320082 - PAA - Dressing and Finishing Processes

Coordinating unit: 205 - ESEIAAT - Terrassa School of Industrial, Aerospace and Audiovisual Engineering
Teaching unit: 702 - CMEM - Department of Materials Science and Metallurgy
Academic year: 2019
Degree: BACHELOR’S DEGREE IN TEXTILE TECHNOLOGY AND DESIGN ENGINEERING (Syllabus 2009).
ECTS credits: 6
Teaching languages: Catalan, Spanish

Teaching staff
Coordinator: Riba Moliner, Marta
Others: Casadesus Fuste, Marta
González López, Laura

Prior skills
Previously studying the subject Materials for Textile Product Design is highly desirable.

Degree competences to which the subject contributes

Specific:
1. TEX: Applied knowledge of sizing and finishing processes
   
   CE23. TEX: knowledge of unitary operations of preparing, dyeing and blanching
   
   CE25. TEX: Knowledge of the chemical compound behaviour for the for the textile ennoblement.

Transversal:
3. EFFICIENT ORAL AND WRITTEN COMMUNICATION - Level 3. Communicating clearly and efficiently in oral and written presentations. Adapting to audiences and communication aims by using suitable strategies and means.

Teaching methodology

• Presential lecturing sessions for delivery of the topics with active student involvement.
• Presential sessions of practical work (Mandatory attendance)
• Self-directed study and preparation of reports. Cooperative learning.
• Preparation and completion of assessable teamwork activities.
  • Oral and written presentation work performed individually or in group

Learning objectives of the subject

GLO1. To become professionals in the design of chemical and mechanical finishing processes, the management of quality and safety in industrial processes, and the criteria for international trade
GLO2. To acquire a sound knowledge of finished textiles manufacturers, the technical specifications for the products and their applicability to other textile processes.
GLO3. To know the existing industrial network of dye and finish enterprises, the technical specifications for finished textile products, and the requirements for the integral design of a textile production process.
GLO4. To develop the specific and transversal skills associated to the academic work.
## Study load

<table>
<thead>
<tr>
<th>Total learning time: 150h</th>
<th>Hours large group: 30h 20.00%</th>
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<tbody>
<tr>
<td></td>
<td>Hours medium group: 0h 0.00%</td>
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<td></td>
<td>Hours small group: 30h 20.00%</td>
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<td></td>
<td>Guided activities: 0h 0.00%</td>
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<td></td>
<td>Self study: 90h 60.00%</td>
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</table>
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## Content

<table>
<thead>
<tr>
<th><strong>Topic 1:</strong> Fundamentals of the mechanical and chemical finishing operations</th>
<th><strong>Learning time:</strong> 20h</th>
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</thead>
<tbody>
<tr>
<td><strong>Description:</strong></td>
<td>Theory classes: 6h</td>
</tr>
<tr>
<td>1.1. Concept of the mechanical and chemical finishing operations</td>
<td>Laboratory classes: 2h</td>
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<tr>
<td>Significance to textile design.</td>
<td>Self study: 12h</td>
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<tr>
<td>1.2. Main effects contributed by finishing operations.</td>
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<td>1.3. Finishes application systems.</td>
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<td>1.4. Drying and condensation/polymerization processes.</td>
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<tr>
<td><strong>Related activities:</strong></td>
<td>RA0, RA1, RA2</td>
</tr>
<tr>
<td><strong>Specific objectives:</strong></td>
<td>OE3. Knowledge of criteria for reproducibility of different methods of application of preparations.</td>
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<td></td>
<td>OE4. Evaluation touch organoleptic and practical effects on textile sizing.</td>
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<td>OE5. Influence of finishing on color.</td>
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<tr>
<th><strong>Topic 2:</strong> EFFECT DESIGN BASED ON CONDITIONING FINISHES</th>
<th><strong>Learning time:</strong> 36h</th>
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<tbody>
<tr>
<td><strong>Description:</strong></td>
<td>Theory classes: 8h</td>
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<tr>
<td>2.1. Unit effects of finishes: stiffening, antislip, run-proof, antipilling, antisnagging, antipicking, matting and softening finishes.</td>
<td>Laboratory classes: 10h</td>
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<tr>
<td>2.2. Combined effects of finishes.</td>
<td>Self study: 18h</td>
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<tr>
<td>2.3. Measurement standards.</td>
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<tr>
<td><strong>Related activities:</strong></td>
<td>RA1, RA2</td>
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</tbody>
</table>
### Topic 3: DESIGN OF WASH AND WEAR FINISHES

**Learning time:** 28h  
Theory classes: 6h  
Laboratory classes: 6h  
Self study: 16h

**Description:**  
3.1. Fields of use and target textile products for wash and wear with low free-formaldehyde finishes: shrink-proof, crease-proof, "wash and wear", easy ironing.  
3.2. Ecotoxicological characteristics related with finishes.

**Related activities:**  
RA4, RA5

**Specific objectives:**  
Apply acquired knowledge for planning trials of finishing wash and wear.  
OE8. Learn to identify and implement quality controls required by the final destination of the finished article.  
OE9. Criteria for the submission of results, effects on international trade.

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### Topic 4: FINISHES FOR TECHNICAL TEXTILES

**Learning time:** 42h  
Theory classes: 8h  
Laboratory classes: 10h  
Self study: 24h

**Description:**  
4.2. Bacteria and fungi: antimicrobial (bactericidal and fungicidal), deodorizing and insecticide (moth-proof) finishes.  
4.3. Behaviour of textile materials in fire.  
4.4. Fundamentals of Individual Protection Equipment (IPE)  
4.5. Flame retardation mechanisms.  
4.6. Fire-proofing systems.  
4.7. Fire-proofing of textile fibres.  
4.8. Standards and methods for testing effects.

**Related activities:**  
RA5, RA6, RA7

**Specific objectives:**  
OE10. Knowledge of technical fabrics and fields of application.  
OE11. Apply knowledge of the effects of different articles repellencia  
OE12. Get quality controls to determine the effects of repellency contributed textiles  
OE13. Apply theoretical knowledge about Fireproofing in different tissues  
OE14. Learn the controls to determine the quality of the effects of Fireproofing contributed textiles
Students will be assessed in a continual manner for self-directed learning and team work. The presence to practical work sessions is mandatory. Only 2 justified absences will be accepted. Knowledge and skill acquisition will be assessed as follows:

- Oral and written tests (First evaluation: 30%, Second evaluation: 30%)
- Laboratory: 20%
- Other deliveries: 15%
- Transversal competence (effective oral and written communication): 5%

Students who have suspended the first partial exam may choose, by communicating to the teacher, a review of recovery. Recovery will perform the first exam is written with a prueba, the second day of the exam, después del mismo, con calificación of 0 to 5. The note Obtener sustituirá the initial calificación long as it higher

The teacher will be able to request at any moment, a justification of the conclusions of the reports has hecho the students to demonstrate the active participation of students.

For those students who meet the requirements and submit to the reevaluation examination, the grade of the reevaluation exam will replace the grades of all the on-site written evaluation acts (tests, midterm and final exams) and the grades obtained during the course for lab practices, works, projects and presentations will be kept. If the final grade after reevaluation is lower than 5.0, it will replace the initial one only if it is higher. If the final grade after reevaluation is greater or equal to 5.0, the final grade of the subject will be pass 5.0.
**Bibliography**

**Basic:**


**Others resources:**