

Course Syllabus					
Course Information					
Code	CHE453	Contact Hours	Lecture	3	
Name	Composite Science and Engineering		Tutorial	1	
Prerequisites	Completing 120 cr hr		Lab	0	
Course Description					
Scope	This course aims to provide students with knowledge of the governing principles of composites, characterization, performances and other technical aspects of practical importance for practicing engineers and scientists. The course will also discuss and appraise the recent advances in composite materials, constituent materials of composites, and composite manufacturing processes and perform analyses of the properties of composite materials				
CLOs	1 Knowledge and Understanding: 1.1 Know basic Production/fabrication processes of composite materials and Understanding the concept of reinforcement 1.2 Understand the importance of matrix and the effect on mechanical properties and processability of composite materials. Also, understand the relationship between structures and physical and mechanical properties of composite materials 2 Skills: 2.1 Gain knowledge of contemporary issues on composite materials and processing. 3 Values: 3.1 Demonstrate punctuality and commitment to learning				
Textbook	Krishan K. Chawla, Composite Materials: Science and Engineering, 4 th ed. 2019. ISBN 978-3-030-28982-9, ISBN 978-3-030-28983-6 (eBook)				
Instructor Information					
Name	Othman Y. Alothman	Saleh Alkarri			
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Office Hours	Mon. and Wed.: 12:30 -02:00 pm or by appointment				
Exam Dates			Grading		
Midterm Exam	Wed 20 th Feb, 2025	Projects and Presentations	15%	Tutorial and Quizzes	15%
Projects and Presentations	Wed 09 th Apr, 2029	Midterm Exam	30%	Final Exam	40%
Final	Wed 21 st May, 2025 (08:00 am) (Tentative)				

Course Content	
1	Introduction and classes of material
2	Physical and Chemical properties
3	The Concept of Reinforcement
4	Composite Matrices (Polymer, Metal, Ceramic)
5	Production/fabrication processes
6	Mechanical, Chemical and Physical bonding
7	Tests and Measurements of Interfacial bonding strength
8	Surface roughness and Crystallography
9	Carbon Fiber/Carbon Matrix Composites
10	Applications of Composites