



NATIONAL UNIVERSITY OF ENGINEERING
COLLEGE OF CHEMICAL AND TEXTILE ENGINEERING
TEXTILE ENGINEERING PROGRAM

PIT60 – LABORATORY OF TEXTILE CHEMICAL PROCESSING III

I. GENERAL INFORMATION

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| CODE | : PIT60 Laboratory of Textile Chemical Processing III |
| SEMESTER | : 10 |
| CREDITS | : 1 |
| HOURS PER WEEK | : 3 (Laboratory) |
| PREREQUISITES | : PIT49 Textile Chemical Processing II PIT50 Laboratory of Textile Chemical Processing II |
| CONDITION | : Compulsory |

II. COURSE DESCRIPTION

This course is complementary to theory course PIT59 Textile Chemical Processing III. Students develop skills for applying different finishing processes for obtaining fabric with the desired characteristics and properties. In this laboratory course, students experimentally verify the theoretical concepts and methods presented in course PIT59 Textile Chemical Processing III.

III. COURSE OUTCOMES

At the end of the course, students:

1. Properly select equipment and instruments according to the desired fabric finishing.
2. Identify control parameters affecting a textile finishing process.
3. Prepare chemical solutions for obtaining proper finishing.
4. Evaluate obtained results according to AATCC norms.
5. Use Datacolor for evaluating color changes owed to process and chemical product application.

IV. COURSE CONTENTS

Students carry out the following experimental work:

1. Finishing Process by Fabric Exhausting
2. Mercerized and Causticated Processes
3. Physical Finishing. Drying for Fabric Ennobling
4. Softening and Anti-Static Finishing
5. Siliconized and Wicking Finishing
6. Non-Shrinking Finishing with Resins
7. Permanent-Pressing Finishing with Resins
8. Hydrophobe Finishing

9. Fire Retardant Finishing
10. Anti-Microbial and Anti-Moth Finishing
11. Ultraviolet Protection Finishing

VI. METHODOLOGY

There is a guide for every laboratory experience students should read before the experience. At the beginning of the experience, an entrance test is taken to verify the preparedness of students. Students carry out the experience working by teams and following guide indications and faculty advice. At the end of the experience, students submit a report summarizing main results, analysis and conclusions. Student active participation is promoted.

VII. GRADING SYSTEM

The Final Grade (FG) is calculated with the following formula:

$$\text{FG} = (9 \text{ PP} + 1 \text{ C1} + 2 \text{ C2}) / 12$$

PP: Average grade of five laboratory experience work and report

C1: Average grade of entrance quizzes

C2: Average grade of final quizzes

VIII. BIBLIOGRAPHY

1. TEXTILE CHEMICAL PROCESSING Laboratory Guide
National University of Engineering, Lima, Peru, 2010
2. **VIDAL Salem**
Textile Dyeing. Concepts and Technologies
3. **COSTA Mirko**
Textile Fibers and Their Dyeing