1. **Course number and title**
   ORE 203L Surf Science and Culture Laboratory

2. **Credits and contact hours**
   1 credit, one 4.0-hour sessions per week.

3. **Instructor’s or course coordinator’s name**
   Ellen Briggs or Justin Stopa

4. **Textbooks**
   Textbooks: None
   Reference books:

5. **Specific course information**
   a. Course content: Science of ocean waves, taking measurements, designing experiments, and data analysis associated with practical applications of ocean waves.
   b. Prerequisite: Basic mathematics or consent
   c. Designation: Elective, not specifically part of the ORE Master’s program

6. **Specific goals for the course**
   a. Specific learning outcomes include:
      i. Students should understand the basic concepts behind observing different oceanographic processes in the environment. They should know the limits of the technologies we use and class as well as the state of the art technologies.
      ii. Knowledge of ocean waves and students should be able to identify several wave transformations (refraction, shoaling, breaking,...); reinforcing ORE203 and the role ocean waves play in society.
      iii. Students should be able to interpret data from observations and be able to construct their own view of the environmental conditions.
      iv. General understanding of ocean waves and the vocabulary associated with ocean sciences and engineering. General understanding of the limitations and common issues in performing field world and making ocean observations for practical applications.

7. **Brief list of topics to be covered**
   a. Sampling strategies
b. Lab reports

c. Fieldwork and problem solving

d. Field deployments of sensors

e. Electronics and building sensors

f. Wave measurement devices - pressure sensors, buoys

g. Tide gauges and devices

h. Wave breaking with a wave flume

i. Data analysis and interpretations (programming)