

## SYLLABUS – BSEN 100, Fall 2022

**Catalog Description:** BSEN 100. Description of careers in Biomedical, Environmental and Water Resources, Food and Bioproducts Engineering. The human, economic and environmental impacts of engineering in society. Communication, design, teamwork, and the role of ethics and professionalism in engineering work.

**Credits:** 1 Hour

**Time and Place:** Tuesday 2:00 - 2:50, Room 199, Plant Sciences Hall (PLSH)

**Course Website:** <https://canvas.unl.edu>

<b>Instructors:</b>	Dr. Nicole Iverson <a href="mailto:iverson@unl.edu">iverson@unl.edu</a> 260 Morrison Life Sciences (402) 472-0884 Office Hours: Th 1-4 pm in 260 Morrison Hall	Dr. David Jones <a href="mailto:david.jones@unl.edu">david.jones@unl.edu</a> 223 Chase Hall (402) 472-1413 by appointment
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### TAs:

Michael Kathol	<a href="mailto:Michael.kathol@huskers.unl.edu">Michael.kathol@huskers.unl.edu</a>
Brenna Wright	<a href="mailto:bwright12@huskers.unl.edu">bwright12@huskers.unl.edu</a>

**Grading:** Grades will be weighted as follows:

Assignments_____	40%
Attendance_____	25%
Final Presentation (team grade)_____	10%
Team Performance and Feedback_____	15%
Final Report (team grade)_____	10%

Assignments are due at the beginning of class each week. We will decide as a class what the rules are regarding late submissions. In addition to content, misspelled words, errors in sentence construction, and document format are graded.

**Course Objectives:** Upon completion of this course, you will be able to:

1. Enact professional behavior, including adhering to deadlines, following format requirements, and using proper grammar.
2. Seek out and apply new knowledge/skills to improve the quality of and performance during the final project. (ABET 7)
3. Apply an engineering design process to the design of a solution for a problem of a biological nature. (ABET 2)
4. Apply an engineering problem solving process. (ABET 1)
5. Communicate clearly with an audience that has a broad range of engineering knowledge in both a formal and informal setting. (ABET 3)
6. Diagram the ethical implications of a real-life situation. (ABET 4)
7. Demonstrate each of the five behaviors of an effective team member (contribute to the team's work, interact with teammates in a positive and supportive manner, keep the team on track, expect quality, and have relevant knowledge, skills and ability to help the team achieve its goals). (ABET 5)

**ABET Outcomes:** The course objectives will map to the following ABET outcomes:

- 1) An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
- 2) An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.

- 3) An ability to communicate effectively with a range of audiences
- 4) An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
- 5) An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
- 7) An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

### **Face Mask Requirement**

Face masks are not currently required for this class, but the rule could change with changing health conditions. You will be updated on Canvas and in class if there is a change in this rule.

You can always choose to wear a face mask. Some people will choose to wear a face mask to protect themselves or friends/family that are immunocompromised. If you are sick (e.g., have a cold) but are healthy enough to attend class you might choose to wear a face mask to decrease the spread of germs.

### **Diversity & Inclusion**

The University of Nebraska-Lincoln does not discriminate on the basis of race, ethnicity, color, national origin, sex (including pregnancy), religion, age, disability, sexual orientation, gender identity, genetic information, veteran status, marital status, and/or political affiliation.

### **Trespass Policy (Regents' Policy 6.4.7)**

The areas of University academic, research, public service, and administrative buildings of the University used for classrooms, laboratories, faculty and staff offices, and the areas of University student residence buildings used for student living quarters are not open to the general public. Any person not authorized to be or remain in any such building area will be deemed to be trespassing on University property and may be cited and subject to prosecution for criminal trespass in violation of Neb. Rev. Stat. 28-520 or 28-521.

### **Academic Honesty**

Academic honesty is essential to the existence and integrity of an academic institution. The responsibility for maintaining that integrity is shared by all members of the academic community. The University's Student Code of Conduct addresses academic dishonesty. Students who commit acts of academic dishonesty are subject to disciplinary action and are granted due process and the right to appeal any decision. See Student Code of Conduct, Article III, Section B. at

<https://stuafs.unl.edu/DeanofStudents/Student%20Code%20of%20Conduct%20May%20Rev%202014%20a.pdf>

### **Services for Students with disabilities**

The University strives to make all learning experiences as accessible as possible. If you anticipate or experience barriers based on your disability (including mental health, chronic or temporary medical conditions), please let me know immediately so that we can discuss options privately. To establish reasonable accommodations, I may request that you register with Services for Students with Disabilities (SSD). If you are eligible for services and register with their office, make arrangements with me as soon as possible to discuss your accommodations so they can be implemented in a timely manner. SSD contact information: 232 Canfield Admin. Bldg.; 402-472-3787; [acontreras3@unl.edu](mailto:acontreras3@unl.edu)

### **Fire, Internal Hazardous Materials Release**

- Always evacuate if the fire alarm sounds.
- In the event of an evacuation, gather your personal belongings quickly (purse, keys, cell phone, NCard, etc.) and proceed to the nearest exit.
- Do not use the elevator.

- Move away from the problem, use alternative exits.
- Help those who need assistance moving.
- Be ready to be guided by additional instructions.

**Tornado Warning:** When sirens activate, move to the lowest, interior area of a building or designated tornado shelter.

- Stay away from windows.
- Stay near inside wall when possible.
- Keep calm. Even though a warning is issued, the chance of a tornado striking your building or location is slight.

**Hostile Intruder:**

- Remain calm.
- If it is possible to flee the area safely and avoid danger, do so.
- Notify anyone you encounter to exit the building immediately. Evacuate to a safe area away from the danger and take protective cover. Stay there until help arrives.
- Call UNL Police Department or 9-1-1 with your location if possible. If you cannot get through by phone and have text message capability, text University Police at 41513. Enter the letters **UNLPD** and then type your message. Dispatch will receive and respond to the message.
- If flight is impossible, secure yourself in your space. Barricade doors and block windows. Turn off all the lights, close blinds and close and lock all windows and lock and barricade all doors.
- Seek protective cover for yourself and any others (concrete walls, thick desks, filing cabinets may protect you from bullets).
- Keep calm, quiet and out of sight.
- Silence cell phones (mute or turn off cell phone ringer). Consider turning off radios and computer monitors.
- Do not answer the door. If you do not recognize the voice that is giving instructions, do not change your status (stay put). Unknown or unfamiliar voices may be false and designed to give false assurances.
- Place signs in exterior windows to identify the location of injured persons.
- **Do Not Approach Emergency Responders**—let them come to you.
- Remain where you are until an "all clear" instruction is given by an authorized known voice.

**Evacuate:** if there is a safe escape path, leave belongings behind, keep hands visible and follow police officer instructions.

**Hide out:** If evacuation is impossible secure yourself in your space by turning out lights, closing blinds and barricading doors if possible.

**Take action:** As a last resort, and only when your life is in imminent danger, attempt to disrupt and/or incapacitate the active shooter.

**UNL Alert:** Notifications about serious incidents on campus are sent via text message, email, unl.edu website, and social media. For more information go to: <http://unlalert.unl.edu>.

**Additional Emergency Procedures** can be found here:

[http://emergency.unl.edu/doc/Emergency\\_Procedures\\_Quicklist.pdf](http://emergency.unl.edu/doc/Emergency_Procedures_Quicklist.pdf)

### Tentative Weekly Lecture Topics – BSEN 100 2022

<b>Date</b>	<b>Topic</b>	<b>Instructor</b>	<b>Location</b>	<b>Assignment Due (by 2 pm unless otherwise noted)</b>
Aug 23	Introduction	Dr. Iverson	PLSH 199	
Aug 30	Problems that Engineers Address	Dr. Iverson Dr. Jones	PLSH 199	Letter to the instructor
Sept 6	Introduction to Biomedical Engineering	Dr. Iverson Dr. Tomasevicz	PLSH 199	Problem You Will Address as an Engineer
Sept 13	Introduction to Ecological and Environmental Engineering	Dr. Franti	PLSH 199	Biosafety 101 course completed
Sept 20	Introduction to Food and Bioprocess Engineering	Dr. Keshwani	PLSH 199	
Sept 27	Teamwork discussion	Dr. Iverson Dr. Jones	PLSH 199	Emphasis Areas
Oct 4	Class Project – Information from an expert	Dr. Weller	PLSH 199	Code of Cooperation
Oct 11	Class Project – Introduction to the problem/question	Dr. Danao Dr. Jones Dr. Iverson	PLSH 199	Watch video for class project
Oct 18	<b>No class (Fall Break)</b>	XXXXXX	XXXXXX	
Oct 25	Engineering Problem solving	Dr. Iverson	PLSH 199	
Nov 1	Class Project – Tour of Facility	Dr. Danao Dr. Weller Dr. Iverson	Innovation Campus	Engineering Problem Solving
Nov 8	Class Project – Data Collection	Dr. Danao Dr. Weller Dr. Iverson Dr. Jones	Innovation Campus	Prepare for Swab-athon (team)
Nov 15	Engineering Design and Class Project Analysis	Dr. Iverson Dr. Jones	PLSH 199	
Nov 22	Tour of Virtual Incision	Dr. Farritor Dr. Iverson	Innovation Campus	Engineering Design Assignment (team)
Nov 29	Ethics	Dr. Iverson Dr. Jones	PLSH 199	
Dec 6	Class Project – Presentations	Dr. Iverson Dr. Jones	ECU	Ethics Assignment Due Monday, 12/5 at 9 am: Slides for Presentation
Dec 12	During Final Exam Time Slot of 3:30 – 5:30 pm	No class, but assignments are due		Final Report Team member performance Course Evaluations