BioE150: Introduction to BioNanoscience & BioNanotechnology

Professor Seung-Wuk Lee
Bioengineering

Introduction to BioNanoscience and BioNanotechnology

- Prof. Seung-Wuk Lee

  Department of Bioengineering
  Berkeley Nanosciences and Nanoengineering Institute
  Field of research: Bionanomaterials
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Office hour: 9:40:00-10:30pm on Tuesday or
Appointment by e-mail

- GSI: Ms. Olivia Scheideler <olivia.scheideler@gmail.com>

  Office hour: Thursday 9:30-10:30am @ TBD or email appointment
  Discussion Session:

Text books: No specific text book is required.

- **Reference text books:**
- *Nanobiotechnology*, Edited by C. Niemeyer, C. Mirkin, Wiley-VCH (2007). ISBN: 978-3-527-30658-9
- *Introduction to Protein Structure, 2nd ed.* Carl Branden & John Tooze (1999) Garland Publishing, Inc., New York.
- *Protein-based Materials*. Kevin McGrath & David Kaplan, Editors (1997), Birkhüaser, Boston
- *Self-assembling Peptide Systems in Biology, Engineering and Medicine*. Aggeli, A., Boden, N. & Zhang, S., Ed. (2001) Kluwer Academic Publishers, Dordrent, The Netherlands

Communication with Prof. Lee:

- E-mail:
  - ***Put "BIOE150:--------" on your subject line.***
  - *If not, delayed response or no response.*
  - Phone call: TBA
  - I do not take a phone call w/o pre-arrangement.
  - Leave a message at TBA
  - Office Visit:

- Make a reservation by email.

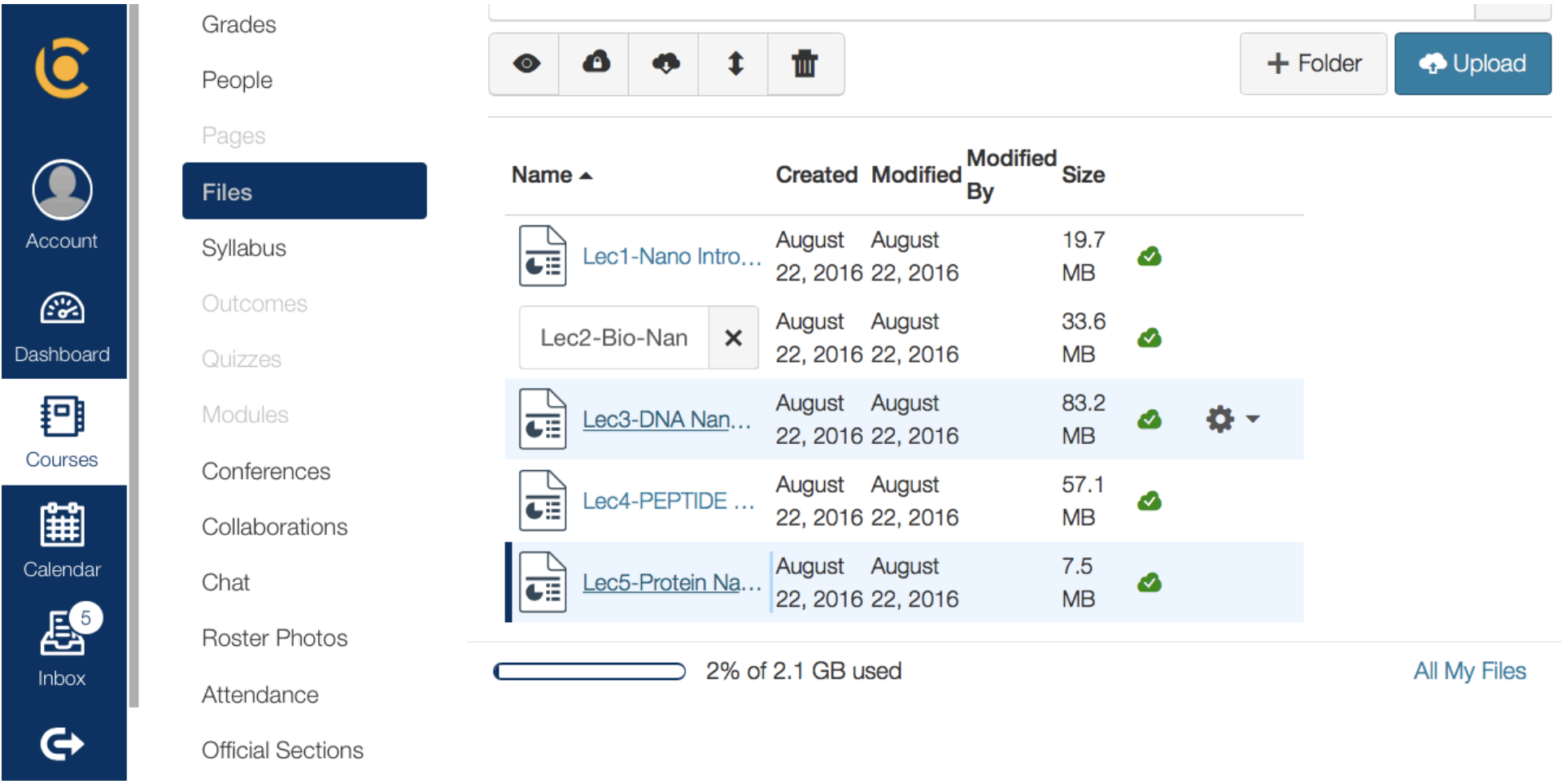
Waiting List:

- Students under waiting list, please send me and GSI an email to add in the system temporary.

Important Date:

- Midterm-exam : Oct. 12
- Final-exam: Nov. 30
- Final Term Paper: December 3 (5pm)

Lecture slides are at Bcourse.



Grading

- Home works 15%
- Term project (Finding Nano I): 10%
- Term project (Finding Nano II): 10%
- Mid-term exam 30%
- Final exam 30%
- Attendance 5%

-Do not submit cooperative homework.

-It will be considered as a cheating.

Late Policy:

- **Late submission of homework and term papers:**
- Late submission is allowed within three days with 25% deduction of the points;
- Answer sheet will be posted after a week from the dues.
- No submission is allowed after posting the answer sheet.
- **I will check your attendance and check your tardiness. (attendance cheating will lose all 5% attendance)**

Absence Justifications

- Sickness: Bring a note from your physician.
- Official trip: Provide the written documents and your travel documents.
- Any other issue: Talk to me first.

- Any question?

Announcement:
Berkeley Nanaoscience Nanoengineering Institute seminar: Friday 2pm at 390 HMMB

BNNI
Berkeley Nanosciences and Nanoengineering Institute

Ted Sargent Univ of Toronto / ECE

NSE Seminar

Capture and Storage of Renewable Energy

Tremendous progress in the cost-effective conversion of solar and wind energy into electrical power brings about a new challenge: the massive (seasonal-scale) storage of energy.

We focus on using computational materials science, spectroscopies including ultrafast and synchrotron, and advances in materials chemistry, to create new catalysts for CO_2 reduction and oxygen evolution.

I will discuss recent advances including a new high-activity OER catalyst and a low-overpotential CO_2 reduction catalyst based on field-induced reagent concentration. I will also touch on related materials design problems in optoelectronics, including the design of composite organic-inorganic materials for photon-to-electron and electron-to-photon conversion.

For more info about Nano Institute programs and activities, visit nano.berkeley.edu

Friday
Aug 25
2-3 pm
390 HMMB

Course Outline:

Class materials are organized by the central dogma of biology

Week 1-10

- Bionanoscience and Bio-inspired nanoscience
- DNA Nanotechnology
- Peptide Nanotechnology
- Protein Nanotechnology
- Virus/Cell Nanotechnology

Week 11-14:

Case Studies (Finding Nano Projects)

Special Topics:

- TBA