SULTAN QABOOS UNIVERSITY

COURSE OUTLINE

PROGRAM: Agricultural Engineering

1. Course Code	SWAE2307	
2. Course Title	Workshop Practice I	
3. Credits	1	
4. Pre-requisite Course(s)	PHYS2101 or PHYS2107	
5. Co-requisite Course(s)		
6. Equivalent Course(s)		
7. Incompatible Course(s)	SWAE2300	
8. Course Category	☐ University Requirement	☐ University Elective
	☒ College Requirement	☐ College Elective
	☐ Department Requirement	☐ Department Elective
	☒ Specialization Requirement	☐ Specialization Elective
	☐ Other (specify):	
9. Course Owner	College: CAMS	Department: SWAE
10. Course Type	☐ Lecture	☒ Lecture/Lab
	☐ Lecture/Seminar	☐ Lecture/Studio
	☐ Lecture/Tutorial	☐ Lecture/Lab/Tutorial or Seminar
	☐ Tutorial	☐ Laboratory (Practical)
	☐ Field or Work Placement	☐ Studio
	☐ Seminar	☐ Internship
	☒ Workshop	☐ Project
11. Language of Instruction	English	

12. Course Description

This course (1-credit) will cover basic principles and practice in workshop layout, application of engineering drawings, measurements, engineering materials and safety issues. In addition, introductions for welding, metal work, principles of workshop machine tools, machining and fabrication will be taken for discussion. Students will have the necessary hands-on experience and to see valuable demonstrations during the course time.

13. Teaching/Learning Strategies

In this course weekly based goals are achieved by having 1/2 hour of theory, one and a half hours of hands on at the engineering workshop. Students will learn about safety at work, safety signs, metrology, welding techniques and workshop machining methods. All will be demonstration type and interactions with students will be done at workshop environment. The performance evaluation and distribution of grades in this course will be based on the A-F University grading scheme for undergraduate courses. Students will have to continuously engage in the course assessment activities in terms of quizzes, assignments and laboratory exercises.

Evaluating sources:
1.Laboratory classes: 1- 10
2.Quizzes 1-4
3.Assignments 1-2.

PI: a1 – Demonstrate how to apply the knowledge of science and engineering
1.in all weekly lab sessions
2.Questions 2-3 in Quiz 1; Questions 4 in Quiz 2; Questions 1-3 in Quiz 3; Questions 3-4 in Quiz 4
3.Question 2, 4, and 6 of Assignment 1; Questions 6, 7, 9-12 in Assignment 2.
PI: i1- Demonstrate ability to independently engage in life-long learning from various sources
1.in all weekly lab sessions
2.Questions 1, 3 in Quiz 1; Questions 2, 4 in Quiz 2; Questions 3-4 in Quiz 3; Questions 2 in Quiz 4

3.Question 1, 3, and 5 of Assignment 1; Questions 3, 5, 7-10 in Assignment 2.
PI: k1 – Demonstrate ability to independently use the techniques, skills, and modern engineering tools necessary for engineering practice
[OR can breakdown as k1 - Demonstrate ability to independently use the techniques, skills, and k2 – Demonstrate ability to use modern engineering tools necessary for engineering practice]

14. Assessment Components and Weight [%]

☒ Quizzes 20%	☒ Practical 40%	☐ Other (specify):
☐ Homework assignments 20%	☒ Project	
☐ In-term examination(s)	☒ Final examination 20%	

15. Grading Method

☒ A-F Scale ☐ Pass/Not passed

16. Textbook(s) and Supplemental Material

Course materials will be distributed in advance each lecture or laboratory session. Necessary instructions will be provided during the first lecture.

Textbook

Bruce J. Black, 2011. Workshop Processes, Practices and Materials. 4th Edition, Newnes, an imprint of Elsevier. (Already available in the book store).

Reference Books:

1.Chapman W. A. J. 1998. Workshop Technology Parts 1 & 2, 4th Edition, Viva Books P. Ltd., New Delhi (Ordered and will be available in the book store soon)

2.Morford, V J., Hoerner, T A. and W. R. Anderson, 1988. Metals and welding. Hobart Publications, ISBN 0-913163-19-8 (Already available in the book store).

3.Important website which will be helpful: http://www.technologystudent.com/equip1/equipex1.htm

17. Matching Course Objectives with Program Outcomes and SQU Graduate Attributes

SQU Graduate Attributes

A. SQU graduates should be able to:	**B. SQU graduates possess**	**C. SQU graduates should**
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	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	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.	Demonstrate how to apply the knowledge of science and engineering	a. An ability to apply knowledge of mathematics, science, and engineering.	ABET (a)
2.	Demonstrate ability to independently engage in life-long learning from various sources	b. An ability to design and conduct experiments, as well as an ability to analyze and interpret data.	ABET (i)
3.	Demonstrate ability to independently use the techniques, skills, and modern engineering tools necessary for engineering practice	c. An ability to design a system, component, or process to meet desired needs.	ABET (k)
4.		d. An ability to function on multi-disciplinary teams.	
5.		e. An ability to identify, formulate and solve engineering problems.	
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:

COURSE INFORMATION			
Course Code	SWAE2307	**Course Title**	Workshop Practice I
Semester/ Year	Spring	**Section(s)**	10/11
Day, Time, and Place	As scheduled in the timetable		

Course Coordinator	Dr. Hemanatha Jayasuriya		
Office Location	Room 232	**Office Hours**	As posted on the office door
Office Tel. Ext.	1223	**Email**	hemjay@squ.edu.om

Tentative Schedule

Week	Lecture #	Topic/Material to be covered	Assessment
1	1	Introduction to workshop practice: Familiarization with the workshop	Lab familierization
2	2	Introduction to workshop tools and machines	Lab #1
3	3	Health and Safety at Workshop	Lab #2
4	4	Recognition of materials	Quiz #1 Assignment #1
5	5	Measurements	Lab #3
6	6	Materials and properties	Lab #4
7	7	Hand processes	Quiz #2 Assignment #2
8	8	Marking out	Lab #5
9	9	Cutting tools and fluids	Lab #6
10	10	Workshop machines-1	Lab #7
11	11	Workshop machines-2	Quiz #3 Assignment #3
12	12	Introduction to welding - Oxyacetylene	Lab #8
13	13	Introduction to welding – Arc	Lab #9
14	14	Introduction to welding – SPOT and TIG	Lab #10 Assignment #4
15	15	Review	Quiz #4
16			Final Exam
17			

APPENDIX A: INSTRUCTORS OF MULTIPLE SECTIONS					
Section	**Instructor**	**Day, Time, and Place**	**Office Location and Extension**	**Email**	**Office Hours**

APPENDIX B: ADDITIONAL INFORMATION