MEC 4209 Automotive Engineering (Elective)

Hours per Semester				Weighted Total Mark	Weighted Exam Mark	Weighted Continuous Assessment Mark	Credit Units
LH	PH	TH	CH	WTM	WEM	WCM	CU
45	30	00	60	100	60	40	4

Brief Description of Course:

This course draws concepts from the earlier courses of Thermodynamics offered at Level 1 and Applied Thermodynamics offered at Level 4.It discusses aspects regarding the world of automobiles design, operation and maintenance.

Objectives of the Course:

The objectives of this course are:

- Provide students with a strong knowledge base on combustion engines.
- Provide students with a strong knowledge base on the different components on of an automobile.
- Equip students with background and fundamental knowledge behind the techniques for operating and maintaining automobiles.

Expected Outcomes:

Upon completion of this course, the student should be able to:

- Describe operation of a combustion engine.
- Describe the operation of all automotive components.
- Identify different automobile components.
- Maintain automobile components.

Course Content:

- Combustion engines (2 Hours)
- Carburetion (4 Hours)
- Ignition system (6 Hours)
- Lubrication (4 Hours)

- Cooling system (4 Hours)
- Electrical fundamentals (6 Hours)
- Transmission system (8 Hours)
- Engine design (8 Hours)
- Brake system (4 Hours)
- Chassis and body design (6 Hours)
- **Delivery Methods:**
- The course will be taught by using lectures, tutorials, assignments and examination.

Assessment Methods:

- Course work (assignments and tests) and final examination and their relative contributions to final grade are shown as follows:
- ***Requirement Percentage contribution***
- Course work 40%
- **Total**
- Final examination 60%
- **100%**
- **References:**
- V.A.W. Hillier &Peter Coombes (2004). Hillier's Fundamentals of Motor Vehicle Technology (Book 1). Nelson Thornes. ISBN 0 7487 8082 3
- V.A.W. Hillier (2001). Hillier's Fundamentals of Automotive Electronics. Nelson Thornes. ISBN 0 7487 2695 0
- S.C. Mudd (1986). Technology for Motor Mechanics (3). Edward Arnold. ISBN 0 7131 3277 9
- S.C. Mudd (1989). Technology for Motor Mechanics (4). Edward Arnold. ISBN 0 7131 3252 3
- Automotive Handbook. Robert Bosch GmbH, 1993. ISBN 0 8376 0330 7
- New technologies
- Maintenance
- (4 Hours) (4 Hours)
- D.J. Leeming and R. Hartley (2006). Heavy Vehicle Technology. Nelson Thornes. ISBN 0 7487 0275 X