Content

Course Code	Course Name	Semester	Theory	Practice	Lab	Credit	ECTS
IND231	Manufacturing Techniques	4	2	1	0	2.5	4

Prerequisites	
Admission Requirements	

Language of Instruction	
Course Type	Compulsory
Course Level	Bachelor Degree
Objective	The field of production that is stated in the industrial engineering definition is to be known with all aspects. In this course production will be examined by its methods. Learning how the products used in daily life are manufactured in the industry will be useful in the planning and determination of constraints stage. In this context, the objectives of this course are determined as follows: • To show the students how creating a mass production -one of the methods of production- is made, • To ensure the students mastery in plastic forming methods and performing the calculations about these methods, • To show the students how to produce the parts by reducing or increasing the mass.
Content	1. Week: Introduction: General knowledge about production methods. 2. Week : Casting: Introduction, casting methods, soil casting, metal casting 3. Week: Casting: Pressurized casting, continue casting, foundry of iron, finishing works, casting faults. 4. Week : Plastic forming methods, Forging: Introduction, accumulation force and work, forging faults, deburring, drop presses. 5. Week : Rolling: Introduction, roller arrangements, production stages, faults in roll products, production of seamless pipe. 6. Week : Mid-term exam. 7. Week : Extrusion: Introduction, pipe extrusion, extrusion pressure, material flow, extrusion faults, comparison of variant extrusion methods. 8. Week : Pulling: Introduction, wire and bar pulling, pulling workbenches, thermal works, pulling faults. 9. Week : Plate processing methods: Introduction, presses, plasticity, torsion, plastering. 10. Week : Welding: Introduction and classifying, welding ability, gas welding, arc welding, electrical arc welding. 11. Week : Technical experience trip 12. Week : Welding: Under gas arc welding, Under dust welding, residuary distention and skewness, resistance welding, special welding methods, quality in welding production, non-destructive tests. 13. Week : Producing metals with holding up swarf: Definition and usage areas, basics, equipments, production methods. 14. Week : Dust Metallurgy: Introduction, preparation of dusts, pressurizing.
References	• Schey, J. A., Introduction to manufacturing processes, McGraw Hill, 3rd ed., 2000. • Notes

Theory Topics

Week	Weekly Contents
1	Introduction: General knowledge about production methods.
2	Casting: Introduction, casting methods, soil casting, metal casting
3	Casting: Pressurized casting, continue casting, foundry of iron, finishing works, casting faults.
4	Plastic forming methods, Forging: Introduction, accumulation force and work, forging faults, deburring, drop presses.

Week	Weekly Contents
5	Rolling: Introduction, roller arrangements, production stages, faults in roll products, production of seamless pipe.
6	Mid-term exam.
7	Extrusion: Introduction, pipe extrusion, extrusion pressure, material flow, extrusion faults, comparison of variant extrusion methods.
8	Pulling: Introduction, wire and bar pulling, pulling workbenches, thermal works, pulling faults.
9	Plate processing methods: Introduction, presses, plasticity, torsion, plastering.
10	Welding: Introduction and classifying, welding ability, gas welding, arc welding, electrical arc welding.
11	Welding: Under gas arc welding, Under dust welding, residuary distention and skewness, resistance welding.
12	Welding: Special welding methods, quality in welding production, non-destructive tests.
13	Producing metals with holding up swarf: Definition and usage areas, basics, equipments, production methods.
14	Dust Metallurgy: Introduction, preparation of dusts, pressurizing.