

Module Title and Purpose	Module Title, Code COMPOSITE MATERIALS FOR APPLICATIONS IN ENGINEERING, 30-MKI-810 Obligatory professional Aims/Goals of the Module The course provides practical methods and theoretical tools that are necessary for leading design structures formed from composite materials, in terms of constructive and production aspect. The course will discuss the mechanical properties of composite materials (composite), and how these properties are affected by the microscopic structure of the material and production techniques; it will also provide an overview of the strengths and weaknesses of composite materials as well that should be used or treated in the design of constructive elements. Practical applications will be submitted for calculation of constructive elements related to civil engineering, aeronautics, marine and industrial engineering.
Module Delivery	Contents The composition, structure and properties of the main types of fibers and matrices used in the manufacture of composite materials, the basic geometric structure and composition of composite materials. Manufacturing techniques for composite materials and structures of composite materials. The experimental characterization of the properties of composite materials with respect to current standards. Elastic properties of composite materials. Flexible composite plates (classical theory of laminates) and its applications. Resistance loss criteria for composite materials. Examples of applications of composite materials in various fields of structural engineering, with particular reference to the problems of the material depending on the specific field of application (civil engineering, aeronautics, marine and industrial engineering). The application of finite element method of composite structures (Composite). Literature [1] Barbero, E.J., Introduction to Composite Materials Design, Editore: Taylor & Francis Group, ISBN: 9781420079159 [2] V.V. Vasilev, E. V. Morozov, Mechanics and Analysis of composite materials, Editore: Elsevier, ISBN: 978-0-08-098231-1 [3].N. Reddy, Mechanics of Laminated Composite Plates and Shells: Theory and Analysis, Editore: Taylor & Francis, Anno edizione: 2003, ISBN: 9780849315923 Teaching and Learning Methods: Lectures, exercises, consultations and graphic works Total Contact Hours: 28+28+3=59 Hours

	Range of other Learning Methods: Total Study Hours: 66 Hours Total contact and study hours: 125 Hours
Module Assessment	Module Learning Outcomes : Upon successful completion of the course students will gain knowledge of composite materials and be able to apply this knowledge in dimensioning of structures with these materials.
	Assessment Methods: Participation, Project, Mid-term test, Written Exam and Oral Exam Number, type and method of evaluation : Participation 10 % , Project 20% , Mid-term test 20% ,Written Exam 20% ,Oral Exam 30% , Total 100%
Module Management	Credit Points and Duration 5 ECTS, One semester, (III)
	Contact Person
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