FAKULTI PENGURUSAN DAN INDUSTRI HALAL

PROGRAM	**Diploma in Technology Management**
COURSE NAME	**INTRODUCTION ACADEMIC ENGLISH**
COURSE CODE	**ULAB 1032**
CREDIT HOUR	**3**
SYNOPSIS	This course is design to expose students about the basic concepts, practices and the application of mathematics in their daily activity and businesses. Students need to understand the subject so that they are able to apply the business mathematics concepts in the following subjects such as finances and accounting. At the end of this course, students should gain and able to apply the interest concepts in business mathematics activities. Furthermore, students should be able to differentiate and classifies the trade and cash discount, mark up and markdown, instalment payment, and depreciation.
COURSE STRUCTURE	
CHAPTER	**TOPICS**
1	**Introduction** Fundamental concepts of Power Electronics and Application Power Devices, Switching and Related Issues (losses, heat sink, snubber, SOA)
2	**AC-DC Converters (Rectifiers)** Diode Rectifiers, Controlled Rectifiers, Half-wave Single Phase with R load, R-L, and R-with DC Source. Full-wave Single Phase with R, R-L load. Three Phase Rectifier (uncontrolled and controlled rectifiers).
3	**Application of Rectifier: DC Motor Drives** Review of Separately excited DC motor, Speed Control, 4-quadrant operation, Torque-Speed Curve
4	**DC motor Drives: SCR Based** Variable Speed Operation using alpha control. Single & three phase rectifier

5	**DC-DC Converter (Choppers): Design Project 1** Non-isolated DC-DC Converters: Buck, Boost, Buck-boost. Isolated DC-DC Converter: Fly back, Forward, Half-Bridge, Full- Bridge
6	**Application of Chopper: Chopper Based DC Drives** Variable Speed Operation using duty cycle control
7	**Inverter 1. (DC-AC Converters): Design Project 2** Fundamental of frequency conversion, single phase half and full bridge, three-phase inverter
8	**Inverter 2:** Fourier Series and Harmonics (THD), PWM Strategies Voltage and Frequency control, three-phase PWM inverter, Review of Induction Motor
9	**Application of Inverter Circuits:** Torque-Speed Curve, AC Speed control, WVVF operation, Induction motor drives System
References:	1. Daniel W. Hart, Introduction to Power Electronics, Daniel W. Hart, McGraw Hill International Edition, 2011. 2. Mohan, Undeland and Robbins, Power Electronics: Converters, Applications and Design. 2nd Edition, John Wiley and Sons Inc., 1995. 3. Muhammad H. Rashid, Power Electronics: Circuits, Devices & Applications., Prentice Hall, 2003.