Course guide
320181 - DJ - Jacquard Design

Unit in charge: Terrassa School of Industrial, Aerospace and Audiovisual Engineering
Teaching unit: 702 - CEM - Department of Materials Science and Engineering.

Academic year: 2023  ECTS Credits: 6.0  Languages: Catalan

LECTURER
Coordinating lecturer: Mònica Ardanuy
Others: Cano Casas, Francesc

PRIOR SKILLS
It is compulsory to follow the course classes regularly. It is a practical course and the software used to design is only available at the class.

TEACHING METHODOLOGY
Sessions of theory
Sessions of practical work at class

LEARNING OBJECTIVES OF THE SUBJECT
OAG1. To know the possibilities and limitations of Jacquard looms.
OAG2. To know how to choose the best way to design depending on the fabric to manufacture and the loom to use.
OAG3. To be able to design Jacquard fabrics.

STUDY LOAD

<table>
<thead>
<tr>
<th>Type</th>
<th>Hours</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours large group</td>
<td>30,0</td>
<td>20.00</td>
</tr>
<tr>
<td>Hours small group</td>
<td>30,0</td>
<td>20.00</td>
</tr>
<tr>
<td>Self study</td>
<td>90,0</td>
<td>60.00</td>
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</tbody>
</table>

Total learning time: 150 h
CONTENTS

TOPIC 1. JACQUARD MACHINES AND CONFIGURATIONS

Description:
1.1. Introduction and history
1.2. Identification of Jacquard fabrics
1.3. Jacquard machines and implications on the design
1.4. Jacquard templates. Interpretation and implications on the picks

Specific objectives:
OE1. To understand the implications of the Design on the use of the Jacquard machines
OE2. To be able to select the most suitable machine for the design to make

Full-or-part-time: 12h 30m
Theory classes: 5h
Self study : 7h 30m

TOPIC 2. INTRODUCTION TO JACQUARD DESIGN

Description:
2.1. Steps to follow for a Jacquard Design
2.2. Calculations for a Jacquard Design
2.3. Structures of weaves of one face
2.4. Structures of weaves of two or more faces

Specific objectives:
OE3. To know the effects of the number of warps and wefts used.
OE4. To know the effects of the weaves used.

Full-or-part-time: 25h
Theory classes: 10h
Self study : 15h

TOPIC 3. WEAVE DESIGN

Description:
3.1. Fundamental weaves and its application
3.2. Complex weaves. Double face fabrics
3.3. Weaves with more than one warp and/or weft
3.4. Unitary, Binary, ternary combinations

Specific objectives:
OE5. To know the steps to generate a design

Full-or-part-time: 37h 30m
Theory classes: 15h
Self study : 22h 30m
# TOPIC 4. PROCESS OF JACQUARD DESIGN

**Description:**
4.1. Previous calculations

**Specific objectives:**
OE5. Two know the steps to generate a design

**Full-or-part-time:** 37h 30m  
Laboratory classes: 15h  
Self study : 22h 30m

## TOPIC 5. ANALYSIS OF JACQUARD FABRICS

**Description:**
4.1. How to tackle a design in function of one initial concept, from a picture or from a fabric.

**Full-or-part-time:** 12h 30m  
Laboratory classes: 5h  
Self study : 7h 30m

## TOPIC 6. CAD SIMULATION

**Description:**
4.1. How to tackle a design in function of one initial concept, from a picture or from a fabric.

**Specific objectives:**
OE6. To be able to select the most appropriate method to make a project for a specific design.

**Full-or-part-time:** 25h  
Laboratory classes: 10h  
Self study : 15h

# GRADING SYSTEM

Written tests: 30%  
Other deliveries: 70% (20% first half of the term, 50% second half of the term)  
Unsatisfactory results of the written test may be repeated by a written test to be performed on the day set for the final examination. This test can be accessed by all students with a grade below 3.0 of the assessment act (with a grade between 0 or 10). The grade obtained will replace the initial grade as long as it is higher and will have a maximum grade of 5.0.
BIBLIOGRAPHY

Basic:

Complementary: