INME212 Metal Shaping

Curricular Area	Manufacturing Processes
Type of Course	Mandatory – Major
Catalogue Description	Fundamentals of casting and metal casting processes. Metal forming: bulk and sheet metalworking. Material removal processes
Prerequisites by Courses	INME 211 Engineering Materials Technology
Prerequisites by Topics	Properties of Materials
Instructors	Zeidoun Zeidan - Lecturer z.zeidan@bau.edu.lb Department of Industrial and Engineering Management Office: F130 (Phone Ext 3454)
Office Hours	T 8:00-9:00, W 9:00-10:00, F 10:00-12:00
Load	3 credits; 1 Lecture- 1 lab session/week – 120 min per session
Textbook	Fundamentals of Modern Manufacturing. SI version, by: M. P. Groover; 4th edition.
Reference Books	• Manufacturing processes and equipment (c2000); Tlusty, Jiri • Advanced Machining Technology Handbook; J. Brown • Handbook of Product Design for Manufacturing; Ed. James g. Bralla, Mcgraw-Hill • Design for manufacturing (c2001); Poli, C.

	Subjects covered
Week 1	Syllabus/ Introduction
Week 2	Ch 19 Theory of Metal Cutting
Week 3	Ch 19 Theory of Metal Cutting
Week 4	Ch 20 Machining Operations and Machining Tools
Week 5	Ch 20 Machining Operations and Machining Tools
Week 6	Ch 9 Fundamental of Casting
Week 7	Ch 9 Fundamental of Casting
Week 8	**Midterm**
Week 9	Ch 10 Metal Casting Processes
Week 10	Ch 10 Metal Casting Processes
Week 11	Ch 10 Metal Casting Processes
Week 12	Ch 17 Bulk Deformation Processes
Week 13	Ch 17 Bulk Deformation Processes
Week 14	Ch 18 Sheet Metal Working
Week 15	Ch 18 Sheet Metal Working

Learning Outcomes Correlation with	Program Outcomes	Program Objectives
Demonstrate theoretical knowledge and have practical skills that will be required for shaping processes of metals	a,b,e	1,2
Aware of the basic principles of casting, forming and traditional metal removal processes and their applications and limitations	a,b,e	1,2
Develop the academic abilities required to solve problems relevant to shaping of metals and to specify the proper shaping process for producing required parts.	a,b,e	1,2
Practice manufacturing parts using simple metal cutting machine tools, forming operations and casting operation in the workshop	a,b,e	1,2

Learning Outcomes Assessment Tools	Quizzes	MidTerm Exam	End of term exam
Demonstrate theoretical knowledge and have practical skills that will be required for shaping processes of metals	x	x	x
Aware of the basic principles of casting, forming and traditional metal removal processes and their applications and limitations	x	X	x
Develop the academic abilities required to solve problems relevant to shaping of metals and to specify the proper shaping process for producing required parts.		x	x
Practice manufacturing parts using simple metal cutting machine tools, forming operations and casting operation in the workshop	x		

Assessment:

Assessment:	Dates	Weighing
Midterm	As scheduled	30%
Assignment , Participation, and attendance.		10%
Lab	Per session	20%
End of term Exam	Exam period	40%

Attendance:

As set by BAU regulations, and specified in Student Manual, students who miss more than one-fifth of the sessions of any course in the first ten weeks of the semester will be required to withdraw from the course with a grade of "WF".

Course Coordinator	Dr. Hadi Abou Chakra
Date	