UNIVERSITI MALAYSIA PAHANG (UMP)
FAKULTI KEJURUTERAAN MEKANIKAL

Teaching Plan

1	**Course Name**	Air Conditioning and Refrigeration
2	**Semester and Year Taught**	Semester 8 Year 4
3	**Program Level/Category**	Degree/ Elective
4	**Unit**	3 Credits
5	**Prerequisite**	Thermodynamics 2
6	**Teaching Methods**	Lecture: 2 units (2hours X 14 weeks) Tutorial: 1 unit (1 hours X 14 weeks) Laboratory: 0 unit (0 hours X 14 weeks)
7	**Course Synopsis**	The course content covers the topics such as basic heat transfer, and the working fluid thermodynamics, vapour compression and absorption system of refrigeration, psychrometric charts and its use, cooling load calculations, study of air conditioning components, ducting and piping, pumps and fans and blowers, cooling coils and dehumidification process, expansion valves, evaporation and condensation process, temperature control systems; noise and vibration controls in air conditioning. The practical project work will include design and calculate the cooling load requirement of a building air conditioning system using PBL methodology.
8	**Course Outcomes**	By the end of semester, students should be able to: CO1: understand the various concept of air conditioning system for commercial system in building. CO2: understand and analyses the cooling load of the building from moist air properties and mixtures and evaluation using psychrometric chart in vapour compression system. CO3: calculate cooling loads and designing building air conditioning load distribution. CO4: evaluate various processes of humidification and dehumidification, cooling and heating. CO5: analyze a case study of a small design project for an office complex air conditioning system.
10	**References**	1. Arora C.P.2001*, Refrigeration and Air Conditioning*, Second Edition, Mc Graw Hill International Editions, Singapore. 2. Wang S.K. 2000*, Handbook of Air Conditioning and Refrigeration*, Mc Graw Hill International Editions, Singapore. 3. Mcquiston, F. C. dan Parker J. D., 2002. *Heating Ventilation and Air Conditioning: Analysis and Design,* 3rd Ed. John Wiley, New York. 4. Handbook-*Mechanical and Electrical Equipment for Building Handbook Eight Edition 1992, John Wiley & Sons Inc.* 5. Yunus A.C. and Michael A Boles. 1994. *Thermodynamic An Engineering Approach*. 2nd Edition. Singapore: Mc Graw Hill Inc.