

LECTURE PLAN

**MANUFACTURING PROCESSES (SKMM 2713)
SESSION 2019/2020 – SEM I (PERDANA)**

Week/Date	TOPICS	REFERENCE	REMARKS
WEEK 1 9/09/2019 – 14/09/2019	CHAPTER 01: Introduction to Manufacturing <ul style="list-style-type: none"> • General Introduction • Sustainability issues in manufacturing • Classification of Manufacturing (detail) • Process Selection • Material Selection 	Lecture notes	Birthday of His Majesty Seri Paduka Baginda Yang Di-Pertuan Agong 9 September 2019 (Sunday) Maal Hijrah 1441 11 September 2019 (Tuesday)
WEEK 2 15/09/2019 – 21/09/2019	CHAPTER 02: Manufacturing Aspects <ul style="list-style-type: none"> • Introduction • Specification • Standard • Manufacturing of mating parts • Limits and Fits 	Lecture notes	GROUP PROJECT INSTRUCTION Malaysia Day 16 September 2019 (Monday)
WEEK 3 22/09/2019 – 28/09/2019	CHAPTER 03: Polymer & Polymer Processing <ul style="list-style-type: none"> • Introduction • Classification of polymer • Criteria of plastic selection. • Advantages and disadvantages of plastic compared to metal. • Additives in plastic • Plastic processing • Sustainability issues 	Kalpakjian, ch 7, 19 Groover ch 13	
WEEK 4 29/09/2019 – 05/10/2019	CHAPTER 04: CAD/CAM/CNC <ul style="list-style-type: none"> • Introduction • CAD/CAM • CNC Technology • Part Programming (G & M Codes for milling operation) • Sustainability issues 	Lecture notes	Hol Almarhum Sultan Iskandar (JB Only) 5 October 2019 (Saturday)
WEEK 5 ~ WEEK 6 06/10/2019 – 19/10/2019	CHAPTER 05: Metal Forming Processes <ul style="list-style-type: none"> • Introduction • Basic calculation. • Rolling process • Forging process • Extrusion Processes • Rod and wire drawing • Sheet Metal forming. • Sustainability issues 	Kalpakjian, ch 13, 14, 15, 16 Groover ch 18, 19, 20	TEST 1
WEEK 7 & WEEK 9 20/10/2019 – 09/11/2019	CHAPTER 06: Metal Casting Processes <ul style="list-style-type: none"> • Introduction • Basic calculation. • Pattern, Molding, Gating system, Core • Casting Processes – Nonpermanent Casting • Casting Processes – Permanent Casting • Casting design and basic principles • Casting defects • Sustainability issues 	Kalpakjin, ch 10, 11, 12 Groover ch 10, 11	Birthday of Prophet Muhammad S.A.W (JB Only) 09 November 2019 (Saturday)
WEEK 8 27/10/2019 – 02/11/2019	SEMESTER BREAK		Deepavali 27 October 2019 (Sunday) (JB Only)

WEEK 10 ~ WEEK 12 10/11/2019 – 30/11/2019	CHAPTER 07: Joining Processes <ul style="list-style-type: none"> • Introduction and classification. • Soldering and Brazing • Welding Processes • Joint quality and weld joint tests • Mechanical joining processes • Sustainability issues 	Kalpakjian, ch 30, 31, 32 Groover ch 30, 31, 32, 33	
WEEK 13 ~ WEEK 15 01/12/2019 – 21/12/2019	CHAPTER 08: Machining Processes <ul style="list-style-type: none"> • Introduction • Mechanic of cutting • Tool life • Cutting Tool materials • Cutting fluids • Turning Operation • Milling Operation. • Sustainability issues 	Kalpakjian, ch 21, 22, 23, 24, 25 Groover ch 21, 22, 23	TEST2 GROUP PROJECT SUBMISSION
22/12/2019 – 26/12/2019	REVISION WEEK		Year-End School Break 24 November ~ 31 December 2019 Christmas Day 25 November 2019 (Tuesday)
29/12/2019 – 02/01/2020	EXAMINATION WEEKS (3 WEEKS)		

LECTURERS	Section 1:	Mr. Rozaimi Mohd Saad	019-771 7933	C25-327
	Section 2:	Dr. Richard Foo Jin Hoe	018-779 4577	C23-408
	Section 3:	Dr. Mohd Faridh Ahmad Zaharuddin	013-236 2347	C24-324
	Section 4:	Mr. Zulkepli Muhamad	019-729 3510	C25-331
	Section 5:	Mr. Zulkepli Muhamad	019-729 3510	C25-331
	Section 6:	Dr. Mohd Azlan Suhaimi	019-724 8581	C23-323
	Section 7:	Mr. Rozaimi Mohd Saad	019-771 7933	C25-327

EVALUATION:

(a) Course work	60%
i. Tests 1 (15% - 90 minutes)	
ii. Tests 2 (15% - 75 minutes)	
iii. Case study/assignment (30%)	
(b) Final Examination	<u>40%</u>
(c) Total	<u>100%</u>

TEXT:

Kalpakjian, S., "Manufacturing Engineering and Technology", 6th Edition, 2010, Prentice Hall.

REFERENCES:

- Groover, M. P., "Fundamentals of Modern Manufacturing", 3rd edition, John Wiley, 2007
- DeGarmo, E.P., "Materials and Processes in Manufacturing", 10th edition, John Wiley, 2008.
- Ahmad, Z.A., "Proses Pembuatan – Jilid I & II", Penerbit UTM, 1997, 1999.
- Ostwald, F.P. and Munoz, J. (1997), Manufacturing Processes and Systems, 9th Edition, John Wiley

MAKLUMAN TAMBAHAN: (EAC telah menetapkan bahawa pelajar perlu diberi pilihan utk memilih. Contoh: ada 6 soalan dan pilih 5 sahaja – Peperiksaan Akhir)

Test 1 (15%):

- (a) Chapter 01
- (b) Chapter 02

Test 2 (15%):

Chapter 05 (Metal Casting)

Final Exam (40%):

- (a) Q1 – Calculation (Compulsory)
- (b) Q2 – Sustainability (Compulsory)
- (c) Q3 – Forming (Compulsory)
- (d) Q4 – Joining (Compulsory)
- (e) Q5 – Machining (Choose Q5 or Q6)
- (f) Q6 – Machining (Choose Q5 or Q6)

Assignment (10%):

- (a) Chapter 03-Polymer (5%)
(Hardcop/sofcopy and Video presentation – individual)
- (b) Chapter 04-CNC (5%)

Group Project (15%):

- (a) Report Writing (10%)
- (b) Peer Assessment (5%)
- (c) Video Presentation -group/individual (5%)