
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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Phone: TBA

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), Birkhäuser, 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.

The screenshot shows the Bcourse interface. On the left is a dark blue sidebar with navigation icons and labels: Account, Dashboard, Courses, Calendar, Inbox (with a '5' notification badge), and a refresh icon. The main content area has a top navigation bar with 'Grades', 'People', and 'Pages'. Below this is a toolbar with icons for view, lock, share, sort, and delete, along with '+ Folder' and 'Upload' buttons. The main area displays a file list table with columns: Name, Created, Modified, Modified By, and Size. The files listed are 'Lec1-Nano Intro...', 'Lec2-Bio-Nan', 'Lec3-DNA Nan...', 'Lec4-PEPTIDE ...', and 'Lec5-Protein Na...'. A progress bar at the bottom indicates '2% of 2.1 GB used' and a link for 'All My Files'.

Grades

People

Pages

Files

Syllabus

Outcomes

Quizzes

Modules

Conferences

Collaborations

Chat

Roster Photos

Attendance

Official Sections

View Lock Share Sort Delete

+ Folder Upload

Name ^	Created	Modified	Modified By	Size	
Lec1-Nano Intro...	August 22, 2016	August 22, 2016		19.7 MB	
<input type="text" value="Lec2-Bio-Nan"/>	August 22, 2016	August 22, 2016		33.6 MB	
Lec3-DNA Nan...	August 22, 2016	August 22, 2016		83.2 MB	
Lec4-PEPTIDE ...	August 22, 2016	August 22, 2016		57.1 MB	
Lec5-Protein Na...	August 22, 2016	August 22, 2016		7.5 MB	

2% of 2.1 GB used

All My Files

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.

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- Any question?

Announcement:

Berkeley Nanoscience Nanoengineering Institute
seminar: Friday 2pm at 390 HMMB



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 CO₂ reduction and oxygen evolution.

I will discuss recent advances including a new high-activity OER catalyst and a low-overpotential CO₂ 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

BIOE 150: BioNano

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