



## UNIVERSITI TEKNOLOGI MARA

### CSC401: FUNDAMENTALS OF COMPUTER SCIENCE

<b>Course Name (English)</b>	FUNDAMENTALS OF COMPUTER SCIENCE <b>APPROVED</b>
<b>Course Code</b>	CSC401
<b>MQF Credit</b>	3
<b>Course Description</b>	This course is an introductory course in computer science curriculum and to provide foundation skills in subsequent subjects. The course will provide an overview of components and process within a computer system. The goal is to help students understand the organization and function of components in a computer system and used the knowledge in circuit theories to solve problems concerning data transfer and control.
<b>Transferable Skills</b>	Demonstrate ability to identify and articulate self skills, knowledge and understanding confidently and in a variety of contexts. Demonstrate practical and contemporary knowledge of relevant hardware and software.
<b>Teaching Methodologies</b>	Lectures, Lab Work, Tutorial, Discussion
<b>CLO</b>	CLO1 Apply the suitable theories and knowledge related to fundamental of computer science CLO2 Display the practical skills related to fundamental of computer science CLO3 Illustrate scientific solutions related to fundamental of computer science
<b>Pre-Requisite Courses</b>	No course recommendations
<b>Topics</b>	
<b>1. Introduction to Computer Components</b> 1.1) Computer Evolution 1.2) Input Devices 1.3) Output Devices 1.4) Storage Devices 1.5) Security, Privacy and Ethics 1.6) Communication and Networking	
<b>2. Digital Logic</b> 2.1) Gates 2.2) Boolean Algebra 2.3) Truth Table 2.4) Numbering System	
<b>3. System Unit</b> 3.1) System Unit 3.2) Memory 3.3) Control Unit 3.4) Arithmetic / Logic Unit (ALU)	
<b>4. Programming and Control</b> 4.1) Instruction 4.2) Decoding memory content 4.3) Memory content with loop instruction 4.4) Controller circuit 4.5) Control network	
<b>5. Translation</b> 5.1) Three-Letter Code Programming Language 5.2) Identification key 5.3) Translation	

**6. Practicalities Part 1**

- 6.1) Application Software
- 6.2) System Software

**7. Practicalities Part 2**

- 7.1) Software and Hardware: Security, Privacy and Ethics
- 7.2) Software and Hardware: Communication and Networking

Assessment Breakdown	%
Continuous Assessment	60.00%
Final Assessment	40.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Group Project	1 big or 2 small PBL Group Project	15%	CLO3
	Lab Exercise	Submit in Lab session	15%	CLO2
	Test	Test 1	15%	CLO1
	Test	Test 2	15%	CLO1

Reading List	Recommended Text	Reference Book Resources
	<ul style="list-style-type: none"> <li>Misty E. Vermaat, Susan L. Sebok, Steven M. Freund, Jennifer T. Campbell, Mark Frydenberg 2018, <i>Discovering Computers ©2018: Digital Technology, Data, and Devices</i>, Cengage Learning</li> <li>Cullen Schaffer, Haslizatul Fairuz Mohamed Hanum, Norzehan Sakamat, Norizan Mat Diah, Erny Arniza Ahmad, Suzana Ahmad 2011, <i>Introduction to Computer Science</i>, 1 Ed., 6, Pearson Custom Publishing [ISBN: 13 978-967-34]</li> </ul>	
Article/Paper List	This Course does not have any article/paper resources	
Other References	This Course does not have any other resources	