Title and Purpose	**1. Module Title, Code** **ADVANCED TECHNOLOGY CONCRETE 30-TBA-801** **Obligatory professional**
	2. Aims / Goals of the Module Acquisition of academic expertise and industry, gaining knowledge of the advanced technology of concrete, including concrete advanced high resistance, the combination of its reinforcement fiber of traditional materials and synthetic considering the latter aspects of sustainability, as in terms of theory and practical application. This course aims to develop the next generation of top construction professionals working in the production of concrete, execution and design.
Module Delivery	**3. Contents:** Review of cement including blended cement production, chemical composition, physical processes of hydration and modern methods of analysis. Review the types of additives, including dust and volcanic ash, slag and silica from the highest oven. Hydration and physical processes and chemical interactions; effects on the properties of concrete, different lacquers. Methods of testing; applications; mixing cement mixer. Review of species; mineralogy and petrografia; for aggregate research; Aggregate profit in practice; production of artificial aggregates; sampling and testing; effects on concrete properties. Reologjia, pastries cement, concrete and mortar; The workability, segregation and flow. Theory and principles governing correct placement and compaction of the concreteAdjusting plastic surfaces able plastic shrinkage; Exothermic characteristics; Early thermal changes; the development of resistance; maturity, acceleration of maturity; evaluation of the deployment time; concreting in hot weather and cold. resistance; deformation under load; flexibility; delay; shrinkage and other changes in volume. Thermal properties. And durability of concrete and concrete structures. The concept of sustainability; The pore structure and transport processes; corrosion of reinforcement; fire resistance; mergers damage from freezing; Attack from sulphates; Alkali-silica reaction; delayed formation of etringjitit; methods of providing sustainable concrete; Short-term tests to assess the long-term behavior. Mix design. Lightweight concrete, concrete without fine aggregates, concrete aggregates and concrete light foamy Concrete with high resistance; high-strength concrete; high density and radiation protection; polymer concrete; fiber reinforced concrete; Mortar; recycled concrete. Spray concrete; underwater concrete; lacquers thin, massive concrete; compressed concrete self; concrete pumps; mbajtws liquid concrete structures; Vacuum process; tw coverage and concrete surface treatments. Types of factories; efficiency of truck-mixer; the effects of agitation / for extended; Quality control: the acceptance and compliance. Exposed concrete. Final types of surfaces; production methods.
	4. Indicative Reading List: [1]. Kiço Negovani, N. Verdho; Konstruksionet prej betonit te armuar, Tirane;

	[2] Tomičić, I. Betonske konstrukcije. Zagreb:, 1996.; [3] Tomičić, I. Priručnik za proračun armiranobetonskih konstrukcija. Zagreb : Društvo Hrvatskih građevinskih konstruktora, 1996.; [4] A. Ghali, R. Favre, M. Eldbodag: Concrie Structure 2000.
	5. Teaching and Learning Methods: Lectures, autovizuele, classroom, exercises, consultations, 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	**6. Module Learning Outcomes :** Students trained for calculating prestressing of concrete structures.
	7. Assessment Methods: Participation in exercises and lectures, practical training, project, written examination, oral examination Number, type and weighting of elements: Participation 8%, practical classes: 20% Project: 20%, written exam 26%, oral exam 26% , **Total 100%**
Module Management	**8. Credit Points and Duration** 5 ECTS, one semester, (III)
	9. Contact Person
Compiled by:	**N. Plana**
Date	