رمز المقرر: 404061107–4		جامعة أم القرى
المتطلب السابق: تفاضل وتكامل للهندسة (2)	UMM AL-QURA UNIVERSITY	كلية العلوم التطبيقية
الفصل الدراسي الثاني 1444هـ		قسم العلوم الرياضية

الخطة الدراسية لمقرر: تفاضل وتكامل للهندسة (2) (Calculus 2 for Engineering)

Weeks	Chapters	Sections	Topics
1	Engineering Applications of Derivatives	3.1 - 3.3 Calculus, 14th Edition, Thomas	**Revision on the Derivatives**
2	Engineering Applications of Derivatives	3.4 Calculus, 14th Edition, Thomas	**Motion Along a Line** Examples: *3 and 4.* Exercices: *1-(a,b), 5-(a,b) and 7-(a,b).*
		3.7 Calculus, 14th Edition, Thomas	**Implicit Differentiation** Examples: *1, 3 and 4.* Exercises: *1, 5, 9, 19 and 25.*
3	Engineering Applications of Derivatives	3.8 Calculus, 14th Edition, Thomas	**Related Rates** Examples: *1, 2, 3 and 4.* Exercises: *1, 13 and 23.*
		3.9 Calculus, 14th Edition, Thomas	**Linearization and Approximations** Examples: *1, 2, 4 and 6.* Exercises: *1, 5, 9 and 11.*
4	Engineering Applications of Derivatives	8.2 Calculus, 9th Edition, Purcell	**L'Hôpital's rule** Examples: *1, 4, 5, 6, 7 and 8.* Exercises: *1, 3, 9, 15, 23 and 35.*
	Applications of the Derivative	3.1 Calculus, 9th Edition, Purcell	**Maxima and Minima** Examples: *1, 2 and 3.* Exercises: *5, 7, 9, 12, 17 and 23.*
5	Applications of the Derivative	3.2 Calculus, 9th Edition, Purcell	**Monotonicity and Concavity** Examples: *1, 2, 3, 4 and 7.* Exercises: *1, 3, 9, 11 and 19.*
		3.3 Calculus, 9th Edition, Purcell	**Local Maxima and Minima** Examples: *1, 2, 4, 5 and 6.* Exercises: *1, 3, 7, 11, 22 and 31.*
6	Applications of the Derivative	3.5 Calculus, 9th Edition, Purcell	**Sketching Curves** Examples: *1, 2 and 4.* Exercises: *1, 7, 9 and 23.*
		3.6 Calculus, 9th Edition, Purcell	**Mean Value Theorem** Examples: *1, 2 and 3.* Exercises: *1, 3, 10 and 15.*
7			**Midterm Exam**
8	Partial Derivatives	12.1 Calculus, 9th Edition, Purcell	**Functions of Two or More Variables** Examples: *1 and 6.* Exercises: *1-(a), 3-(a) and 8.*
9	Partial Derivatives	12.2 Calculus, 9th Edition, Purcell	**Partial Derivatives and Rules for Finding Derivatives** Examples: *1, 2, 5, 6 and 7.* Exercises: *1, 3, 5, 7, 17 and 21.*
10	Partial Derivatives	12.6 Calculus, 9th Edition, Purcell	**Chain Rule and Partial Derivative of Natural Log** Examples: *1, 3, 4, 5, 6 and 7.* Exercises: *1, 3, 4, 8, 10, 21 and 23.*