

COURSE NAME	COMPUTER PROGRAMMING
COURSE CODE	BENC 1133
CREDIT HOURS	3
COURSE SYNOPSIS	This course cover topics with the following items : Introduction on fundamental of programming in C programming language and problem solving methodology. The fundamentals covered consists of basic programming principles such as syntax, variables, basic data type, operator, rules/condition, looping, function, array, sequences, file, structure and pointer.
LEARNING OUTCOMES	<p>At the end of this course, students should be able to::</p> <ol style="list-style-type: none"> 1 Describe the fundamental principles of C programming language PO1,C1,K 2 Analyse problems and their solutions based on priciples of problem solving and programming techniques. PO2,C4, CTPS3 3 Design and develop well-structured program in C programming language. PO3,C5, CTPS3 4 Construct program using programming principles and algorithms using C programming structure. PO5,A3, TP2 5 Work effectively in groups and present their work in standard engineering report. PO10,A2,LL1
REFERENCES	<ol style="list-style-type: none"> 1. P.J.Deitel and H.M Deitel, C How to Program 6th Edition, Pearson International Edition, USA, 2010 2. Harry H. Cheng, C for Engineers and Scientists An Interpretive Approach, McGRAW-HILL International Edition, USA, 2010 3. Michael A. Vine, C Programming 2nd Edition for The Absolute Beginner,Thomson Course Technology, USA, 2008.

COURSE NAME	LOGIC CIRCUIT
COURSE CODE	BENM 1143
CREDIT HOURS	3
COURSE SYNOPSIS	This subject aims to provide the students with a thorough understanding of the principles and practical aspects of modern digital circuits and systems. It will cover the following topics: number systems and codes, logic gates and Boolean algebra, combinational logic circuits, MSI logic circuits and flip flops, and integrated circuit logic families.
LEARNING OUTCOMES	<p>At the end of this course, students should be able to::</p> <ol style="list-style-type: none"> 1 Apply and solve problem involving the basic concepts related to digital systems. PO1, C3, K1 2 Analyze and solve the calculation and conversions related to various number systems. PO2, C4, CTPS3 3 Classify optimized combinational and sequential logic circuits. PO2, C4, CTPS3 4 Design and develop performance of sequential logic circuits. PO3, C5, CTPS4 5 Present assignment by managing relevant information from multiple sources PO9, A3, CS4
REFERENCES	<ol style="list-style-type: none"> 1. Thomas L. Floyd, <i>Digital Fundamentals</i>, Prentice Hall, 2010. 2. Ronald J Tocci, <i>Digital Systems, Principles and Applications</i>, Prentice Hall, 2011. 3. Roger L. Tokheim, <i>Digital Electronics, Principles and Applications</i>, Mc Graw Hill. 4. Albert, Malvino and Donald Leach, <i>Digital Priciples and Applications</i>, Mc Graw Hill.

COURSE NAME	MICROPROCESSOR TECHNOLOGY
COURSE CODE	BENM 2123
CREDIT HOURS	3
COURSE SYNOPSIS	Topics covered in this subject includes the introduction to microprocessor-based system, the internal and software model of the microprocessor, the assembly language programming design and development, the microprocessor device specification and its related configuration, and also the design configuration of the memory and input/output system interfacing.
LEARNING OUTCOMES	<p>At the end of this course, students should be able to:</p> <ol style="list-style-type: none"> 1 Demonstrate the fundamental concepts of designs and operations of microprocessor. PO1, C3, K1 2 Analyze the interfacing circuit required for memory and input/output system design. PO2, C4, CTPS3 3 Develop the assembly language program needed in a microprocessor-based system. PO3, C5, CTPS4 4 Evaluate and design the circuit to interface the programming with hardware and microprocessor. PO4, C6, CTPS5 5 Study the impact of various microprocessor problems on the society at large. PO7, A3, EM2 6 Study the needs for, and ability to engage in independent and life-long learning. PO11, A3, LL2
REFERENCES	<ol style="list-style-type: none"> 1. M. M. Ahmad Zabidi, Sistem Terbenam Dengan Mikropemproses 68000 Penerbit UTM Press, 2011. 2. M. Rafiquzzaman, Microprocessor Theory and Applications with 68000/68020 and Pentium, 1st Edition, John Wiley & Sons, 2008. 3. P. Godse & D. A Goose, Microprocessor, Microcontroller and Applications, 3rd Edition, Technical Publications, 2008. 4. J. R. Gibson, ARM Assembly Language – an Introduction, 2nd Edition, ARM Limited, 2007.

COURSE NAME	DIGITAL SYSTEMS
COURSE CODE	BENM 2133
CREDIT HOURS	3
COURSE SYNOPSIS	This course provides students solid theoretical to the sequential logic circuits. It also covers the Introduction to computer memory, microcomputer systems and programmable logic devices. Student will learn the topics on latches and Flip-flops, Counters, Shift Registers, Sequential Logic Design, Memory Devices, Programmable Logic Devices and Introduction to Microprocessors, Computer and Buses.
LEARNING OUTCOMES	<p>At the end of this course, students should be able to::</p> <ol style="list-style-type: none"> 1 illustrate the operation of either basic operation of sequential logic or basic microprocessor systems or computer memory systems or PLD systems. PO1,C3,K 2 distinguish the formulation of alternative problem for digital systems consists of finite state machine and counter. PO2,C4,CTPS3 3 design the digital systems using optimized combinational and sequential logic systems. PO3,C5,CTPS5 4 report project scheduling by managing relevant information from multiple sources PO9,A3,CS4
REFERENCES	<ol style="list-style-type: none"> 1. Charles R. Kime, <i>Logic and Computer Design Fundamentals</i>: 4th Edition, prentice Hall, 2008 2. Thomas L. Floyd, <i>Digital Fundamentals</i>: 10th Edition, Prentice Hall, 2009 3. Ronald J. Tocci, <i>Digital Systems: Principles and Application</i>: 11th Edition, Pearson, 2011

COURSE NAME	MULTIMEDIA TECHNOLOGY AND APPLICATION
COURSE CODE	BENC 4173
CREDIT HOURS	3
COURSE SYNOPSIS	This course prepares the students with basic concept of multimedia, technology and the importance of multimedia application. This subject also introduces the students to techniques and tools related with the creation of multimedia application and explore the current issues related to multimedia technology. It covers the topics introduction to multimedia technology, graphic and image data representations, audio technology, video technology and multimedia systems.
LEARNING OUTCOMES	<p>At the end of this course, students should be able to:</p> <ol style="list-style-type: none"> 1 Explain the representation of multimedia data and coding principles behind the multimedia standards (for image, audio and video). PO1,C2,K 2 Analyse the existing multimedia standards to solving a problem. PO2,C4, CTPS3 3 Design and develop the multimedia application based on a given requirement. PO3,C5, CTPS3 4 Present the given task using appropriate learning material that related to multimedia system. PO11,A2,LL1
REFERENCES	<ol style="list-style-type: none"> 1. K. S. Thyagarajan, "Still Image and Video Compression with MATLAB", Wiley, 2011.2. Harry H. Cheng, C for Engineers and Scientists An Interpretive 2. Jeniffer Burg, "The Science of Digital Media", Pearson, 2009. 3. Yue Ling Wong, "Digital media Primer", Pearson, 2009. 4. Ze-Nian Li & Mark S.Drew, "Fundamentals of Multimedia", Pearson/Prentice Hall, 2004.