SARASWATI Education Society's

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Kharghar, Navi Mumbai - 410 210.

Mechanical Department

Name of Programme: - ME

Name of Course: - Production Engineering and Robotics (SEM-VI 2017-18)

Course Outcome. – C609.1 Student will be able to understand the all about production system and productivity.

Assignment –I

1. Define productivity? State the factors which improves productivity.
2. Compare between various types of production systems with respect to
   1) Product 2) Layout 3) Machines used 4) Cost of product
3. What is productivity index? State it with respect to labor, material, and machine.
4. Define productivity. Explain labor productivity with example.
5. Explain the concept of production system with proper input output model.
6. Compare Job and Batch production system with respect to:
   1) Equipment's 2) Investment 3) Labor 4) Examples of products.
7. State any six techniques used for improving productivity.
8. What is productivity of materials? How it differs from total productivity?
9. Suggest most appropriate type of production system for manufacturing.
   1) Sugar 2) Nuts and bolts 3) Connecting rods 4) Plastic bottles
10. What are the various tools of productivity? How productivity can be increased?

Last Date Of submission: 29/12/2017

Course coordinator: - Mrs. Priti V. Dahake (TYME-A) & Mrs. Radhika Mankar (TYME-B)

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Mechanical Department

Name of Programme: - ME

Name of Course: - Production Engineering and Robotics (SEM-VI 2017-18)

Course Outcome. – C609.2 Student will be able to understand the all about production system and productivity.

Assignment –II

1. Suggest appropriate material handling device for
   (i) Transporting coal in thermal power plant
   (ii) Transporting cotton in ginning unit
   (iii) Transporting pallets
   (iv) Transporting packed boxes of biscuits within industry.
2. State different factors affecting process planning.
3. Describe working of screw conveyor with neat sketch.
4. What are the salient features of Industrial Policy as regards to backward areas?
5. Explain the need and importance of material handling devices in an Industry.
6. Suggest and explain with neat sketch material handling device used in mass production.
7. State the relaxation provided for backward areas to promote rapid industrial growth?
8. Explain any four factors that affect selection of site.
9. What is group technology? Give its applications.
10. Explain the concept of AGV? State it's any two applications.

Last Date Of submission: 12/01/2018

Course coordinator: - Mrs. Priti V. Dahake (TYME-A) & Mrs. Radhika Mankar (TYME-B)

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Kharghar, Navi Mumbai - 410 210.

Mechanical Department

Name of Programme: - ME

Name of Course: Production Engineering and Robotics (SEM-VI 2017-18)

Course Outcome. – C609.2 Become used to in new trends in manufacturing system like PPC and process planning.

Assignment – III

1. State and explain the various factors affecting process planning.
2. Explain in brief steps involved in process planning.
3. State and explain how the different operations can be combined?
4. Explain the factors affecting process planning.
5. State the various stages at which inspection should be planned?
6. State different factors affecting process planning.
7. What is combined operation? Give two examples of combined operations.
8. Explain various steps for planning a process for a product from raw material to finished product in an industry.
9. State the information required to do process planning. What is working drawing?
10. How inspection stages are determined? State the significance of operation sheet.
11. State the various stages at which inspection should be planned?

Last Date Of submission: 17/01/2018

Course coordinator: - Mrs. Priti V. Dahake (TYME-A) & Mrs. Radhika Mankar (TYME-B)

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Kharghar, Navi Mumbai - 410 210.

Mechanical Department

Name of Programme: - ME

Name of Course: Production Engineering and Robotics (SEM-VI 2017-18)

Course Outcome. – C6O9.2 Become used to in new trends in manufacturing system like PPC and process planning.

Assignment –IV

1. Explain the GANTT CHART used in production planning and control. State its advantages and disadvantages.
2. Enlist the various functions of PPC. Describe: (i) Scheduling (ii) Routing in details
3. Explain the concept of line balancing with example.
4. Prepare operation process sheet and decide sequence of operation for the component shown in Figure. Assume suitable material and cutting conditions.
5. Define routing and sequencing.
6. What is the meaning of control? State its importance.
7. What is the function of production planning?

Last Date Of submission: 25/01/2018

Course coordinator: - Mrs. Priti V. Dahake (TYME-A) & Mrs. Radhika Mankar (TYME-B)

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Kharghar, Navi Mumbai - 410 210.

Mechanical Department

Name of Programme: - ME

Name of Course: Production Engineering and Robotics (SEM-VI 2017-18)

Course Outcome. – C6O9.3 Apply modern tools in production engineering like work study, JIT, ERP.

Assignment –V

1. What are the objectives of method study.
2. Explain the following terms in context of work study. (i) Therbligs (ii) MTM (Method time measurement)
3. A particular activity on the shop floor consists of three elements. Calculate standard time for the activity. Total allowances are given as percentage of normal.

Elements	I	II	III
Observed time (min)	1.20	0.50	0.80
Rating factor (%)	80	90	75
Total Allowances (%)	22	19	20

4. What allowances are considered while calculating standard time?
5. Which technique is used for continuous improvement? What is the concept behind it?
6. If a worker takes 15 minutes as a standard time for a job in which total allowance is 20% of normal time. If the rating of worker is 100% find the actual time required by the worker.

Last Date Of submission: 9/02/2018

Course coordinator: - Mrs. Priti V. Dahake (TYME-A) & Mrs. Radhika Mankar (TYME-B)

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Kharghar, Navi Mumbai - 410 210.

Mechanical Department

Name of Programme: - ME

Name of Course: - Production Engineering and Robotics (SEM-VI 2017-18)

Course Outcome. – C6O9.3 Apply modern tools in production engineering like work study, JIT, ERP.

Assignment –VI

1. Differentiate between Jig and Fixture.
2. Construct two handed process chart for the assembly of Nut and Bolt with summary.
3. Explain 3-2-1 principle of location with suitable example.
4. State and explain the general principle of Jig Fixture design.
5. What are the different types of fixtures? Explain any one with sketch.
6. List down various types of clamping devices used in design of jigs. Explain any one with sketch.
7. Explain the principle of working of Hydraulic Actuator and state it's advantages.
8. What is fool proofing of jigs and fixtures? State its importance.
9. State any four principles of jig and fixture design.
10. Draw proportionate sketch of template jig. State its use.
11. Draw the labelled sketch of leaf jig.

Last Date Of submission: 21/02/2018

Course coordinator: - Mrs. Priti V. Dahake (TYME-A) & Mrs. Radhika Mankar (TYME-B)

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Mechanical Department

Name of Programme: - ME

Name of Course: - Production Engineering and Robotics (SEM-VI 2017-18)

Course Outcome. – C6O9.4- Interpret the concept and meaning of 5S, lean manufacturing.

Assignment –VII

1. Explain the concept of continuous improvement (Kaizen).
2. What is meant by '5S'? State meaning of each "S" in detail.
3. Explain the concept of ERP.
4. Explain the concept of JIT and how does it help the manufacturing system to improve productivity?
5. Explain the importance of '5S' ("Five S") concept.
6. State basic difference between push and pull type of manufacturing system.
7. What is lean manufacturing? State its benefits.
8. Describe pull type of JIT system with an example.
9. What is concept of ERP? State it's any two advantages.

Last Date Of submission: 28/02/2018

Course coordinator: - Mrs. Priti V. Dahake (TYME-A) & Mrs. Radhika Mankar (TYME-B)

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Mechanical Department

Name of Programme: - ME

Name of Course: - Production Engineering and Robotics (SEM-VI 2017-18)

Course Outcome. – C6O9.6 Student will be able to understand the concept of robotics and its application.

Assignment –VIII

1. Explain Robot Anatomy and structure with sketch.
2. What are grippers? Explain vacuum actuated gripper in brief.
3. What are actuators? Explain mechanical and hydraulic actuators type with advantages and disadvantages.
4. Explain the tactile sensors in robots.
5. Give classification of robot sensor.
6. State any four types of grippers used in robots with one application of each.
7. Describe spherical configuration used in robot with neat sketch.
8. What are the advantages of hydraulic actuators?
9. Describe any two types of joints used in robotic arm and wrist.
10. Describe the vacuum actuated gripers with example.
11. Describe cylindrical body and arm assembly robot with neat sketch.

Last Date Of submission: 09/03/2018

Course coordinator: - Mrs. Priti V. Dahake (TYME-A) & Mrs. Radhika Mankar (TYME-B)