Module (Course Syllabus) Catalogue

2022-2023

College/ Institute	College technology Erbil	
Department	Automobile technology Engenerring	
Module Name	Mathematics	
Module Code	Math	
Degree	Technical Diploma [/] Bachelor [/] High Diploma [ ] Master [ ] PhD [ ]	
Semester	Five	
Qualification	Automobile technology	
Scientific Title	Lectuerer	
ECTS (Credits)	PhD	
Module type	Prerequisite [/] Core [ ] Assist. [ ]	
Weekly hours	4	
Weekly hours (Theory)	(3)hr Class	(12)Total hrs Workload
Weekly hours (Practical)	(1)hr Class	(12)Total hrs Workload
Number of Weeks	12	
Lecturer (Theory)	Dr. Talhat Ismael Hassan	
E-Mail & Mobile NO.	07504701532	
Lecturer (Practical)	Dr. Talhat Ismael Hassan	
E-Mail & Mobile NO.	talhat.hassan@epu.edu.iq	
Websites		

Course Book

Course Description	The aim of the course is to strengthen the student's techniques in mathematics, in particular, linear algebra, calculus and complex numbers needed by electrical, mechanical, electronic, communications and computer systems technicians. There fore Mathematic currently plays an important role in the development of so many other sciences such as. Engineering, medicine, Agriculture, commerce, economy, social sciences, practical sciences Also, The application of Mathematic is very extensive and is used in all branches of Science and Technology, Industry, Business, Finance and Economics.
Course objectives	It is aimed at broadening the students' appreciation of the central role that mathematics plays in the development and practice of engineering as well as motivating the inclusion and use of essential analytical concepts, calculus methods and linear mathematics major to engineering. The course helps students to further develop the skill of analyzing problems in a rational (rigorous, logical) and methodical Manner. Another aim is developing the students' ability to transfer their mathematical understanding (and the associated methods) to diverse engineering application areas. Identifying the student with the importance of mathematic and the rules. learning how to find the general solution of differential equation, the formula of the function of two variables , domain and rang of it. Graph of the function in three dimension. The rules of partial derevatives. And finding the value of double integral and triple integral.
Student's obligation	1)Student readiness is very important to learn and get a note about the lesson because you are amenable to the lesson. 2) Be in the Hall or lab before starting time of the lecture 3) Listen to the lecture and write a note 4) If you don't understand please ask? **5) Is not allowed to use a mobile phone in the classroom during the time of lecture until the teacher goes out of the classroom, If you use it, therefore you face legal punishment.**

Required Learning Materials	White board and Data show to view the headlines, definitions and tables.			
Evaluation		**Task**	**Weight (Marks)**	**Due Week**	**Relevant Learning Outcome**

Evaluation	Task	Weight (Marks)	Due Week	Relevant Learning Outcome
	Paper Review	0		
Assignments — Homework	3		
Assignments — Class Activity	3		
Assignments — Report	1		
Assignments — Seminar	1		
Assignments — Essay	0		
Assignments — Project	0		
Quiz	5%		
Lab.	15%		
Midterm Exam	20%		
Final Exam	60%		
Total	100%		

Specific learning outcome:	1- white bourd. 2- Data show 3- Discussion on subjects.
Course References:	*K.A. Stroud, Dexter J. Booth, 2001.Engineering mathematics,Industrial Press Inc, New York.* *K. S. Rattan, N. W. Klingbeil,2015.Introductory Mathematics forEngineering Applications, John Wiley, USA.* *J. Stewart, 2012.Calculus: Early Transcendental, Brooks/Cole,USA.* *C. R. Wylie, J R.,1966. Advanced Engineering Mathematics,* McGraw-Hill, UK. *J. Bird, 2007.Engineering mathematics, Elsevier Ltd., UK.* *L. Glasgow,2014,Applied Mathematics for Science andEngineering, John Wily, USA,* *G. Fiche, 2008. Mathematics for Engineers, John Wiley, USA.* B– Magazines and review (internet): Using internet to get more information about the subjects.

Course topics (Theory)	Week	Learning Outcome
1- some basic concept about differential equations.	1	
2- Separeble differential equation and solving examples.	2	
3- Homogenouse differential equation and solving examples.	3	
4- Linear differential equation and solving examples.	4	
5- function of two variables and solving examples.	5	
6- Domian and renge for function of two variables and solving examples.	6	
7- Graph for function of two variables and solving examples.	7	
8- partial derivatives for function of two variables and solving examples.	8	
9- Double integral and solving examples.	9	
10- Application of Double integral and solving more examples.	10	
11- Triple integral and solving examples.	11	
12- Application of triple integral and solving more examples.	12	

Practical Topics (Totorial)	Week	Learning Outcome
Solving examples on differential equations.	1	
Solving examples on separable D. E..	2	
Solving examples on Homogenouse D. E.	3	
Solving examples on function of two variables and.	4	
Solving examples for finding the domain and range of the function of two variables.	5	
Solving examples on partial differential equations.	6	
Solving examples for applications of partial differential equations.	7	
Solving examples on Double integral.	8	

Solving examples on applications of Double integral .	9	
Solving examples on triple integrals.	10	
Solving examples on applications of triple integrals.	11	
Solving more examples on integrals and aplications.	12	

Quasion example design

Q1-Define partial derevatives and solve the D. E. $(x^2 - 3y^2)dx + (xy + 2x^2)dy$

Q2/ Let $f(x, y) = \sin(x)\cos(y^2 + 4)$ find f_{xy} and f_{xxy}

Q3) find the value of $\displaystyle\int_{1}^{3}\int_{x+1}^{x^2}(5x + 3xy)dydx$.

Q4) compute the integration $\displaystyle\int_{2}^{5}\int_{2-x}^{x^2+3}\int_{y-2}^{y+3}(y^2 + 3x^2 - z + 6)dzdydx$.

20. Extra notes:
I have no notification about my subject Mathematic.

External Evaluation
The course book of numerical analysis is completely related to syllabus of subjects, the preactical syllabus satisfy the goal of Mathematic subjects.

The pratical course is completely defined the theoretical and practical lectures. Dr. Basim Mohammed Fadhil Lecturer of automobile Engenerring department.