rescue	1	TSV	28-09-2018			
E	Emergency Operation Centre – Incident Command System – Relief and Rehabilitation	1	TSV	05-10-2018			
F	Post-disaster – Damage and Needs Assessment, Restoration of Critical Infrastructure	1	TSV	12-10-2018			
G	Early Recovery – Reconstruction and Redevelopment	1	PHS	10-09-2018			
H	Yokohama Strategy, Hyogo, Framework of Action	1	PHS	17-09-2018			
I	Test of unit 3	1					
4	**Unit 4 : Disaster Management in India**	**10**					
A	Disaster Profile of India	1	MVG	19-07-2018			
B	Mega Disasters of India	1	MVG	26-07-2018			
C	Mega Disasters of India	1	MVG	02-08-2018			
D	Lessons Learnt Disaster Management Act 2005	1	MVG	09-08-2018			
E	Lessons Learnt Disaster Management Act 2005	1	MVG	16-08-2018			
F	Institutional and Financial Mechanism National Policy on Disaster Management	1	MVG	13-08-2018			
G	National Guidelines and Plans on Disaster Management	1	MVG	23-08-2018			
H	National Guidelines and Plans on Disaster Management	1	MVG	30-08-2018			
I	Role of Government (local, state and national)	1	MVG	06-09-2018			
J	Role of Non-Government and Inter-Governmental Agencies	1	MVG	20-09-2018			
5	**Unit 5: Applications of Science and Technology for Disaster Management & Mitigation**	**12**					
A	Geo-informatics in Disaster Management (RS, GIS, GPS and RS)	1	PHS	18-06-2018			
B	Geo-informatics in Disaster Management (RS, GIS, GPS and RS)	1	PHS	25-06-2018			
D	Disaster Communication System (Early Warning and Its Dissemination)	1	PHS	02-07-2018			
E	Disaster Communication System (Early Warning and Its Dissemination)	1	PHS	09-07-2018			
F	Land Use Planning and Development Regulations	1	PHS	16-07-2018			
G	Land Use Planning and Development	1	PHS	27-07-2018			

	Regulations						
H	Disaster Safe Designs and Constructions	1	PHS	27-07-2018			
I	Disaster Safe Designs and Constructions	1	PHS	06-08-2018			
J	Structural and Non Structural Mitigation of Disasters	1	PHS	13-08-2018			
K	S&T Institutions for Disaster Management in India	1	PHS	20-08-2018			
L	S&T Institutions for Disaster Management in India	1	PHS	27-08--2018			
M	Test of unit 5	1					
	Total	**42**					

Teaching Aid Code:		Prof. P.H.Solanki Prof. B J Chudasama Prof. M. V. Gohil **Sign of Teacher** **Sign of H.O.D**
1	O.H.P	
2	L.C.D PROJECTER	
3	MODEL	
4	CHART	
5	OTHER (VIDEO)	
**** Remark column should cover any slippages and remedial action planned***		
LESSON PLANNING, Rev. no. :00		Page no.:__of __

Reference books:

1. Coppola D P, 2007. Introduction to International Disaster Management, Elsevier Science (B/H), London.
2. Manual on natural disaster management in India, M C Gupta, NIDM, New Delhi
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5. Encyclopedia of disaster management, Vol I, II and IIIL Disaster management policy and administration, S L Goyal, Deep & Deep, New Delhi, 2006
6. Encyclopedia of Disasters – Environmental Catastrophes and Human Tragedies, Vol. 1 & 2,Angus M. Gunn, Greenwood Press, 2008
7. Disasters in India Studies of grim reality, Anu Kapur & others, 2005, 283 pages, Rawat Publishers, Jaipur
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12. NIDM Publications
13. High Power Committee Report, 2001, J.C. Pant
14. Disaster Mitigation in Asia & Pacific, Asian Development Bank
15. National Disaster Management Policy, 2009, GoI

16. Disaster Preparedness Kit, American Red Cross
17. Bryant Edwards (2005): Natural Hazards, Cambridge University Press, U.K.
18. Carter, W. Nick, 1991: Disaster Management, Asian Development Bank, Manila.
19. Sahni, Pardeep et.al. (eds.) 2002, Disaster Mitigation Experiences and Reflections, Prentice Hall of India, New Delhi.
20. Roy, P.S. (2000): Space Technology for Disaster management: A Remote Sensing & GIS Perspective, Indian Institute of Remote Sensing (NRSA) Dehradun.
21. Sharma, R.K. & Sharma, G. (2005) (ed) Natural Disaster, APH Publishing Corporation, New Delhi.
22. Kasperson, J.X., R.E. Kasperson, and B.L. Turner III (Eds.), 1995, Regions at Risk: Comparisons of Threatened Environments, United Nations University Press, Tokyo
23. Singh Satendra (2003): Disaster Management in the Hills, Concept Publishing Company, New Delhi.
24. Taori, K (2005) Disaster Management through Panchayati Raj, Concept Publishing Company, New Delhi.

Course Outcome:

After learning the course the students should be able to:
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(b) Understand role of IT, remote sensing, GIS and GPS in risk reduction
(c) Understand disaster management acts and guidelines along with role of various stack-holders during disasters

SHANTILAL SHAH ENGINEERING COLLEGE, BHAVNAGAR
Department of Production Engineering

B.E.SEMESTER–V (Production)
Tool Engineering (2152507)

Lesson Planning

Sr. No	Topic	No. of Hours	Staff
1	**Introduction:** Tool design practice, procedure of tool design, process planning and tool design.	2	PHS
2	**Mechanics of Machining:** Place of machine in production , classification of material removal processes, orthogonal and oblique cutting, merchant's circle diagram-force and velocity relationship, types of cutting tool mechanics, their characteristics and selection criteria, mechanics of metal cutting- effect of tool-geometry and other cutting parameters, mechanisms of formation of chips-types of chips formed, concept of specific cutting pressure , types of tool wear, Factors causing wear, tool life, variables affecting tool life, economical cutting speed, machinability of metals, economics of machining.	16	BJC
3	**Thermal Aspects in Machining:** Sources of heat generation in machining and its effects, temperature measurement techniques in machining, types of cutting fluids, Functions of cutting fluid, Characteristics of cutting fluid, Application of cutting fluids	6	PHS
4	**Design of Single Point Cutting Tools:** Tool geometry for single point cutting tool, tool signature , Design of single point cutting tools such as solid tools , tipped tools, coated tipped tools, throw away type tools and diamond tools.	6	PVS
5	**Design of Multipoint Tools:** Design of milling cutters, gear milling cutters, hobs gear shaping tools, broaches, drills, reamers, taps & dies for thread cutting, boring tools, flat form tools, circular form tools. Standard tool holders & standard tooling and their design for turrets and automates.	6	PHS
6	**Cutting Tool Materials:** Types of cutting tool materials, their selection and Applications.	6	PHS
7	**Design of Press Tools:** Introduction to press tools and related terminology, effect of clearances, theory of deformation, stages of cutting operation, center of pressure, strap strip layout , die and punch design, design of simple, compound and progressive dies, methods of mounting punches and dies, design of drawing dies, bend allowances, bending and forming dies, Dies for diecasting and forging operations.	10	PVS
8	**Jigs and Fixture:** Essential requirements of jigs & fixtures, economics of jigs and fixtures, principles of location and clamping, location and clamping devices, types of drill bushes, types of jigs and fixtures- such as fixtures for milling, welding, heat treatment, grinding, assembly and inspection processes; standardization in jigs and fixtures, principle of work holders, common work holders for production like vises, chucks, arbors, mandrels & collets.	12	PHS

(Staff In-Charge) **(Head of Department)**

No of lectures 4lect/Week
No of Lab 2 Hr/Week

SHANTILAL SHAH ENGINEERING COLLEGE

Department of Production Engineering

LECTURE PLAN & LAB/TUTORIAL PLAN

Course Code :	**2152509**	Year/Semester :	BE 3rd Year/ 5th Semester
Course Name :	MACHINE DYNAMICS	Academic Year :	2017-18/ ODD
L –T- P :	4-2-0	Credit :	6
Course Detail :	Theory and Tutorial	Term Start Date :	18/06/2018
Course Coordinator :		Term End Date :	17/10/2018
Team of Instructors :		Assignement 1	-
Faculty Name:	Prof. V.A.Parikh, Prof. M.J.Bhatt, Prof. P.V.Sartanpara	Assignment 2	-
		:	

SHANTILAL SHAH ENGINEERING COLLEGE BHAVNAGAR
Department of Production Engineering

Lesson Plan

Academic Year : 2018-19 First Term	**Sem. : 5th sem**
Name of Teacher : Prof. V.A.Parikh	**Name of Department : Production Engineering**
Subject : MD	**Hrs./Week : 4**
Theory/Tutorial/Practical : Theory	**Days : 2**

Sr. No.	Name of Unit/Topics	Hrs. Allotted	Planned Date	Actual Date	Teaching Aid Code	Remarks
1.	Dynamic Force analysis of mechanisms: Introduction, D'alembert's principle, equivalent offset inertia force, dynamic analysis of four link mechanism, dynamic analysis of slider crank mechanism, velocity & acceleration of piston, angular velocity & angular acceleration of connecting rod, engine force analysis, turning moment on crank shaft, dynamically equivalent system inertia of the connecting rod, inertia force in reciprocating engines.	06 (VAP) Div A & B	16/07/18		2 & 4	
2.	Balancing: Introduction, static balancing, dynamic balancing, transference of force from one plane to another plane, balancing of several masses in different planes, force balancing of linkages, balancing of reciprocating mass, balancing of locomotives, Effects of partial balancing in locomotives, secondary balancing, balancing of inline engines, balancing of v-engines, balancing of radial engines, balancing machines	10 (VAP) Div A & B	18/06/18	18/06/18	2 & 4	
3.	Longitudinal Vibrations: Free longitudinal vibration, displacement, velocity & acceleration. Inertia, effect of the mass of spring, damped vibration, logarithmic decrement, forced vibration, forced damped vibration, magnification factor, vibration isolation and transmissibility.	08 (PVS) Div A & B	19/06/18	19/06/18		
4.	Transverse Vibration: Transverse vibration,	07				

	single concentrated load, uniformly loaded shaft, shaft caring several load, whirling of shafts without damping effect.	(PVS) Div A & B				
5.	Torsional Vibration:- Torsional vibration, free Torsional vibration (single rotor), inertia effect of mass of shaft, multifilar system, free Torsional vibration (two rotor system, three rotor system), torsionally equivalent shaft, free Torsional of Geared System	08 (VAP) Div A & B	13/08/18		2 & 4	
6.	Governors: Introduction, Types of Governors, Watt Governor (Simple Conical Governor), Porter Governor, Proell Governor, Hartnell Governor, Hartnug Governor, Wilson-Hartnell Governor (Radial-Spring Governor), Pickering Governor, Spring-Controlled Gravity Governor, Inertia Governor, Sensitiveness of a Governor, Hunting, Isochronisms, Stability, Effort of a Governor, Power of a Governor, Controlling Force.	14 (MVG) Div A & B	20/06/18	20/06/18		

Teaching Aid Code:	
1	O.H.P
2	L.C.D PROJECTER
3	MODEL
4	CHART
5	OTHER (VIDEO)

Sign of Teacher : _____

Sign of H.O.D : _____

**** Remark column should cover any slippages and remedial action planned***

Reference Books:

1. Theory of Machines by S.S. Ratan, Tata McGraw Hill Companies
2. Theory of Machine by R.S.Khurmi, S.Chand Publications.
3. Theory of Machines by Singh V.P., Dhanpat Rai & Sons
4. Theory of Machines by R. K. Bansal, Laxmi Publication

SHANTILAL SHAH ENGINEERING COLLEGE BHAVNAGAR
Department of Production Engineering

Lesson Plan

Academic Year : 2018-19 First Term	**Sem. : 5th sem**
Name of Teacher : Prof. V.A.Parikh,(A1,A2,B2) **Prof. P.V.Sartanparpa, (B1)Prof. M.V.Gohil (A3)**	**Name of Department : Production Engineering**
Subject : MD	**Hrs./Week : 4**
Theory/Tutorial/Practical : Tutorial	**Days : 2**

Sr. No.	Name of Unit/Topics	Hrs. Allotted	Planned Date	Actual Date	Teaching Aid Code	Remarks
1.	To solve Problems on engine force analysis analytically and graphically.	06	08/10/18		3 &4	
2.	To solve problems on balancing of rotating masses	05	18/06/18		3 &4	
3.	To solve problems on balancing of reciprocating masses.	05	09/07/18		3 &4	
4.	To study longitudinal vibrations and problems based on it.	08	06/08/18		3 &4	
5.	To study transverse vibrations and problems based on it.	07	27/08/18		3 &4	
6.	To study Torsional vibrations and problem based on it.	08	03/09/18		3 &4	
7.	To study governors and problems based on it.	14	24/09/18		3 &4	

Teaching Aid Code:	
1	O.H.P
2	L.C.D PROJECTER
3	MODEL
4	CHART
5	OTHER (VIDEO)

Sign of Teacher : _____

Sign of H.O.D : _____

**** Remark column should cover any slippages and remedial action planned***