

BE 170A1 Syllabus Fall 2021

Basic Concepts in Water-Related Applications

Water Use and Sustainability (Starting Spring 2022)

Course Objectives:

1. Identify how water influences and interacts with the world around you.
2. Describe the physical properties and characteristics of water.
3. Critically analyze and identify the effects of human interaction with water.
4. Interpret and present data in tables, graphs, and charts to describe the importance of water.
5. Construct and interpret visualizations of scientific data to draw to understand the biological significance of water.
6. Emphasis critical and evaluative thinking by practicing peer evaluation in discussion groups regarding water utilization, practices, and sustainability.
7. Describe the connection between energy and water (the water-energy nexus) by generalizing the cost of processing food and raw materials.
8. Quantify your personal water use and explain the impact that water use has on society.
9. Identify the residential and industrial processes that utilize water.
10. Describe and identify the components and the factors that influence water law.
11. Predict how the future supply of available water will change the world.

Expected Learning Outcomes - After taking BE 170A1, students will be able to:

Exploring Perspectives:

Students will identify the approaches and methodologies of the disciplinary perspective, use evidence and/or knowledge generated within the disciplinary perspective to critically analyze questions, ideas, and/or arguments, and describe contributions of this perspective to finding solutions to global and/or local challenges.

Quantitative Reasoning Attribute:

Students will demonstrate competency in working with numerical information by critically analyzing quantitative information, generating ideas that are supported by quantitative evidence, assessing the relevance of data and its associated implications in a variety of contexts, and communicating those ideas and/or associated interpretations using various formats (graphs, data tables, equations, oral presentations, or written reflections).

Additionally, Students will:

1. Describe the nature and application of water to daily life.
2. Apply ideas and processes involving water to situations beyond the classroom.
3. Understand basic experiments by generating and analyzing data, and use abstract reasoning to interpret the results.
4. Interpret and present data in tables, graphs, and charts as well as perform appropriate mathematical calculations and data analysis.
5. Read and summarize scientific literature from both scholarly and popular sources such as magazines and newspapers.
6. Emphasize critical and evaluative thinking, by practicing peer evaluation in discussions and other class assignments.

BE 170A1 : Basic Concepts in Water-Related Applications (Gen Ed: Tier 1 Natural Sciences - Online)

This course develops an understanding of natural science concepts and ideas explaining how they can be used to understand and analyze processes and objects in the everyday world. Water is a central theme. Students examine how it is obtained, stored, distributed, used, polluted, and cleaned. They learn to estimate it's quality, quantity, energy, and movement. It is a broad introductory course.

Note! If you have trouble following directions or turning assignments in on time, then you should consider taking an in-person course. Online courses are great for students that are self-motivated and that like the flexibility of not being tied to a traditional class schedule. It can be disastrous for procrastinators.

The information in this syllabus is subject to change with reasonable advance notice by the instructor. All written assignments are submitted to turn-it-in, so they are subject to examination for proper citation and plagiarism. Assignments can only be turned in through D2L.

Instructor Contact Information

Dr. Stephen Poe, Biosystems Engineering

Office Location - Shantz Building, Room 528

Telephone Number 520-621-5879 - (The preferred contact method is email.)

Email-Address spoe@email.arizona.edu

Office Hours TBA

All office hours will be conducted via Zoom. Check the D2L news feed for details.

If there are any changes to the normal office hours they will be announced on the news feed, so always check the news feed prior to attending office hours.

Email Response Time

Every attempt will be made to respond to student emails within one business day.

Course Format and Teaching Methods

Students must be able to access and post assignments in D2L. Students will be expected to create video presentations and post to Panopto or YouTube for evaluation. Optional hands-on engagement activities are available to enhance learning. Students are expected to check email and D2L news feed **DAILY** for course updates. There is no textbook required.

Course Homework & Examinations: Schedule/Due Dates

- There are 14 modules that each contain smaller assignments (including reading, writing, videos, and activities).
 - There is one Signature Assignment in the form of a Water Sustainability Portfolio.
 - There are no scheduled exams.
 - There are 14 discussion posts/responses that are approximately 1/4 page each, that are used for peer interaction.
 - Additional writing and communication take place in each module assignment.
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Tentative Weekly Schedule - Fall 2021

| | Start Date | Subject | Assignments | Due |
|--------------|------------|-------------------------------|--|-------|
| Introduction | 8-23 | Class policies and procedures | Bonus Intro Quiz Bonus Intro Discussion Bonus Intro Assignment | 8-31 |
| Module 1 | 8-30 | Introduction to water | Quiz 1 Discussion 1 Assignment 1 | 9-7 |
| Module 2 | 9-6 | Drinking water | Quiz 2 Discussion 2 Assignment 2 | 9-14 |
| Module 3 | 9-13 | How we use water | Quiz 3 Discussion 3 Assignment 3 | 9-21 |
| Module 4 | 9-20 | Water and energy | Quiz 4 Discussion 4 Assignment 4 | 9-28 |
| Module 5 | 9-27 | Irrigation | Quiz 5 Discussion 5 Assignment 5 | 10-5 |
| Module 6 | 10-4 | Water conservation | Quiz 6 Discussion 6 Assignment 6 | 10-12 |
| Module 7 | 10-11 | Wastewater | Quiz 7 Discussion 7 Assignment 7 | 10-19 |
| Module 8 | 10-18 | Water law | Quiz 8 Discussion 8 Assignment 8 | 10-26 |
| Module 9 | 10-25 | Water in media | Quiz 9 Discussion 9 Assignment 9 | 11-2 |
| Module 10 | 11-1 | Water physics | Quiz 10 Discussion 10 Assignment 10 | 11-9 |
| Module 11 | 11-8 | Water and weather | Quiz 11 Discussion 11 Assignment 11 | 11-16 |
| Module 12 | 11-15 | Oceans | Quiz 12 Discussion 12 Assignment 12 | 11-23 |
| Module 13 | 11-22 | The future of water | Quiz 13 Discussion 13 Assignment 13 | 11-30 |
| Module 14 | 11-29 | Summative Assessment | Video Interview | 12-7 |

Course Material

No textbooks required.

All readings and video files provided through D2L.

Required or Special Materials

Special tools or supplies needed: A computer and reliable internet access, and the ability to record videos with a phone, tablet, camera, or computer, and integrate those pictures into a PowerPoint and generate a video. You do not need to buy any special software to complete this course.

You must have the ability to:

1. Use D2L
2. Use a web-browser
3. Use a word processor to create a PDF.
4. Create and upload a PowerPoint video to YouTube or Panopto.

Grading scale and grading policies

University policy regarding grades and grading systems is available at: <http://catalog.arizona.edu/policy/grades-and-grading-system>

Grading Scale

A = 90% and above
B = 80 - 89.9%
C = 70 - 79.9%
D = 60 - 69.9%
E = 59.9% and below

Graded Activities

Quizzes (open notes): 13@27 points = 351 points (324 after dropping the lowest quiz score)

Assignments: 13@27 points = 351 points (324 after dropping the lowest assignment score)

Discussions: 13@27 points = 351 points (324 after dropping the lowest discussion score)

Summative Assessment = 28 points

Total Class Points = 1000

This class will have a total of approximately 1000 points. Points may fluctuate slightly to accommodate specific assignments, posts, or quizzes. Some assignments may be graded for completion only, so make sure you always have something turned in.

Assignments are usually graded within one week, but some may take longer. Engagement points are possible if appropriate opportunities become available (always posted in D2L Course Home Announcements). **Toward the end of the term, the lowest quiz, assignment, and discussion score will be dropped.**

No Required Extracurricular Activities

Engagement Activities

Engagement Activities are optional. Completion of engagement activities and the required report can help your grade. You are limited to 100 points of engagement activity (bonus) credit. A typical activity and report are worth 10 points (examples can be found in D2L/Content/Examples).

Additional Grading Policies

General Education courses must follow the "40% rule," which means that students will complete at least 40% of the grade points by the end of the 8th week of classes (or equivalent for longer or shorter terms).

Dispute of Grade Policy: If you believe that we have made a mistake when grading an assignment, please let us know as soon as possible (**or within a week**). If we make a mistake, please let us know and we will fix it.

If you believe that the assignment was not graded fairly compared to the directions and assignment criteria, you may ask for a regrade. When a regrade is performed the entire paper or assignment is regraded and your grade may go down as well as up. **After a grade has been posted for 1 week it is considered permanent and will not be changed or regraded.**

Confidentiality of Student Records

<https://deanofstudents.arizona.edu/student-assistance/confidentiality-privacy>

Policies are a set of guiding principles for how you (the student), we (the instructors), and the university should act in a given situation. Read these policies carefully so you know what is expected of you as well as what you can expect from the course and the University of Arizona.

Absence Policy

Attendance is not required – this is an online class. You must turn assignments in on a regular basis.

However, it is important to note:

1. If you feel sick, or may have been in contact with someone who is infectious, stay home. Except for seeking medical care, avoid contact with others and do not travel.
2. Notify your instructors if you will be missing an in person or online course.
3. [Campus Health](#) is testing for COVID-19. Please call (520) 621-9202 before you visit in person.
4. Visit the [UArizona COVID-19](#) page for regular updates.

Life challenges: If you are experiencing unexpected barriers to your success in your courses, please note the Dean of Students Office is a central support resource for all students and may be helpful. The [Dean of Students Office](#) can be reached at 520-621-2057 or DOS-deanofstudents@email.arizona.edu

Late Assignment Policy

Everything is due as listed in the syllabus (typically prior to 5:00 pm). **Quizzes, assignments, and discussions CANNOT be turned in late (regardless of accidents, emergencies, or computer malfunctions).** Since almost everyone has an accident, emergency, or computer malfunction at some point - toward the end of the semester the lowest quiz, assignment, and discussion score will be dropped. This allows students to miss one module of regular assignments without any penalty. The late policy also applies to sicknesses of less than one-week duration.

Students who need to miss more than one week of classes in any one semester will be required to provide a doctor's note of explanation to DOS-deanofstudents@email.arizona.edu. The Dean of Student's Office will communicate the receipt of the note (with an expected end date) to the faculty member.

Any student with a serious illness could require additional help/counseling and should contact the DRC and the Dean's Office immediately.

Please try to work ahead in order to avoid unexpected events. The module assignments close automatically and they do not care if you have been trying to upload on a slow computer for an hour. If you are even a second late it will not accept submissions (for example, if the deadline is 5 pm and you submit at 5 pm, it will be graded as late or not accepted). **If you have an emergency that prevents you from working on the class for more than a week, you should contact student health services to coordinate medical care and statements concerning absences.**

It is entirely your responsibility to make sure that any file you submit can be read. If we cannot open or read the assignment, it can not be graded. Take time to always verify that what you have turned in can be viewed. This is also important for any video link - if it is private we can't grade it. I recommend emailing the file link to yourself to verify that it isn't private.

Many opportunities for engagement bonus credit are made available to make up for any problems that emergencies (computer crashes, undocumented sickness, etc.) might create at the last minute. **You are limited to a maximum of 100 points of bonus activities.**

[The UA's policy concerning Class Attendance, Participation, and Administrative Drops is available here.](#)

[The UA policy available here regarding absences for any sincerely held religious belief, observance or practice will be accommodated where reasonable.](#)

Absences pre-approved by the UA Dean of Students (or dean's designee) will be honored if possible. Since this is an online class - assignments should still be turned in prior to any deadline. [Click to read the university's attendance policy.](#)

Makeup Policy for Students Registering Late

Students may add the class late but must follow all original assignment deadlines (missed assignments are not excused).

Honors Credit

To receive honors credit, you must sign up for the honors section of the course and complete the following:

1. Meet with the instructor to discuss the honors contract.
2. Complete a minimum of 50 points worth of engagement activities. These points can serve also as extra credit.
3. Turn in a two-page outline (minimum) module summary at the end of the class. Perform a peer evaluation of another student's final video. All honors work must follow published class standards.

What if you sign up for honors credit and don't complete all honors activities?

You forfeit all bonus points and your grade will be lowered by 5% in the class. You will still receive honors credit.

Threatening Behavior

Sure it's an online class, but to foster a positive learning environment, students and instructors have a shared responsibility. We want a safe, welcoming, and inclusive environment where all of us feel comfortable with each other and where we can challenge ourselves to succeed. To that end, our focus is to treat each other with respect. **Students that use abusive language or threaten other students, the graders, or the instructor will fail the class and be reported to the Dean of Students Office.**

The UA Threatening Behavior by Students Policy prohibits threats of physical harm to any member of the University community, including oneself. [Click to read the Threatening Behavior by Students Policy.](#)

Accessibility and Accommodations

My goal in this classroom is that learning experiences be as accessible as possible. If you anticipate or experience physical or academic barriers based on disability, please let me know immediately so that we can discuss options. You are also welcome (encouraged) to contact the Disability Resource Center (520-621-3268) to establish reasonable accommodations. For additional information on the Disability Resource Center and reasonable accommodations, please visit the DRC website at <http://drc.arizona.edu>.

If you have reasonable accommodations, please plan to meet with me by appointment or during office hours to discuss accommodations and how my course requirements and activities may impact your ability to fully participate.

Code of Academic Integrity

Students are encouraged to share intellectual views and discuss freely the principles and applications of course materials. *However, graded work/exercises must be the product of independent effort unless otherwise instructed.* Students are expected to adhere to the [UA Code of Academic Integrity as described in the UA General Catalog, which you can read by clicking here.](#)

The University Libraries have some excellent tips for avoiding plagiarism: <http://new.library.arizona.edu/research/citing/plagiarism>

Selling/giving class notes and/or other course materials to other students or to a third party for resale is not permitted without the instructor's expressed written consent. Violations to this and other course rules are subject to the Code of Academic Integrity and may result in course sanctions. Additionally, students who use D2L or UA e-mail to sell or buy these copyrighted materials are subject to Code of Conduct Violations for misuse of student e-mail addresses. This conduct may also constitute copyright infringement.

Incompletes (I) and Withdrawals (W)

Requests for incomplete or withdrawal from this course must be made in accordance with University policies. To read the policies, click these links:

- [Incomplete policy](#)
- [Withdrawal policy](#)

Nondiscrimination and Anti-harassment Policy

The University is committed to creating and maintaining an environment free of discrimination; [click here to read the university's Nondiscrimination and Anti-harassment policy.](#)

Our classroom is a place where everyone is encouraged to express well-formed opinions and their reasons for those opinions. We also want to create a tolerant and open environment where such opinions can be expressed without resorting to bullying or discrimination of others.

This course supports elective gender pronoun use and self-identification; rosters indicating such choices will be updated throughout the semester, upon student request. As the course includes group work and discussions, it is vitally important for us to create an educational environment of inclusion and mutual respect.

Additional Resources for Students

[UA Academic policies and procedures are available by clicking here.](#)

[Student Assistance and Advocacy information is available by clicking here.](#)

[Click here for the Office of Diversity](#)

Links to Additional Resources

[Academic Policies and Procedures](#)

[Dean of Students](#)

[Confidentiality of Student Records](#)

[Student Assistance and Advocacy Information](#)

[The Think Tank](#)

[The Writing Center](#)

[The Writing Skills Improvement Program](#)

[Campus Health](#)