College of Natural & Applied Sciences
AGRICULTURE & LIFE SCIENCES

EV542-01, HYDROLOGY
SYLLABUS
FALL 2024

CLASS MEETING TIMES

Monday & Wednesday, 9:00 – 10:20 am

INSTRUCTOR

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Office Hours: Tuesday, Thursday, & Friday 9:30-10:30 am

CATALOG DESCRIPTION

Discussion of the basic physical principles of the water cycle (evaporation, condensation, precipitation, runoff, streamflow, percolation, and groundwater flow), as well as environmentally relevant applications based on case studies. The course will develop knowledge on topics ranging from climatology, atmospheric circulation and meteorological measurements, as well as more detailed investigations into precipitation, streamflow measurement, hydrograph analysis, storm runoff and concepts in flood estimation and routing.

REQUIRED TEXTBOOK AND/OR READINGS

Chow et al. (1988) Applied Hydrology, McGraw-Hill

COURSE LEARNING OUTCOMES

Student Learning Outcomes (SLOs)

Students will have the opportunity to develop their theoretical knowledge on key aspects of hydrology, along with a more applied appreciation of monitoring and modeling hydrological processes. Students will have a comprehensive scientific procedure to approach hydrological problems with the critical thinking and scientific method from statistical knowledge.

MSc EV Program Learning Outcomes (PLOs)
<These PLOs are established and may be found in the latest graduate bulletin>

A. Knowledge-Based Outcomes. Students completing this program will understand the defining attributes of science, the roles and responsibilities of scientists in addressing environmental problems, and the essential elements of the defining subdisciplines of environmental science. Specifically, they will:

A-1 **(R)** Understand the attributes and limitations of scientific thought, culture, method, and practice—along with acknowledged principles for ethical conduct—in the search for truth and in the effective and humane application of science to the resolution of local, regional, and global environmental problems.

A-2 **(M)** Understand basic principles and components of earth science and engineering, biology and ecology, and economics and management that are requisite to the exploration and resolution of environmental problems.

B. Skills-Based Outcomes. Students completing this program will demonstrate the abilities to conceive, conduct, and report original research. Specifically, they will:

B-1 **(M)** Demonstrate the abilities to frame research questions, make observations and collect data, and—as applicable to her or his discipline—to design and conduct experiments, operate analytical instruments, or employ statistical, numerical, or geospatial tools to test either new hypotheses or prevailing theories.

B-2 **(M)** Demonstrate the ability to conceive, critically examine, and systematically develop integral approaches to multidisciplinary research questions and broadly based solutions to public issues and policy problems that span the environmental subdisciplines of earth science, biology, ecology, economics, management, and engineering.

B-3 **(M)** Demonstrate the ability to write rigorous, critical, clear, informative, and concise technical reports and articles.

*(I) indicates that this course introduces this particular objective.
(R) indicates that this course re-enforces this particular objective.
(M) indicates that this course was specifically designed with this particular objective in mind.
<You would put an I, R, or M after each of the PLOs above.>

UOG Institutional Student Learning Outcomes (ILOs)
<These are also established and will be available in the latest graduate bulletin>

In addition to the PLOs, the SLOs also support the ILOs of UOG. By the time you graduate, it is expected that you have achieved the following objectives:

1. **(R)** Demonstrate mastery of critical skills, theories, methodologies, and other content knowledge at a level that will enable them to address fundamental questions in their primary area of study
2. **(M)** Plan, conduct, and complete a significant research or creative project
3. **(M)** Exercise oral and written communication skills sufficient to publish and present work in their field;
4. **(M)** Adhere to the ethical principles of academia and their respective disciplines in course work, fieldwork, and other appropriate situations; and
5. **(M)** Exemplify, through service, the value of their discipline to the academy and the community at large, interacting productively and professionally with people from diverse backgrounds.

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(R) indicates that this course re-enforces this particular objective.

(M) indicates that this course was specifically designed with this particular objective in mind.
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FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT (FERPA)

The Family Educational Rights and Privacy Act (FERPA) affords students certain rights with respect to their education records. These rights for students, parents and school officials can be viewed at: **http://www2.ed.gov/policy/gen/guid/fpco/ferpa/index.html**

Americans with Disabilities Act Amendments Act (ADAAA) Accommodation Services

If you are a student with a disability who will require an accommodation(s) to participate in this course, please contact the UOG Student Counseling and Advising Service Accommodations Office to discuss your specific accommodation needs confidentially. You will need to provide me with an accommodation letter from the Student Counseling and Advising Service Accommodations counselor. If you are not registered, you should do so immediately at the UOG Student Center, Rotunda Office #4 (735-2460) to coordinate your accommodation request.

ACADEMIC DISHONE*STY*

Professional and ethical conduct is expected at all times. Unethical conduct includes any form of cheating, including plagiarism. The term "**cheating**" includes, but is not limited to: (1) use of any unauthorized assistance in taking quizzes, tests, or examinations, e.g., looking at other students' answers, using crib notes (including electronic), getting information from another person via any kind of communication; (2) dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments; or (3) the acquisition, without permission, of tests or other academic material belonging to a member of the University faculty or staff. If you need to use an electronic translator, you must discuss this with me in advance. All assignments and tests must be your own work. Answers you write on the tests must come only from in your head or the information supplied in the test papers; anything else is cheating. Any evidence of cheating will result in a "0" for that assignments and/or exam or possibly an "F" for the entire course – final decision to be determined by me, the course instructor.

TOBACCO-FREE/SMOKE-FREE CAMPUS

UOG is a tobacco-free campus. Thank you for not using tobacco products on campus, and for helping make UOG a healthy learning and living environment. For more information visit: http://www.uog.edu/smoke-free-uog

GRADING SYSTEM/EVALUATION METHODOLOGIES
<This is also established in the graduate bulletin.>

A grade is given as recognition of a certain degree of accomplishment in a course and is to be interpreted as follows:

A+ [4.00] Outstanding*
A [4.00] Excellent
A- [3.70] Very Good
B+ [3.30] High Average
B [3.00] Average

B- [2.70] Low Average
C+ [2.00] Below Average
C [2.00] Marginal
F [0.00] Failure
UW [0.00] Unofficial Withdrawal (see section on Withdrawal Policies and Procedures)

Your grade in this course will be calculated as follows:

Note: Table format (below)

Course Requirements		Points	Percent (%)
Participation and Engagement		10	10
Group presentation (Literature review)		15	15
Final Exam		35	35
Four assignments		40 (10 per assignment)	40
	Total	100	100

COURSE TOPIC/EXAM SCHEDULE (minimum weekly)

Date/Week	**Topic**	**Assignments (optional)**
Week 1	1. Introduction	
Week 2-3	2. Mass and Energy Balances	Assignment 1
Week 4-5	3. Probability in Hydrology	
Week 6-7	4. Weather and Hydrology	Assignment 2
Week 8-9	5. Precipitation	Assignment 3
Week 10	The First Group Review Presentation	
Week 11-12	6. Streamflow	
Week 13	7. Groundwater	Assignment 4
Week 14-15	8. Streamflow Hydrographs	Assignment 5
Week 16	Final Exam	