

**FACULTY OF MECHANICAL ENGINEERING
BACHELOR OF MECHANICAL ENGINEERING**

TEACHING PLAN

1	Course Code and Name	BMM3643 Manufacturing Processes												
2	Year	3												
3	Program Level/Category	Degree (Mechanical/Manufacturing/Production)												
4	Unit	3 Credits												
5	Prerequisite Course	Nil												
6	Contact Hours	Lecture	3 units					3 hours X 14 weeks						
		Tutorial	0 unit					0 hour X 14 weeks						
		Laboratory	0 unit					0 hours X 14 weeks						
7	Course Synopsis	This course introduces students to manufacturing processes used for converting raw materials into finished products. Various processes, machinery, and operations will be examined with emphasis placed on understanding engineering materials and processing parameters that influence design considerations, product quality, and production costs. Sustainable manufacturing process will be discussed in student project presentation.												
8	Course Outcomes	By the end of semester, students should be able to: CO1: Evaluate different types of metal & polymer solidification processes. CO2: Interpret forming processes for bulk metal, sheet metal and powder metallurgy. CO3: Justify major types of material removal process, joining process and surface treatments. CO4: Formulate a process flow to manufacture a conceptual product by considering sustainable manufacturing process.												
9	Assessment Methods	Distribution (%)		CO1		CO2		CO3		CO4				
		Assignments/Quizzes	15 %	✓	✓	✓								
		Midterm Examination	20 %	✓	✓									
		Project	25 %										✓	
		Final Examination	40 %	✓	✓	✓								
		Total	100 %											
10	CO-PO Mapping	CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
		CO1	C5											
		CO2		C5										
		CO3			C5									
		CO4												A4
11	References	<ol style="list-style-type: none"> Serope Kalpakjian, Steven R. Schmid 2006. Manufacturing Engineering and Technology, 6th Edition in SI Units, Prentice-Hall, Inc. ISBN- 0131489658 John A. Schey, 2000. Introduction to Manufacturing Processes, McGraw-Hill, Inc. 3rd Edition, ISBN-13 9780071169110 Mikell P. Groover, Fundamentals of Modern Manufacturing: Materials, Processes, and Systems, 3rd Edition, Wiley Inc, ISBN- 978-0-471-74485-6. 												
Revision Date: 15 August 2017							Effective Date: 4 September 2017							
Teaching plan reference number: BMM3643REV.03														

Week	Topic	Delivery	Assessment
1	1.0 Metal Casting & Polymer Processes	Lecture	Assignments/Quizzes, Project, Midterm Exam
2-4	2.0 Bulk Metal Deformation and Sheet Metal Processes	Lecture	Assignments/Quizzes, Project, Midterm Exam
5-7	3.0 Powder Metallurgy Processes	Lecture	Assignments/Quizzes, Project, Final Exam
8-10	4.0 Material removal processes: Machining, Abrasive and Finishing operation	Lecture	Assignments/Quizzes, Project, Final Exam
11-12	5.0 Joining Processes	Lecture	Assignments/Quizzes, Project, Final Exam
13-14	6.0 Surface Treatments	Lecture	Assignments/Quizzes, Project, Final Exam