

FACULTY OF **ENGINEERING**

DEGREE COURSE: **CIVIL AND ENVIRONMENTAL
ENGINEERING BS**

SUBJECT: DESIGN CONSTRUCTION

LECTURER: LUCIO BONAFEDE

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OBJECTIVES

This course will:

1. analyze the main techniques of building industrialization, starting from an historical view of building systems evolution,
2. examine the different building materials in relation with the building types.
3. investigate the problems of quality certification, security and sustainability.

CONTENTS

Evolution of historical building construction systems
Building industrialization with reference to materials
Industrialization of the different building types
Buildings details
Assemblage formalities
The realization of cover
Building a bridge
Industrialization and sustainability
Certification of quality products

LEARNING OUTCOMES

At the end of the course the student will:

- have gained some basic knowledge about industrialized building design (with particular attention to the use of innovative solutions),
- have gained some basic knowledge of the industrial process with regards to infrastructure and buildings,
- be able to analyze any problems and solutions from an economic perspective
- The student must be able to evaluate the main issues with regards to industrialization with reference to the different building types, with a particular attention to materials.

ASSESSMENT

Written exam: multiple choice and open questions

RECOMMENDED TEXTBOOKS

- Arthur Lyons, *Materials for Architects and Builders*, Routledge, 2010
ISBN-13: 978-1856175197

Italian language

- AA.VV., *Manuale di Progettazione Edilizia*, Hoepli Ed., Milano 1995;
- Belz, Rosele Hoffmann, *Atlante della Muratura* Utet Torino 1998
- De Angelis A. *Guida ai sistemi costruttivi*. DEI. ISBN: 978-88-496-0791
- Di Sivio M., *Atlante della Pietra*, UTET, Torino 2004
- Herzog, T., Krippner R., Lang W., *Atlante delle Facciate*, UTET, Torino 2005
- Kind- Barkauskas F., Polonj S., *Atlante del Cemento* Utet 1998
- Nattarer J., Herzog T., Volz M., *Atlante del legno*, UTET, Torino 2006
- Schittich C., Staib G., Balkow D., *Atlante del vetro*, UTET, Torino 2006
- Schulitz H., Sobek W. Habermann K., *Atlante dell'acciaio*, UTET, Torino 2002
- Schunk, Finke, Jenisch, Oster, *Atlante dei tetti*, UTET, Torino 2005

Other languages:

- Kind-Barkauskas F., Polonj S., *Beton ATLAS* Birkhäuser Verlag GmbH
ISBN-13: 978-3764366858
- Belz, Rosele Hoffmann, *Mauerwerk Atlas*, 1996 München by Institut für internationale Architektur-Dokumentation.
- Nattarer J., Herzog T., Volz M., *Holzbau Atlas Zwei*, Birkhäuser Edition Detail
ISBN-13: 978-3764369842

Magazines:

- Detail
 - Materia
 - The Plan
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