

Sheet course ()

Course	MSc IN MECHANICAL ENGINEERING		
Unit	Automotive Technology and Management	Mandatory	<input type="checkbox"/>
		Optional	<input checked="" type="checkbox"/>
Unit scientific area	Industrial and Maintenance Engineering	Category	B

Unit category: B - Basic; C - Core Engineering; E - Specialization; P - Complementary.

Year: 1st	Semester: 2nd		ECTS: 5,0			
Contact time	Total:	T:	TP: 45,0	PL:	S:	OT:

T - Lectures; TP - Theory and practice; PL - Lab Work; S - Seminar; OT - Tutorial Guidance.

Unit Director	Title	Position
Constantino Dias Teixeira	Ph.D.	Invited Assistant Professor

Learning Objectives (knowledge, skills and competences to be developed by students)

(max. 1000 characters)

Students are required to acquire knowledge, not only in the area of the automotive technology but also in the area of the distribution network. The main objective of this subject is to prepare the student for a possible position as manager in the after sales of an automobile concessionaire. Students are therefore required to have a thorough knowledge of the various automotive systems, the processes involved in the management of an after sales department and of the national and international market.

Syllabus

(max. 1000 characters)

PART I: Technology

Engines (revision)

Transmission

Braking system

Polluting emissions

Hybrid vehicles

Problem solving on components of transmission and braking systems.

PART II: Management

Dealer management of the after sales department: management of stocks, after sales service and workforce planning.

Processes involved in after sales service.

National and international market and automotive distribution channels.

PART III: The human factor

Satisfaction and motivation, leadership, conflict management, time management and professionalism.

Demonstration of consistency of the syllabus with the objectives of the course

(max. 1000 characters)

Seeing that the main objective of this subject is to prepare students for a potential position in an after sales department of a concessionaire, the main topics discussed in class concern the technical aspects of the various automotive systems, management and distribution.

Teaching methodology (evaluation included)

(max. 1000 characters)

METHODOLOGY:

The method used in carrying out group practical assignments is based on collaboration between the members of the group. The individual assignments are based on research work.

The theoretical and practical lessons follow the principles of active learning involving and stimulating the students to intervene spontaneously.

EVALUATION:

Written exam

A main individual or group assignment (max. 2 students) about an automotive related subject that is chosen by the student and approved by the lecturer.

Individual research on subjects proposed by the lecturer.

Individual or group reports (max. 2 students) on visits to dealers, importers, manufacturers or seminars.

FINAL EVALUATION: WRITTEN EXAM - 50%; MAIN ASSIGNMENT - 20%; RESEARCH ASSIGNMENTS - 20%;

REPORTS - 10%.

Demonstration of consistency of teaching methods with the learning objectives of the course

(max. 3000 characters)

Students are required to do a number of assignments based on technical automotive aspects, especially the latest technologies and innovations. Students also take part in study visits to a concessionaire, importer and/or manufacturer. Seminars with the presence of outside experts or professionals are arranged so that students can consolidate the theory acquired in the classroom.

Main Bibliography

(max. 1000 characters)

- Gasoline Engine Management, SAE 1st Edition, 1991;
- Diesel Engine Management, Bosch Edition
- Automotive Handbook, SAE International, 5th Edition;
- DUFFY, James E., Modern Automotive Technology, 5th Edition;
- Automotive Electrics & Automotive Electronics, Bosch Edition
- DENTON, Tom, Automobile Electrical and Electronic Systems, 2nd Edition;
- www.howstuffworks.com; www.germancarfans.com; www.bosch.com; www.technologyreview.com and many other references mentioned in the subject powerpoint slides.