**Code: 1524** **Oil and Fat Technology**
**Degree:** 2nd cycle – Food Science and Engineering
**Stream:** Food Processing
**Curricular Year: 2nd** **Semester Course: 1st**
**Credits: 6 ECTS** **Optional**
**Language:** Portuguese/English
**Responsible:** Maria Suzana Leitão Ferreira Dias Vicente
**Other lecturer(s):** -
**Web Site:** http://www.isa.utl.pt/home/node/3852

**1. Contact hours:**
**Lectures** 42 **Practicals/Laboratory** 28 **Others** 14 **Total** 84

**2. Objectives:**

Learning the basic concepts of the Technology of Oils and Fats, to prepare the student to work in the different oils and fats industries (olive oil mills; vegetable and animal fats extraction units; refineries; margarine and biodiesel plants).

**3. Programme:**

Definition of oil and fat, physical, chemical and functional properties of fats; degradation reactions of oils and fats and their technological consequences. The importance of the fats in human nutrition. Olive oil: definition, commercial types, extraction methodologies and equipment used. The low and high content oil-bearing seeds: extraction techniques and equipment. Animal oils and fats: extraction techniques and equipment. Refining of crude oils and fats: alkaline and physical refining, unit operations and equipment used. Modification techniques of fats: fractionation, hydrogenation and interesterification. Margarines: definition and commercial types; production techniques. Frying of fats.
New trends in the technology of oils and fats: production of structured lipids by chemical and lipase-catalysed reactions; biodiesel production.

**4. Bibliography:**

**Main Bibliography**

Boskou, D.: 1998, Química y Tecnologia del Aceite de Oliva, 291 p.p., AMV Ediciones, Mundi– Prensa.
Karleskind, A.:1996, Oils & Fats - Manual, Vol.1, 806 p.p., Lavoisier Publishing.

Karleskind, A.:1996, Oils & Fats - Manual, Vol.2, 1572 p.p., Lavoisier Publishing.

**Other Bibliography**

Denise, V. (1982), Le Raffinage des Corps Gras, 243 p.p., Les Éditions des Beffrois - Westhoek – Editions.
Gouveia, J.M.N.B. (1995) Azeites Virgens do Alto Alentejo. Comportamentos Químico, Tecnológico e Sensorial, 570 p.p., Dissertação para obtenção do grau de Doutor na U.T.L.
Hamilton, R. J.; Bhati, A. (1987) Recent Advances in Chemistry and Technology of Fats and Oils, 188 p.p., Elsevier Applied Science - London and New York.

**5. Assessment:**

A = Report on the laboratory techniques for olive oil quality and identity assessment, carried out by the students (10% of the final mark)
B = Oral presentation of a subject under the scope of the course (30% of the final mark).
C = Final exam (60% of the final mark)

**6.** Estimated Workload: 168 Hours
**7.** Last Update: 19/7/2010