COURSE OUTLINE

Course Code: MCCM 1163
Course Name : Trends in ICT Applications and Systems
Total Contact Hours: 45 hours
Course Pre-requisite: None

SYNOPSIS

To introduce the current and upcoming technological knowledge and trends in ICT applications and systems. This includes (but not limited to) hardware, software and creative contents. Students will be exposed to various kinds of designs, developments, maintenance of hardware and software technology products and applications which include telecommunications, photonics, sensors and transducer. Business activities which cover multimedia content creation, processing, packaging and aggregation, post production, animation and virtual reality applications are also covered. By the end of this subject, it is hoped that students have much clearer picture of the technology involves in hardware, software and creative contents which would enable the advancement of their proposed idea.

LEARNING OUTCOMES

By the end of the course, students should be able to:

No.	Course Learning Outcome	Programme Learning Outcome(s) Addressed	Assessment Methods
1	Ability to understand and appreciate the latest and emerging hardware, software and creative contents technology.	**PO1(C2, P2)** **P03(CS1, CS2, CTPS1, CTPS2)**	ASG, Pr
2	Ability to understand the various state-of-the-art Wireless Communication Technologies and Applications	**PO1(C4, A3)** **P03(CS3, CTPS3, KK1)**	ASG, Pr
3	Ability to understand various hardware and software platforms for specialized applications	**PO1(C5, P4, A1)** **P03(CTPS3, KK2)**	ASG, Pr
4	Ability to appreciate service oriented software engineering and aspect oriented software development	**PO1(C5, P4)** **P03(CTPS3, KK3)**	ASG, Pr
5	Ability to understand various multimedia and creative content development and applications	**PO1(C5, P4, A3)** **P03(CTPS3, KK3)**	ASG, Pr
T – Test, ASG -Assignment, PR – Project ; Q – Quiz, LB – Lab, Pr – Presentation, F – Final Exam			

STUDENT LEARNING TIME

Teaching and Learning Activities	Student Learning Times (Hours)
1. Direct Learning	42
- Lecture	12

	- Practical/Lab/Tutorial	9
	- Student Centered Learning	18
2.	Independent Study	58
	- Independent Study	28
	- Preparation for Examination/Assignment/Project	30
3.	Assessment	20
	- Project/Assignment (3)	15
	- Problem Solving (2)	5
Total		**120**

TEACHING METHODOLOGY

The knowledge and skills are delivered to students through lecture sessions, individual and group assignments, class exercises, labs and projects.   Students are expected to participate actively in class.

WEEKLY SCHEDULE

Week	Topics	Activities/hours
1-2	**Introductory to ICT Applications and Systems** **General in Trends in ICT Applications and Systems**	• Lectures • Exercise 1
3	**1.0 Introduction to Software Product & Software Process** 1.1 Software 1.2 Software Product 1.3 Marketing of Software Products	• Lecture • Discussion
4-5	**2.0 Software Process and Current Trends** 2.1 Software Process: Design, Development, Maintenance 2.1 Rapid Software Development 2.2 Software Reuse 2.3 Component-Based Software Engineering 2.4 Service-Oriented Software Engineering	• Lecture • Discussion
6	**3.0 Software System** 3.1 Embedded Systems 3.2 Critical Systems 3.3 Characteristics & Challenges 3.4 Trends 3.5 Impact on Industries **4.0 Creative Content**	• Lectures • Discussion • Presentation
7	**5.0 Software Technologies & Application** 5.1 Wireless Communication Technologies 5.2 Photonics Technology 5.3 Mobile Applications 5.4 Software Platform Applications	• Lectures • Discussion
8	**4.0 Introduction to Hardware** 4.1 Microcontroller 4.2 Input and output 4.4 Interfacing 4.5 Transducers: Sensors & Actuators	• Lectures

9 - 11	**5.0 Practical Hardware & Software Development** 5.1 Simple hardware design 5.2 Hardware and software development	• Lectures • Discussion • Lab Works • Presentation
12 - 13	**6.0 Introduction to Multimedia Content Creation** 6.1 Digital Content Development, Aggregation and Packaging 6.2 Games, Animation and Virtual Reality Applications	• Lectures • Discussion
14	Business Opportunities for Hardware, Software & Creative Content	• Presentation
15 - 16	**STUDY WEEK** **EXAMINATION WEEKS**	

REFERENCES :

1. William D. Haseman and Ross Hightower, *Mobile Application Development for SAP*, SAP Press/Galileo Press, 2013
2. Dino Esposito, *Architecting Mobile Solutions for the Enterprise*, 1st Edition. Microsoft Press, 2012.
3. Suresh Basandra, *Mobile Applications Architecture and Development Questions and Answers*, Basandra Books, 2013.
4. Jeff McWherter and Scott Gowell, *Professional Mobile Application Development,* John Wiley & Sons, 2012.
5. Paul Scherz and Simon Monk, *Practical Electronics for Inventors*, 3rd Edition. Tab Electronics, 2013.
6. Sommerville, I., *Software Engineering,* 6th Edition. Pearson, 2010
7. Lee, V., Scheneider, A., and Schell, R., *Mobile Design and Development: Practical concepts and techniques for creating mobile sites and web apps*, 1st Edition. O'Reilly Media, 2009.
8. Luke Benstead, *Beginning OpenGL Game Programming*, 2nd Edition. Delmar, 2009
9. Romain Marucchi-Foino, *Game and Graphics Programming for IOS and Android with OpenGL ES 2.0 (Wrox Programmer to Programmer),* John Wiley & Sons, 2012.
10. Rabin, S., *Introduction to Game Development (Game Development Series),* 2nd Edition, Cengage Learning, Inc., USA, 2009
11. Michael Salmond and Gavin Ambrose, *The Fundamentals of Interactive Design*, AVA Publishing, 2013

GRADING

No.	Assessment	Number	% each	% total	Dates
1	Problem Solving	2	5	10	As identified in the Course plan
2	Assignment	2	20	40	
3	Presentation	3	5	15	
4	Project (P)	1	35	35	
	Overall Total			**100**	