



**SULTAN QABOOS UNIVERSITY**  
**COURSE OUTLINE**  
**PROGRAM: Water Technology**

<b>1. Course Code</b>	SWAE3303	
<b>2. Course Title</b>	Elements of Hydrology	
<b>3. Credits</b>	3CR, 12 CP, 6 ECTS	
<b>4. Pre-requisite Course(s)</b>	SWAE2201	
<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"/> University Elective
	<input type="checkbox"/> College Requirement	<input type="checkbox"/> College Elective
	<input type="checkbox"/> Department Requirement	<input type="checkbox"/> Department Elective
	<input checked="" 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>		
This is an intermediate-level course that aims to increase the students' knowledge of water as it occurs on earth and its interaction with the environment. It introduces the hydrologic cycle and reviews the main processes that affect it, such as precipitation, evaporation and transpiration, runoff, infiltration, and ground water. Some concepts and tools for water resources management are discussed. Laboratory sessions and tutorials complement lecture topics.		
<b>13. Teaching/Learning Strategies</b>		
1. Class participation: students will be encouraged to participate in the discussion of course topics and asked to provide working examples that are related to the theoretical basics covered in the classroom. Participation worth 5% of course grading policy. 2. Laboratory/tutorial sessions: this would help the student to bring the theory into practice. Students will work in teams, where they would be given some room to design their experiments. 3. Quizzes and Exams: Two quizzes, two tests, and a final exam will be administrated in this course to assess the academic performance of the students.		
<b>14. Assessment Components and Weight [%]</b>		
<input checked="" type="checkbox"/> Quizzes 20	<input checked="" type="checkbox"/> Practical 15	<input type="checkbox"/> Other (specify): 5 (Participation)
<input type="checkbox"/> Homework assignments 0	<input type="checkbox"/> Project	
<input checked="" type="checkbox"/> In-term examination(s) 20	<input 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>		
Physical Hydrology		

17. Matching Course Objectives with Program Outcomes and SQU Graduate Attributes		
SQU Graduate Attributes		
<b>A. SQU graduates should be able to:</b> <ol style="list-style-type: none"> <li>1. apply the knowledge and skills relevant to the specialization</li> <li>2. communicate effectively and use information and communication technologies</li> <li>3. critically analyze complex information and present it in simple clear manner</li> </ol>	<b>B. SQU graduates possess</b> <ol style="list-style-type: none"> <li>1. interpersonal communication skills and alignment with culture of international labour market to assist them in practical life and in living successfully</li> <li>2. skills and motivation for independent learning and engagement in lifelong learning and research</li> <li>3. work ethics and positive values, and intellectual independence and autonomy</li> <li>4. teamwork skills and display potential leadership qualities</li> </ol>	<b>C. SQU graduates should</b> <p>relish good citizenship qualities, be conscious of their national identity and be socially responsible, engage in community affairs and be mindful of contemporary issues.</p>

#	Intended Student Learning Outcome /Course Learning Objective	Relevant Program Outcome(s)	Applicable Attribute(s)
1.	Understand the different parts of the hydrologic cycle	Determine evaporation and evapotranspiration rates for a given area	
2.	Understand the mechanisms that cause different rainfall patterns over Oman and measurement stations	Analyze rainfall data and determine average rainfall over an area	
3.	Learn how evapotranspiration is estimated using different methods and computer packages	Determine evaporation and evapotranspiration rates for a given area	
4.	Understand groundwater concepts and types of groundwater reservoirs across Oman	Determine the aquifer characteristics using graphical solutions of flow equations	
5.	Study the impact of flooding and approaches to predict runoff potential	Construct the runoff and unit hydrographs	
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16. Student Responsibilities
<p>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.</p> <p>For attendance, it is the student's responsibility to be punctual and to attend all classes.</p> <p>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.</p> <p>Additionally, this course requires that you:</p>



COURSE INFORMATION			
<b>Course Code</b>	SWAE3303	<b>Course Title</b>	Elements of Hydrology
<b>Semester/ Year</b>	Fall 2017	<b>Section(s)</b>	10/11
<b>Day, Time, and Place</b>	Sun. 10 am -12 pm, A 03 Wed. 10 am - 12 pm, A 03		

<b>Course Coordinator</b>	Salem Al Jabri		
<b>Office Location</b>	240	<b>Office Hours</b>	Sun Mon. Wed. 12-2 pm
<b>Office Tel. Ext.</b>	3629	<b>Email</b>	salemj@squ.edu.om

Tentative Schedule			
Week	Lecture #	Topic/Material to be covered	Assessment
1	1	Introduction	
2	2	Principles of precipitation	
3	3	Precipitation: measurements and data analysis	
4	4	Rainfall climatology	Quiz One
5	5	Theory of evaporation	
6	6	Evaporation estimation from water bodies and bare soils	
7	7	Evapotranspiration	
8			Test One
9	8	Evapotranspiration	
10	9	Runoff Analysis	Quiz Two
11	10	Runoff Analysis	
12	11	Infiltration	
13			Test Two
14		Groundwater systems: types and basic principles	
15		General flow to wells, Aquifer characteristics	
16			
17			

## APPENDIX A: INSTRUCTORS OF MULTIPLE SECTIONS

[illegible]

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