



WELCOME TO ORIENTATION!

2024 Undergraduate Orientation
for Chemical and Nano Engineering majors

AIISO YUFENG LI FAMILY DEPARTMENT OF CHEMICAL AND NANO ENGINEERING

Welcome! We are thrilled to have you join our department!

8:15 - 9:00	Check In
9:00 - 9:15	Welcome
9:15 - 9:30	NanoEngineering Overview
9:30 - 9:45	Chemical Engineering Overview
9:45 - 10:10	UG Student Affairs
10:10 - 10:20	Student Orgs: AIChE & NETS
10:20 - 10:30	IDEA Center
10:30 - 10:40	CAP
10:40 - 10:50	OSD
10:50 - 11:00	Study Abroad Office
11:00 - 11:10	Closing Remarks & Walk to SME
11:10 - 12:30	Student Resources Fair

Undergraduate Orientation Fall 2024 Agenda

UG Student Affairs Advising Presentation Agenda

- 1 Undergraduate Advising
- 2 Curriculum CE 25, NA 25
- 3 Petitions & EASy Requests
- 4 Webpages
- 5 Jobs and Internships
- 6 Closing notes

Advising

What is the difference between college and department advising?

- **College Advising Office**
(Revelle, Muir, Marshall, Warren, Roosevelt, Sixth, Seventh, Eighth)
 - General Education requirements
 - Time to Degree
 - Academic & Non-Academic College & University Policies
- **Department Advising Office**
 - Major requirements
 - Enrollment in CENG/NANO courses
 - Course plans for major

Questions regarding courses from outside our department (ex- MATH, CHEM, etc) should be directed to the home department of the course in question.

Aiiso Yufeng Li Family Department of Chemical and Nano Engineering
Academic Advising Team

Student Affairs Manager - **Jackie Tam**

Undergraduate Student Affairs Officer - **Sharon Harvey**

Undergraduate Student Affairs Officer - **Doug Shriner**

Undergraduate Student Affairs Officer - **Emily Bonilla**

Graduate Student Affairs Officer - **Eric Peng**

How to contact our advising team

VAC

(Virtual Advising Center)

- General questions
- Multiple inquiries sent in one VAC message.
- Prompt response, usually within one business day
- VAC is closed on weekends

Scan here for additional
appointment information
and request form →



Advising Appointments

- Available in-person or via zoom
- Appointments are typically 15-30 minutes depending on the nature of the appointment request
- Submit an appointment request form with availability across multiple day/times during advising hours
- Requests must be made at least two business days in advance (request form closes over the weekend)
- Students will receive an appointment confirmation through the VAC

**Drop-in advising hours are available in SME 241B on
Wednesdays from 10-11 am, no appointment is necessary.**

Department Location

- Structural and Materials Engineering Building (SME), second floor
- Use the north-facing doors for entrance to SME (Voigt Drive)
- In-person advising appointments: SME 241B



Curriculum

Chemical Engineering

- **CENG 100** prerequisites:
CENG 4 & CHEM 6B
- **CENG 102** prerequisites:
CENG 100, CHEM 6C, MATH 20C
- **CENG 113** prerequisites:
CENG 15, CENG 100, MATH 20D

All CENG core courses are taught only once per year.
CENG courses must be taken in the order listed on the curriculum plan to ensure all required prerequisites are fulfilled prior to enrollment.

FIRST YEAR		
FALL	WINTER	SPRING
CENG 4 (1 unit)	CHEM 6B	CHEM 6C
CENG 15	MATH 20B	CHEM 7L
CHEM 6A	PHYS 2A	MATH 20C
MATH 20A	G.E.	PHYS 2B
SECOND YEAR		
FALL	WINTER	SPRING
CENG 100	CENG 102	CENG 113
MATH 18	Adv. Chem.	Adv. Chem.
PHYS 2C + 2CL (2-units)	MATH 20D	MATH 20E
G.E.	G.E.	G.E.

NanoEngineering

- **NANO 20L** prerequisites:
NANO 4
- **NANO 102** prerequisites:
CHEM 6C
- **NANO 104** prerequisites:
MATH 20D, NANO 11

All NANO core courses are taught only once per year.

NANO courses must be taken in the order listed on the curriculum plan to ensure all required prerequisites are fulfilled prior to enrollment.

FIRST YEAR		
FALL	WINTER	SPRING
NANO 4 (1 unit)	NANO 11	CHEM 6C
NANO 15	CHEM 6B	MATH 20C
CHEM 6A	MATH 20B	MATH 18
MATH 20A	G.E.	PHYS 2A
G.E.		
SECOND YEAR		
FALL	WINTER	SPRING
NANO 20L (1 unit)	NANO 104	NANO 108
NANO 102	BILD 1	PHYS 2D
CHEM 7L	MATH 20E	G.E.
MATH 20D	PHYS 2C	G.E.
PHYS 2B		

Unit Breakdown

Major Requirements Summary	Chemical Eng	Nano Eng
General Ed - varies by college	varies	varies
Basic Sciences & Math	54 units	60 units
Chemistry Core	12 units	
Engineering Prep		12 units
Chem Eng Core	33 units	
Nano Eng Core		45 units
Process Laboratory & Design	16 units	
General Engineering	12 units	
Technical Electives	12 units	
Nano Eng Electives		20 units

Every course required for the major (except CENG 4 and CENG 199) must be taken for a letter grade, including all CENG, NANO and technical elective courses.

This also includes all MATH, BILD, CHEM, and PHYS courses. All major requirements must have a grade of C- or higher.

Technical Electives

CENG

Total of 3 Area of Specialization
Technical Electives:

- Biotechnology/Biochemical
- Microelectronic Devices & Materials
- Engineering Mechanics
- Engineering Science
- Environmental Engineering
- Materials Science & Engineering
- Nanotechnology
- Process Dynamics & Control
- Thermal Engineering & Systems

Pre-approved AS/TE courses are
listed on website and degree audit

NANO

Total of 5 Technical Electives:

- Courses are chosen from upper-division NANO courses (NANO 100-199) that are not part of the core curriculum
- Students must meet all required prerequisites
- Courses offered by other departments can be petitioned for approval to fulfill a NANO TE requirement

199s

Students can gain research experience
and receive credit for 2 Technical electives

- Enrollment in 199 courses must be across consecutive quarters for a total of 8 units
- Students and their chosen faculty advisor complete a 199 contract outlining research and final project prior to enrollment
- Upon completion of both 199s a petition is required along with the final report to receive TE credit

Petitions & EASy Requests

Petitions

When to submit a petition

- **Course Substitutions:**
 - Requesting to take an upper-division course as a Technical Elective in place of courses listed in the pre-approved lists
 - Requesting to substitute a major requirement with another course taken at UC San Diego
 - Requesting to substitute a UC San Diego course with another course taken at another institution. **Please note that core courses cannot be substituted. (NANO, CENG)** General Education courses (Math, Chemistry, Physics, etc.) should be routed directly to the corresponding department
- **Major Requirement Waiver**

How to submit a petition

1. [Log in to the Undergraduate Petition portal](#)
2. Select the correct petition type
3. Complete the petition request and include the justification for why the petition should be considered
4. Attach supporting documentation that will provide further information (course syllabus, etc)

Petition decision process

Submitted petitions are reviewed by the department advising office and then forwarded to our Undergraduate Affairs Committee for review. A decision outcome will be emailed to your student email account and a copy is uploaded to the VAC. If approved, your degree audit will be updated accordingly.

EASy Requests

When to submit an EASy

Students should submit an EASy request for the following reasons:

- Pre-approval for enrollment to a class that has **restrictions** (major, class level, etc)
- Pre-approval to waive a course **prerequisite** under special circumstances (must be outlined by the student in the justification section)

How to submit an EASy

1. [Log in to the UC San Diego Course Pre-authorization system](#)
2. Submit a request including all relevant information (be sure to complete the justification section as to why you are requesting approval and include the Section ID number)
3. A submission confirmation email will be sent to your student email account

EASy decision process

Your EASy request is first reviewed by a department advisor. If needed, the request is also forwarded to the teaching instructor for approval. Once your request has been finalized, you will receive an email to your student email account notifying you of the outcome.

Please keep in mind that it may take 5-7 business days for EASy requests to be processed.

An approval does **not** mean you are automatically enrolled in the course. Students must enroll themselves via WebReg and are subject to space availability.

WebPages

Department Website

Our department website, <https://nanoengineering.ucsd.edu/>, has several helpful pages that can help you navigate major related questions and concerns, including:

- **Major Requirements**
- **Curriculum (First Year & Transfer)**
- **Academic Planning**
- **Advising**
- **Petitions & EASys**
- **FAQs**
- **Student Resources**



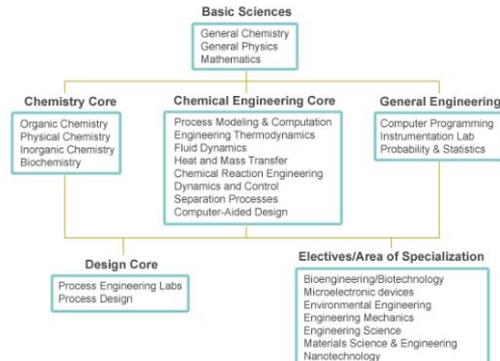
Major Requirements

- Admissions
- Degree Programs
 - B.S. Chemical Engineering
 - Mission & Objectives
 - Major Requirements
 - Technical Electives / A.S.
 - Courses
 - Curriculum
 - Transfer Students
 - B.S./M.S. Program
 - ABET
 - B.S. NanoEngineering

Chemical Engineering Undergraduate Major Requirements

To receive a B.S. in chemical engineering, students must complete 187* units for graduation. **Every CENG course (except CENG 4 and CENG 199) must be taken for a letter grade. All courses must have a grade of C- or above as a passing grade. This includes Math, Physics, and Chemistry courses that are part of the major requirements and all technical electives.** A one-unit introductory seminar (CENG 4) is required of all incoming freshmen and transfer students.

The organization is shown in the chart below. Course descriptions can be found [here](#).



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NanoEngineering Undergraduate Major Requirements

To receive a B.S. in NanoEngineering, students must complete 185* units for graduation. **Every NANO course (except NANO 4 and NANO 199) must be taken for a letter grade. All courses must have a grade of C- or above as a passing grade. This includes all lower division Math, Physics, Biology and Chemistry courses that are part of the major requirements.** A one-unit introductory seminar (NANO 4) is required of all incoming freshmen and transfer students.

*The 185 units for graduation include 48 units for G.E. requirements shown for Warren College students as an example to fulfill the general education requirements. Students in other colleges need to adjust the plan to match their own college requirements.

Effective Fall 2020, the specific breakdown is as follows:

General education requirements (varied units): This requirement is intended to fulfill the general education requirements (G.E.) from respective colleges.

Basic sciences and mathematics (sixty units): This lower-division requirement includes twenty-four units of mathematics (MATH 20A-E and MATH 18 (formerly MATH 20F)), sixteen units of physics (PHYS 2A–D), sixteen units of chemistry (CHEM 6A–C, 7L), and four units of biology (BILD 1).

Engineering preparation (twelve units): This requirement covers basics in computer programming, circuit analysis and circuits lab (NANO 15, 107, and 108).

NanoEngineering core (forty-five units): This requirement constitutes a one-unit seminar

Advising

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 - Advising

Undergraduate Advising

The Department of Chemical and Nano Engineering offers advising through the Virtual Advising Center (VAC), drop-in advising, and scheduled appointments. Please read through the information below to determine which form of advising best works for you.

Virtual Advising Center (VAC)

If you have a general, relatively straightforward questions, the [Virtual Advising Center \(VAC\)](#) is a great advising tool to use. Please submit all academic questions/concerns through the VAC (do not email). Include all inquiries, if there are multiple, in one VAC message. You can expect a response from an advisor within **1-3 business days**.

Drop-in Advising

Drop-in advising hours are held **in-person** on Wednesday mornings from 10:00 - 11:00 in SME 241B, no appointment necessary. Drop-in advising hours are subject to availability and can be canceled on occasion due to scheduling conflicts. SME 241B is located on the second floor of the Structural and Materials Engineering building at the corner of Voigt Drive and Matthews Lane. You can access the building using the entrance on the north side of the building, the south entrance doors are locked at all times. Once inside SME, take the stairs to the second floor and turn right. The second door on the left leads to a sitting area, you can wait there until an advisor is available.

Time	Wednesday
10:00 AM to 11:00 AM	SME 241B

Advising Appointments, via Zoom or in-person

Advisors are meeting with undergraduate students that have a scheduled appointment virtually via Zoom or

Petitions & EASys

Undergraduate Menu

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- Advising

[Home](#) / [Undergraduate Degree Programs](#) / [Undergraduate Advising](#)

Petitions and Enrollment Authorization System (EASy)

Petitions

An Undergraduate Student Petition must be completed for various issues which may arise during a student's academic career. *Pre-approval requests no longer require a petition and are made by submitting a request through EASy.*

Examples of student petitions:

- **Course Substitutions:**
 - Requesting to take an upper-division course as a Technical Elective in place of courses listed in the pre-approved lists
 - Requesting to substitute a UC San Diego course with another course taken at UC San Diego
 - Requesting to substitute a UC San Diego course with another course taken at another institution (Not necessary if the course is listed on assist.org as equivalent). General Education courses (Math, Chemistry, Physics, etc.) should be routed directly to the corresponding department
 - Requesting to substitute a course with courses taken abroad
 - Please note that **core courses cannot be substituted**. All NANO or CENG courses listed as part of the major curriculum, with the exception of technical electives, are designated as core courses and cannot be substituted with an alternate course.
- **Major Requirement Waiver**
 - Requesting to graduate with "D" in any course that is a major requirement except CENG or NANO core courses
 - Requesting to take graduate courses as part of CENG or NANO degree (must have 3.0 GPA and state which requirement you wish to complete with course)

How Do I Submit a Petition?

1. Have your UC San Diego student PID# and password ready.
2. Log in via [Undergraduate Petition](#) portal.
3. Complete the petition request with course information and the reason for the petition.
4. Optional: attach any supporting documents such as course syllabus, homework assignments, exam questions, project reports, etc., anything that will provide further information on the courses being

Undergraduate FAQs

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Home / Undergraduate Degree Programs / Undergraduate Advising

Undergraduate FAQ

Please review the frequently asked questions below according to your inquiry. If you have additional questions or cannot find an answer to your question, please contact our advising office via the VAC or schedule an appointment.

Advising Services

- ▼ [How do I contact the advising office?](#)
- ▼ [How can I schedule an appointment?](#)
- ▼ [What is the difference between College and department advising?](#)

Admission to the Department

- ▼ [What does "selective major" mean and what majors in the department are considered selective?](#)
- ▼ [As a continuing student, can I apply to switch into the Chemical Engineering major?](#)
- ▼ [As a continuing student, can I apply to switch into the NanoEngineering major?](#)

Admission to the Department as a Transfer

- ▼ [How do I find out if my major department has received my transcripts?](#)
- ▼ [How will I know what courses have transferred to UC San Diego?](#)

Student Organizations

AICHE

Welcome to
AICHE at UC San Diego

The UCSD Student Chapter of the American Institute of Chemical Engineers (AICHE at UC San Diego) aims to promote the professional development of chemical engineers at UCSD and to foster a community among its members through social activities, career-building events, and service opportunities. If you are an alumna/alumnus or company representative interested in speaking at one of our meetings, hosting an information session, or sponsoring an event, please contact us at aiche@ucsd.edu

Contact Us!

NanoEngineering and Technology Society
@ UC San Diego

Join NETS Discord

Our Mission

Jobs & Internships

Internship Resources:

UC San Diego Career Center - Hundreds of internships are listed through UC San Diego's Academic Internship Program and in Handshake. Micro-internships and research opportunities are also available through the Career Center.

Jacobs School Job & Internship Portal - Through the Jacobs portal, students can create their own profile and resume, view and apply for career opportunities, and gain access to potential employers. Companies use the database to proactively search for talented students for full-time jobs and internships.

Academic Internship Program - Offers students an opportunity to apply academic knowledge and analytical skills in professional settings while earning academic credit.

Global TIES: Teams in Engineering Service - Provides students with the opportunity to apply their skills in a real world setting while learning firsthand the role that engineering and technology can play in solving the problems that face their community and the world.

Department Faculty - Internship opportunities sent via email and directly by faculty members.

Career Resources:

UC San Diego Career Center - Can assist students with finding employment during their time at UC San Diego. The Career Center can help students plan ahead for the types of jobs they would like to pursue after graduation. Advising and events are offered throughout the year.

- **Science & Technology Virtual Career Fair**, October 2, 2024, 10 am - 2 pm
Hybrid fall career fair series. For students looking to secure an internship, full- or part-time position, this opportunity can help you take that next step by engaging with leading employers!

Jacobs School Job & Internship Portal - Companies use the database to proactively search for talented students for full-time jobs and internships.

- **Corporate Affiliates Program (CAP):** Over 150 companies are involved in the Corporate Affiliates Program for research. CAPs hosts recruitment fairs throughout the year.

IDEA Engineering Student Center - Provides career and internship resources and hosts events throughout the year such as the Disciplines of Engineering Career Fair (DECaF) and the Professional Evening with Industry (PEI).

Closing Notes

Important Reminders

- All major courses must be taken for a letter grade and earn a C- or higher (including Math, Chemistry, Physics courses)
- Any changes to the recommended course plan can cause significant delays - most core courses offered once per year
- Submit petitions and EASy requests early
- Plan ahead, don't wait until the last minute
- Visit our FAQ page, or contact an advisor for any questions
- When in doubt - ask an advisor!

Thank you!

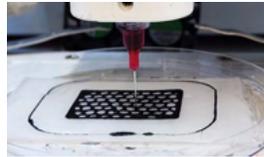
Recent Dept News

Finger Wrap Uses Sweat to Provide Health Monitoring



- A sweat-powered wearable has the potential to make continuous, personalized health monitoring as effortless as wearing a Band-Aid. Nano engineers at UC San Diego have developed an electronic finger wrap that monitors vital chemical levels—such as glucose, vitamins, and even drugs—present in the same fingertip sweat from which it derives its energy. Read coverage in [the Health section of Fox](#) and on [Cybernews](#).

Sustainable and Reversible 3D Printing



- A new 3D printing method developed by nano engineers at the Jacobs School is so simple that it uses only a polymer ink and salt water solution to create solid structures. The work, published in *Nature Communications*, has the potential to make materials manufacturing more sustainable and environmentally friendly. Read coverage in [Cosmos](#) and [New Atlas](#).