



# SULTAN QABOOS UNIVERSITY

## COURSE OUTLINE

**PROGRAM: Soil Sciences**

<b>1. Course Code</b>	SWAE4404	
<b>2. Course Title</b>	Soil Genesis & Classification	
<b>3. Credits</b>	3CR, 12 CP, 6 ECTS	
<b>4. Pre-requisite Course(s)</b>	Introduction to Soil & Water (SWAE2201) or ERSC 2101-Introduction to Geology I + College Requirements	
<b>5. Co-requisite Course(s)</b>		
<b>6. Equivalent Course(s)</b>		
<b>7. Incompatible Course(s)</b>		
<b>8. Course Category</b>	<input type="checkbox"/> University Requirement <input type="checkbox"/> College Requirement <input checked="" type="checkbox"/> Department Requirement <input type="checkbox"/> Specialization Requirement <input type="checkbox"/> Other (specify):	<input type="checkbox"/> University Elective <input type="checkbox"/> College Elective <input type="checkbox"/> Department Elective <input type="checkbox"/> Specialization Elective
<b>9. Course Owner</b>	College: CAMS	Department: SWAE
<b>10. Course Type</b>	<input type="checkbox"/> Lecture <input type="checkbox"/> Lecture/Seminar <input type="checkbox"/> Lecture/Tutorial <input type="checkbox"/> Tutorial <input type="checkbox"/> Field or Work Placement <input type="checkbox"/> Seminar <input type="checkbox"/> Workshop	<input checked="" type="checkbox"/> Lecture/Lab <input type="checkbox"/> Lecture/Studio <input type="checkbox"/> Lecture/Lab/Tutorial or Seminar <input type="checkbox"/> Laboratory (Practical) <input type="checkbox"/> Studio <input type="checkbox"/> Internship <input type="checkbox"/> Project
<b>11. Language of Instruction</b>	English	
<b>12. Course Description</b>		
This course provides knowledge on how soils are formed through the interaction of climate, vegetation/biotic features, parent material, and slope over time. Major soil formation processes and their influences to the genesis of different types of soils are discussed. The course also provide students some practical experience in describing soil profiles, classifying soils, and making soil interpretations for the various land uses.		
<b>13. Teaching/Learning Strategies</b>		
When students finish the course, they will be able to: a. Know on how soils are formed through the interaction of climate, vegetation/biotic features, parent material, and slope over time. b. Integrate the concepts of soil chemistry, soil physics, and soil biology towards understanding the pedogenesis of soils. c. Be familiar with principles of soil taxonomy and classification system. d. Produce soil survey reports and utilize the published ones (e.g. General Soil Map of Oman). e. Apply soil morphological data and soil survey information in making soil interpretations for the various land uses. f. Gain practical experience in describing soil horizons and soil profile.		
<b>14. Assessment Components and Weight [%]</b>		
<input checked="" type="checkbox"/> Quizzes 5	<input checked="" type="checkbox"/> Practical 15	<input checked="" type="checkbox"/> Other (specify): Students Presentations (5)
<input type="checkbox"/> Homework assignments	<input type="checkbox"/> Project	
<input checked="" type="checkbox"/> In-term examination(s) 35	<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		

**16. Textbook(s) and Supplemental Material**

During the course, lecture notes and handouts will be distributed during class sessions or send to you via e-mail.

a. Lecture Notes: Lecturing files: Lecture notes in the form of PPT slides will be available in Moodle and/ or other PDF files will be send via e-mail.

b. Supplemental Materials:

- Text book: Soils: Genesis and Geomorphology. 2005. Schaetzel, Randall J., and Sharon Anderson. © Cambridge University Press.

- Soils and Geomorphology.1999. Third Edition. Birkeland P. W. Copyright © Oxford Univ. Press, New York.

- Keys to Soil Taxonomy. 2014. 12th ed. USDA-Natural Resources Conservation Service.

- Selected published papers that will be distributed for review and students presentations.

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

<b>A. SQU graduates should be able to:</b>	<b>B. SQU graduates possess</b>	<b>C. SQU graduates should</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	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 proficiency in applying the knowledge gained from this course in determining the potentials and limitations of different soils in relation to various soil uses such as plant growth, urbanization, landfills, water protection, biodiversity maintenance, among others.	Demonstrate proficiency in application of science in solving soil and water management problems.	(ABET: a2)
2.	Understanding the concepts behind soil variation over a wide range of ecosystems.	Demonstrate proficiency in application of soil sciences principles in real world problems	(ABET: a3)
3.	Applying the concepts of soil morphological properties and features in projects with an integrated analysis of soil processes and problems in a landscape context.	Formulate the soil problems related to the specified areas and identify the key variables	(ABET: e2)
4.	Ability to apply the theory and skills gained from this course in issues relates to soil environment and soil use.	Demonstrate proficiency in application of soil sciences principles in real world problems	(ABET: a3)
5.	Contributing in future projects that required the preparation of soil national database for land resources planning.	Ability to form a team based on the goal in real world soil and land design projects	(ABET: d1)
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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			
<b>Course Code</b>	SWAE4404	<b>Course Title</b>	Soil Genesis & Classification
<b>Semester/ Year</b>	Fall 2018	<b>Section(s)</b>	10/11
<b>Day, Time, and Place</b>	Wednesday 8:00-9:50am. CMT/B12 and Monday 8:00-9:50 am. AGR/0012		
<b>Course Coordinator</b>	Said Al-Ismaily		
<b>Office Location</b>	246 Anx	<b>Office Hours</b>	Monday & Wednesday 10:00-11:00 am.
<b>Office Tel. Ext.</b>	3642	<b>Email</b>	esmaily@squ.edu.om

Tentative Schedule			
Week	Lecture #	Topic/Material to be covered	Assessment
1		Introduction and history of soils	
2		The soils around us and their importance	
3		Formation of soils from parent materials	
4		Effects of climate, temperature, organisms, and time on soils/ Lab: Factors Affecting the release of plant nutrients by mineral weathering	
5		Soil horizons: Their properties and formation / Lab: Some Field Skills: Texture By Feel”and Color Charts	
6		Soil physiochemical properties / Lab:Soil Texture: Mechanical Analyses	
7		Exam I (Wednesday) /Lab: Soil pH and EC (Saturated paste and other methods)	
8		Diagnostic horizons and their major features / Soils in the Field (Landscape and Profile Description)	
9		Soil major types and their properties / Soils in the Field (Landscape and Profile Description)	
10		Soil classification / Use of Soil Maps (Part A)	
11		Soil classification / Use of Soil Maps (Part B)	
12		Land use evaluation parameters / Use of Soil Maps (Part A)	
13		Exam II (Wednesday) / Use of Soil Maps (Part A)	
14		Land use evaluation parameters	
15		Students Presentations	
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## APPENDIX A: INSTRUCTORS OF MULTIPLE SECTIONS

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