

BMM3643 Manufacturing Processes Course Information

by

Dr Mas Ayu Bt Hassan
Faculty of Mechanical Engineering
masszee@ump.edu.my



Course Introduction

Lecturer:

- Dr. Mas Ayu Bt Hassan

Contact:

- masszee@ump.edu.my
- Block 1A – Ground Floor

Phone:

- 09-4246316



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.



COURSE OUTLINE

| Week | Content | Week | Content |
|------|---|------|---|
| 1 | Introduction to Manufacturing Processes | 8 | Sheet Metal Forming -Bending & Deep Drawing |
| 2 | Metal Casting - Fundamental of Metal Casting & Sand Casting | 9 | Powder Metallurgy |
| 3 | Metal Casting - Expandable Casting & Permanent Casting | 10 | Material removal processes: Machining, Abrasive and Finishing operation |
| 4 | Forming & Shaping Polymer - Extrusion, Blow Molding & Injection Molding | 11 | Joining Processes |
| 5 | Bulk Metal Forming - Open-die, Closed-die & Precision Forging | 12 | Surface Treatment |
| 6 | Bulk Metal Forming - Extrusion & Drawing Process | 13 | Project Presentation |
| 7 | Sheet Metal Forming - Sheet Metal Characteristics & Cutting | 14 | Project Presentation |

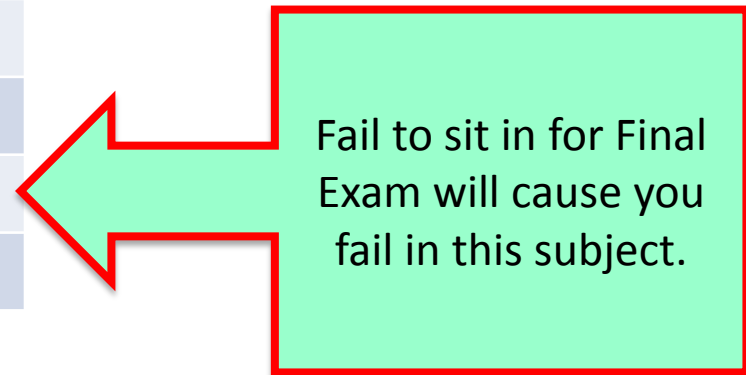
References

1. Manufacturing Engineering & Technology.
S. Kalpakjian & S. Schmidt. © 2014 7th ed. Prentice Hall
2. Introduction to Manufacturing Processes. J. A. Schey
© 2000, 3rd ed. McGraw-Hill
3. Fundamentals of Modern Manufacturing, Mikell P.
Groover © 2002, 4th John Wiley & Sons, Inc.



Course Information

| Assessment | Percentage (%) |
|-----------------------------------|----------------|
| Assignment/Quiz | 15 |
| Project (Report and Presentation) | 25 |
| Mid-Term Exam | 20 |
| Final Exam | 40 |
| TOTAL | 100 |



Fail to sit in for Final Exam will cause you fail in this subject.



Assignment & Project Format

Please remember to include the questions given in the assignments. **Cover page** of the assignment should include:

1. Leader's Name & No. Matric
2. Section
3. Group Members' Name & No. Matric
4. Lecturer's Name
5. Submission date

ZERO MARKS for PLAGIARISM & COPY/PASTE from internet !!!

Late submission also will be penalized



Project Information

A project proposal must be submitted before approval is given for you to proceed your project. Maximum of **5 pages** which includes:

- i. Cover page
- ii. Contents ;

- ✓ Propose an engineering product which is produced through multiple manufacturing processes, **at least** consists of 10 different processes.
- ✓ Describe full process activities in product manufacturing processes such as design, bill of material, costing and etc.
- ✓ Your product **MUST NOT** similar with other groups, so it is First Come, First Serve basis.
- ✓ Need to submit the project proposal after MID TERM BREAK.



General Class rules

- Attendance MUST minimum **80%** (refer UMP's rule)
- Please be punctual to avoid interruption during lecture (**beyond 10 min late**, students are not allowed to enter the class)
- Proper Attire/Apparel (no slippers!)
- Class preparation (make sure all whiteboards are clean, **desktop is in ON condition**)



Author and Co-authors Information

Main author:

Dr Mas Ayu bt Hassan (masszee@ump.edu.my)

Co-authors:

Dr Siti Rabiattull Aisha bt Idris (rabiattull@ump.edu.my)

En Rosdi bin Daud (rosdidaud@ump.edu.my)

