

Code: 1487 Industrial Project**Degree:** 2nd cycle – Food Science and Engineering**Curricular Year:** 2nd**Credits:** 6 ECTS**Semester Course:** 1st**Compulsory****Language:** Portuguese/English**Responsible:** Isabel Maria Nunes de Sousa**Other lecturer(s):** António Pedro Louro Martins and Margarida Gomes Moldão Martins**Web Site:** <http://www.isa.utl.pt/home/node/3844>**1. Contact hours:****Lecture/Practicals 70 Others 14 Total 84****2. Objectives:**

Understand the complexity of the Project design and plant lay-out in a Food Industry. To be familiarised with the implications of commercial strategy, financing opportunities and official permits to the success of an investment in Food Industry.

Be aware of the different types of equipment available and the difficulties of the selection process.

Decide the product flow to calculate the size of the equipment involved in the major unit operations.

Evaluate the viability of the investment

3. Programme:

General concepts. Project relevance to Food Engineering: the importance of Market analysis; the commercial strategy; opportunities. Project organization. Coordination and Project Implementation. Different steps: Preliminary Program and Project's team. Constraint analysis and territorial confinement. Previous study. Technique-economical viability. Architecture Project and Permits. Financial opportunities. Execution Project. Working permits

Strategic planning. Production flow adjustment to the market needs. Technology decision, technology layouts and mass balances. Equipment selection. Layout. Non-productive functions (management, administration, commercial/distribution). Costs prevision

Case studies: Technical visits to Industrial layouts

Practical exercise: Project conception at the Preliminary study level for an Industry simulation

4. Bibliography:**Main Bibliography**

Perry's Chemical Engineers' Handbook, Eighth Edition by Don W. Green (Author), Robert H. Perry (Author) 2007

Ullmann's Chemical Engineering and Plant Design, 2 Volumes Wiley-VCH (Editor) ISBN: 978-3-527-31111-8 1399 pages 2004

Process Development: From the Initial Idea to the Chemical Production Plant G. Herbert Vogel ISBN: 978-3-527-31089-0 492 pages 2005

Other Bibliography

Information specific to the targeted Food Industry

5. Assessment:

A test assessing the knowledge about the issues discussed on the lectures accounting for 50% of final grade

A group work developing a Preliminary study to a specific plant industry lay-out, after designing the commercial strategy and assessing viability of the investment after, accounting for 50% of final grade.

6. Estimated Workload:

168	Hours
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7. Last Update:

19/7/2010
