



UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Architettura		
ACADEMIC YEAR	2021/2022		
BACHELOR'S DEGREE (BSC)	ARCHITECTURE AND PROJECT IN BUILT SPACE		
SUBJECT	STATICS		
TYPE OF EDUCATIONAL ACTIVITY	B		
AMBIT	50107-Ingegneria della sicurezza e protezione delle costruzioni edili		
CODE	06636		
SCIENTIFIC SECTOR(S)	ICAR/08		
HEAD PROFESSOR(S)	BENFRATELLO SALVATORE	Professore Associato	Univ. di PALERMO
OTHER PROFESSOR(S)			
CREDITS	8		
INDIVIDUAL STUDY (Hrs)	136		
COURSE ACTIVITY (Hrs)	64		
PROPAEDEUTICAL SUBJECTS			
MUTUALIZATION			
YEAR	2		
TERM (SEMESTER)	1° semester		
ATTENDANCE	Not mandatory		
EVALUATION	Out of 30		
TEACHER OFFICE HOURS	BENFRATELLO SALVATORE Monday 12:00 13:30 Ufficio al II piano della sezione strutture del Dipartimento di Ingegneria (ex DICAM). Tuesday 12:00 13:30 Ufficio al II piano della sezione strutture del Dipartimento di Ingegneria (ex DICAM). Wednesday 12:00 13:30 Ufficio al II piano della sezione strutture del Dipartimento di Ingegneria (ex DICAM). Thursday 12:00 13:30 Ufficio al II piano della sezione strutture del Dipartimento di Ingegneria (ex DICAM). Friday 12:00 13:30 Ufficio al II piano della sezione strutture del Dipartimento di Ingegneria (ex DICAM).		

DOCENTE: Prof. SALVATORE BENFRATELLO

PREREQUISITES	Elementary physics basics: equilibrium, kinematics, rigid body.
LEARNING OUTCOMES	<p>Knowledge and understanding Acquisition of the fundamental instruments for the knowledge of the behavior of existing structures and for their design. Applying knowledge and understanding Ability to apply the physical-matematical models through which sketching the structures in order to learn how to model and design them. Making judgements Acquiring a critical approach to independently evaluate the bearing ability of an existing structure. Communication skills Ability to exhibit the fundamentals for the safety evaluation of an existing structure. Learning skills Ability to recognize the critical aspects of an existing structure.</p>
ASSESSMENT METHODS	Written test preparatory to oral examination. The final grading is defined in the following way: excellent (30-30 with laude), very good (26-29), good (24-25), satisfactory (21-23), passing grade (18-20).
EDUCATIONAL OBJECTIVES	To develop the ability to critically identify and design real structural problems by appropriately adopting mathematical models in such a way to learn a structural key to be applied for all existing structure.
TEACHING METHODS	Frontal lectures and excercises (lectures and excercises could be held by distance teaching depending on COVID-19 evolution).
SUGGESTED BIBLIOGRAPHY	F. Giambanco, Lezioni di statica, Dario Flaccovio, EAN 9788877582294 C. Comi, L. Corradi Dell'Acqua, Introduzione alla meccanica strutturale, McGraw Hill, ISBN: 8838615411

SYLLABUS

Hrs	Frontal teaching
6	Kinematics of free and constrained rigid bodies.
2	Internal actions and their diagrams.
6	Continuum mechanics.
10	De Saint-Venant beam theory.
4	Structural analysis methods.
4	Structural safety.
Hrs	Practice
2	Kinematics of free and constrained rigid bodies.
16	Evaluation of constraints reactions, of internal actions and their diagrams.
4	De Saint-Venant beam theory.
10	Implementation to real cases.