



# SULTAN QABOOS UNIVERSITY

## COURSE OUTLINE

**PROGRAM: Agricultural Engineering**

<b>1. Course Code</b>	SWAE3306	
<b>2. Course Title</b>	Computer Programming	
<b>3. Credits</b>	3 CR, 12 CP, 6 ECTS	
<b>4. Pre-requisite Course(s)</b>	Calculus I (MATH2107), General Physics (PHYS2101) or Physics for Engineering I (PHYS2107)	
<b>5. Co-requisite Course(s)</b>	N/A	
<b>6. Equivalent Course(s)</b>	N/A	
<b>7. Incompatible Course(s)</b>	N/A	
<b>8. Course Category</b>	<input type="checkbox"/> University Requirement	<input type="checkbox"/> University Elective
	<input checked="" type="checkbox"/> College Requirement	<input type="checkbox"/> College Elective
	<input type="checkbox"/> Department Requirement	<input type="checkbox"/> Department Elective
	<input type="checkbox"/> Specialization Requirement	<input type="checkbox"/> Specialization Elective
	<input type="checkbox"/> Other (specify):	
<b>9. Course Owner</b>	College: CAMS	Department: SWAE
<b>10. Course Type</b>	<input type="checkbox"/> Lecture	<input type="checkbox"/> Lecture/Lab
	<input type="checkbox"/> Lecture/Seminar	<input type="checkbox"/> Lecture/Studio
	<input checked="" type="checkbox"/> Lecture/Tutorial	<input type="checkbox"/> Lecture/Lab/Tutorial or Seminar
	<input type="checkbox"/> Tutorial	<input type="checkbox"/> Laboratory (Practical)
	<input type="checkbox"/> Field or Work Placement	<input type="checkbox"/> Studio
	<input type="checkbox"/> Seminar	<input type="checkbox"/> Internship
	<input type="checkbox"/> Workshop	<input type="checkbox"/> Project
<b>11. Language of Instruction</b>	English	
<b>12. Course Description</b>		
<p>The purpose of this course is to gain the student skills of developing interactive windows programs using integrated development (IDE) and event-driven (EDP) object-oriented (OOP) environment of Visual Basic. The students will learn in this course how to develop and organize their programming code into appropriate events related to Graphical User Interfaces (GUI) objects. This course stresses the importance of good programming practices such as the use of naming conventions, flow charts, and code documentations. The target of this course also is to develop skills not only to write Visual Basic programs, but also but also provided the ability of writing codes using other programming languages. Course information is available on the SQU E-Learning system.</p>		
<b>13. Teaching/Learning Strategies</b>		
<p>The course learning objectives shall be achieved by the following strategies: homework, projects, quizzes and exams.</p> <p>On successful completion of this course, the student will be able to:</p> <ol style="list-style-type: none"> <li>1. Introduce students to basic concepts of programming. (j)</li> <li>2. Enable the students to get familiar with and use data types &amp; variables and Decisions &amp; data validation. (a)</li> <li>3. Enable the students to get familiar with and use visual basic environment and programming structure. (a)</li> <li>4. Enable students to get familiar with flowcharts, modularity, arrays, and database (j)</li> <li>5. Encourage students to work in teams to perform the group work sessions and produce group based projects (c)</li> </ol>		
<b>14. Assessment Components and Weight [%]</b>		
<input checked="" type="checkbox"/> Quizzes 5%	<input type="checkbox"/> Practical	<input type="checkbox"/> Other (specify):
<input checked="" type="checkbox"/> Homework assignments 15%	<input checked="" type="checkbox"/> Project 20%	
<input checked="" type="checkbox"/> In-term examination(s) 20%	<input checked="" type="checkbox"/> Final examination 40%	

<b>15. Grading Method</b>	
<input checked="" type="checkbox"/> A-F Scale	<input type="checkbox"/> Pass/Not passed
<b>16. Textbook(s) and Supplemental Material</b>	
Textbook: Programming in Visual Basic 2010 by J.S. McKeown. 2010. Cambridge University Press.	
Reference Books: (These books are available at SQU library):	
1.	Microsoft Visual Basic 2010 step by step by Halvorson , M. 2011. QA76.73 .B3 H3412 2011
2.	Programming with Microsoft Visual Basic 2008 by Zak, D. QA76.73 .B3 Z332 2010
3.	Visual Basic 2008: how to program by Deitel, Paul J. 2009. QA76.73 .B3 D452 2009

17. Matching Course Objectives with Program Outcomes and SQU Graduate Attributes		
SQU Graduate Attributes		
<b>A. SQU graduates should be able to:</b> 1. apply the knowledge and skills relevant to the specialization 2. communicate effectively and use information and communication technologies 3. critically analyze complex information and present it in simple clear manner	<b>B. SQU graduates possess</b> 1. interpersonal communication skills and alignment with culture of international labour market to assist them in practical life and in living successfully 2. skills and motivation for independent learning and engagement in lifelong learning and research 3. work ethics and positive values, and intellectual independence and autonomy 4. teamwork skills and display potential leadership qualities	<b>C. SQU graduates should</b> relish good citizenship qualities, be conscious of their national identity and be socially responsible, engage in community affairs and be mindful of contemporary issues.

#	Intended Student Learning Outcome /Course Learning Objective	Relevant Program Outcome(s)	Applicable Attribute(s)
1.	Introduce students to basic concepts of programming. (j)	a. An ability to apply knowledge of mathematics, science, and engineering.	ABET (j) SQU A1
2.	Enable the students to get familiar with and use data types & variables and Decisions & data validation. (a)	b. An ability to design and conduct experiments, as well as an ability to analyze and interpret data.	ABET (a) SQU A1, A3
3.	Enable the students to get familiar with and use visual basic environment and programming structure. (a)	c. An ability to design a system, component, or process to meet desired needs.	ABET (a) SQU A1, A3
4.	Enable students to get familiar with flowcharts, modularity, arrays, and database (j)	d. An ability to function on multi-disciplinary teams.	ABET (j) SQU A1, A3
5.	Encourage students to work in teams to perform the group work sessions and produce group based projects (c)	e. An ability to identify, formulate and solve engineering problems	ABET (c) SQU A2, A3
6.		f. An understanding of professional and ethical responsibility.	
7.		g. An ability to communicate effectively.	
8.		h. The broad education necessary to understand the impact of engineering solutions in a global and societal context.	
9.		i. A recognition of the need for, and an ability to engage in life-long learning.	
10.		j. The knowledge of contemporary issues.	
11.		k. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice	
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#### **16. Student Responsibilities**

It is the student's responsibility to know and comply with all University Academic Regulations relevant to participation in this course. These regulations specifically include attendance requirement and students' academic code of conduct.

For attendance, it is the student's responsibility to be punctual and to attend all classes.

Students are expected to perform their work with honesty and avoid any academic misconduct, which is defined as the use of any dishonest or deceitful means to gain some academic advantage or benefit. This can take many forms, including but not limited to, the following: copying, plagiarism, collusion and forging documents. For full details, please refer to the Undergraduate Academic Regulations and to the Student Academic Misconduct Policy.

Additionally, this course requires that you:

Students should be aware of and abide by all University Regulations. Students should attend class, read the lecture notes provided, read book chapters and other assigned readings, participate in class and discuss concepts. Students are responsible for all materials covered in the class whether presented orally during lectures or assigned from the texts, references, or handouts..

COURSE INFORMATION			
<b>Course Code</b>	SWAE3306	<b>Course Title</b>	Computer Programming
<b>Semester/ Year</b>	Spring	<b>Section(s)</b>	10/11
<b>Day, Time, and Place</b>	Lecutres in AGR1025 and Tutorials in AGR1025		
<b>Course Coordinator</b>	Dr. Yaseen Ahmed Al-Mulla		
<b>Office Location</b>	CAMS# 213 & RSGISRC ENG#0039	<b>Office Hours</b>	As mentioned in the timetable
<b>Office Tel. Ext.</b>	3635	<b>Email</b>	yalmula@squ.edu.om

Tentative Schedule			
Week	Lecture #	Topic/Material to be covered	Assessment
1	1	Introduction	
2	1	Fundamentals of Design and Programming – Starting from Scratch	
3	2	Variables and Constants – A Place for Everything and Everything in Its Place	
4	2	Variables and Constants – A Place for Everything and Everything in Its Place (cont.)	HW1
5	3	Writing Programs – First You Walk, Then You Run	Quiz1
6	4	Writing Programs II – More Controls and New Logic	HW2
7	5	Using If and Case – Decisions, Decisions, Decisions	Quiz2
8	6	Loops – Once Is Not Enough...	
9		Review and Mid Term Exam	Mid Term Exam
10	7	Procedures and Functions & Menus and Timers	HW3
11	8	Tying It All Together	
12	13	Graphics – The Visual Side of Visual Basic	Quiz3
13	14	Arrays and Structures – Organizing Data	HW4
14	14	LINQ to SQL – The World Runs on Databases	
15		Projects Presentations - Course review	Quiz4
16			Final Exam
17			

## APPENDIX A: INSTRUCTORS OF MULTIPLE SECTIONS

[illegible]

<b>APPENDIX B: ADDITIONAL INFORMATION</b>