Heat Exchangers Technology	
School	Engineering and Physical Sciences
Module Leader	Dr Peter Kew
	Dr M. Vrachopoulos
Module Number	B59E4
Credits	12
Assignments	YES
Exams	YES
Student Effort ours	120
Pre-reading/Other Program-related Activities	12 hours
Formal Lectures/Workshop	26 hours
Discussions/Group Activities/Case Studies/Demonstrations	6 hours
Laboratory work	4 hours
Independent Study & Coursework	72 hours

Objectives

The aim of this module is to introduce up-to-date heat exchanger technology and provide skills for their optimisation in design and application.

Subjects

Introduction to Heat Exchangers
Types of Heat Exchanger
Heat Transfer
Fluid flow and pressure drop
Design methods
Computer Aided Design
Content

Content

Heat exchangers are essential components of many energy systems. They are increasingly examined with a view to minimise losses.

This module introduces the student to the various types of heat exchanger which are currently available and outlines the principles which underpin the design of heat exchangers. Design of heat exchangers using manual calculation is a lengthy procedure and it is now usual to use computer packages in the design process. However it is important that those involved in the specification, design and selection of heat exchangers are aware of the

theoretical background.

In this module the range of heat exchanger types is discussed and guidance is given on the choice of heat exchanger type for particular applications. Emphasis is given to the thermal and hydraulic design, however it is noted that the mechanical design cannot be overlooked.
The module is intended to give students a basic understanding of the theory and practice of heat exchanger design and selection. It is designed to take students with at least a rudimentary knowledge of heat transfer and introduce them to the wide range of heat exchangers that are currently available and to give an insight into the procedure for selecting the best heat exchanger type for a particular application. The course will then introduce the theoretical and empirical design procedures that are necessary in order to carry out the detailed thermal and hydraulic design of a heat exchanger. Finally students will use a widely used proprietary design packages (TASC).