

BENG 91 - Topics in Bioeng and Medicine - Engler [SP21]

BENG 91: Topics in Bioengineering and Medicine

Course Days: Thursdays

Course Time: 9-10am

Course Location: <https://ucsd.zoom.us/j/96593052012?pwd=S0FualJHZDNaTVVqWUxsTnF1TTJRQT09> (<https://ucsd.zoom.us/j/96593052012?pwd=S0FualJHZDNaTVVqWUxsTnF1TTJRQT09>)

Instructor: Dr. Adam J Engler (aengler@ucsd.edu)

Office Hours: By appointment via Zoom

Course Description

Seminar discussing the interface between and opportunities for bioengineering and medicine. Students will interact with clinical faculty and bioengineering faculty to discuss current topics and problems where engineering solutions could improve the practice of medicine. All seminars will be held online and available via the Zoom link above. All classes will be recorded and stored on CANVAS.

Course Objects

Students will develop an understanding of how engineering approaches have and could improve the practice of medicine through real world examples.

Course Format

Guest faculty lecturers from clinical departments at UCSD will present to the class each week in a “chalk talk” style discussion where they describe clinical problems and past/future engineering solutions. Given the modified online nature of the course, all sessions will be recorded and stored on

solutions. Given the modified online nature of the course, all sessions will use digital whiteboard features on Zoom as necessary and presenters will have PowerPoint slides as needed. Back-up technology should Zoom fail on any discussion day will be a video on-demand taped discussion between Dr. Engler and the speaker.

Course Evaluation

Excluding the first lecture, students must choose any 2 of the 9 lectures to write an approximately 200-word essay that: (1) summarizes the discussion and (2) provides your perspective on how engineering approaches can be applied to a future problem that current lacks a solution in the topic area of the lecture. Files should be uploaded to CANVAS using the quizzes tab. Each essay has its own quiz and will only accept one essay for each quiz, so please only upload your final version. If you are unable to upload your essay, please email it to Dr. Engler as a backup submission method. Late essays will not be accepted.






Course Outline:


4/1/21	Introduction, Topics Outline	Dr. Adam Engler (Bioeng'g)
4/8/21	Diffusion Imaging in MRI	Dr. Rebecca Rakow-Penner (Radiology)
4/15/21	Orthopedics in Bioengineering	Dr. Anshuman Singh (Ortho)
4/22/21	Diagnostic and Interventional Radiology for the Bioengineer	Dr. Justin Tse (Radiology)
4/29/21	TBD	Dr. Nicole Coufal (Pediatrics)
5/6/21		
(Note: 8am	From Engineering to Ophthalmology	Dr. Robert Weinreb (Ophthalmology)


start time)


5/13/21	Bioeng'g: 21st century sol'ns to Neurology's 18th century problems	Dr. Jeffrey Gold (Neurology)
5/20/21	TBD	Dr. Anne Wallace (Oncology)
5/27/21	Surgery and Bioengineering: Pathways and Partnerships	Dr. Brian Clary (Surgery)
6/3/21	Bridging the surgeon to engineer communication gap	Dr. Ryan Broderick (Surgery)


Course Summary:


Date	Details	Due
Thu Apr 1, 2021	 BENG 91 Seminars (https://canvas.ucsd.edu/calendar?event_id=388377&include_contexts=course_25252)	9am to 10am
Thu Apr 8, 2021	 BENG 91 Seminars (https://canvas.ucsd.edu/calendar?event_id=388378&include_contexts=course_25252)	9am to 10am
Thu Apr 15, 2021	 BENG 91 Seminars (https://canvas.ucsd.edu/calendar?event_id=388379&include_contexts=course_25252)	9am to 10am
Thu Apr 22, 2021	 BENG 91 Seminars (https://canvas.ucsd.edu/calendar?event_id=388380&include_contexts=course_25252)	9am to 10am
Thu Apr 29, 2021	 BENG 91 Seminars (https://canvas.ucsd.edu/calendar?event_id=388381&include_contexts=course_25252)	9am to 10am


Thu May 6, 2021  **BENG 91 Seminars**
([https://canvas.ucsd.edu/calendar?
event_id=388382&include_contexts=course_25252](https://canvas.ucsd.edu/calendar?event_id=388382&include_contexts=course_25252)) 9am to 10am

Thu May 13, 2021  **BENG 91 Seminars**
([https://canvas.ucsd.edu/calendar?
event_id=388383&include_contexts=course_25252](https://canvas.ucsd.edu/calendar?event_id=388383&include_contexts=course_25252)) 9am to 10am

Thu May 20, 2021  **BENG 91 Seminars**
([https://canvas.ucsd.edu/calendar?
event_id=388384&include_contexts=course_25252](https://canvas.ucsd.edu/calendar?event_id=388384&include_contexts=course_25252)) 9am to 10am

Thu May 27, 2021  **BENG 91 Seminars**
([https://canvas.ucsd.edu/calendar?
event_id=388385&include_contexts=course_25252](https://canvas.ucsd.edu/calendar?event_id=388385&include_contexts=course_25252)) 9am to 10am

Thu Jun 3, 2021  **BENG 91 Seminars**
([https://canvas.ucsd.edu/calendar?
event_id=388386&include_contexts=course_25252](https://canvas.ucsd.edu/calendar?event_id=388386&include_contexts=course_25252)) 9am to 10am

Fri Jun 4, 2021  **Summary #1**
(<https://canvas.ucsd.edu/courses/25252/assignments/287139>) due by 11:59pm

 **Summary #2**
(<https://canvas.ucsd.edu/courses/25252/assignments/287140>) due by 11:59pm
