



**UTTyler**  
THE UNIVERSITY OF TEXAS AT TYLER

*Soules College of Business  
Department of Technology*

**TECH 3303 Introduction to Nanotechnology**  
Course Syllabus

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Time: ONLINE

Office Hours: ONLINE (Appointment only by email or zoom)

Summer I 2025

Section: 060

**Course Description**

Overview of the history, manufacture, and applications of nanomaterials. An emphasis will be placed on the ethics, societal impacts, and the future of nanotechnology.

**Course Objectives**

At the end of this course, participants will be able to:

- Understand the foundation nanotechnology by achieving at least 70% on assignments/exam.
- Understand the history of ethics by achieving at least 70% on assignments/exam.
- Understand how nanotechnology impact society by achieving at least 70% on assignments/exam.
- Understand the scaling of nanomaterials is by achieving at least 70% on assignments.
- Understand the characterization techniques of nanomaterials is by achieving at least 70% on assignments.
- Understand what nanofabrication is by achieving at least 70% on assignments.
- Understand the implications of nanotechnology on biology and medicine is by achieving at least 70% on assignments.
- Understand the impact of nanotechnology on microelectronics is by achieving at least 70% on assignments.

**Student Learning Outcomes:**

1. Describe the origins of nanotechnology. *(by assignments)*
2. Describe how nanotechnology impact society. *(by exam & final project)*
3. Identify characterization techniques of nanomaterials. *(by exam)*
4. Recognize the ethical implications of nanomaterials. *(by assignments)*
5. Describe the implications of nanotechnology through medicine. *(by assignments)*
6. Recognize the impact of microelectronics through the concept of miniaturization. *(by assignments)*

### Core Competencies:

1. *Computer-Based Skills* – the student will complete written assignments using the word software.
2. *Communication Skills* – the student will exhibit a mastery of both written and oral skills in completion and presentation of the assigned projects.
3. *Interpersonal Skills* – the student will interact in class discussion regarding real-world issues
4. *Problem Solving (Critical Thinking)* – the student will use conceptual thinking to analyze how nanomaterials can be used to benefit society.
5. *Ethical Issues in Decision Making and Behavior*- the student will gain an appreciation of the ethics of decision-making for implementing nano-related products.
6. *Personal Accountability for Achievement* – the student will complete project at the time designated by the instructor.

### Schedule of Assignments for Course

The course involves PowerPoint slides, discussions with critical feedback, current readings, YouTube videos, and zoom sessions.

Date of release of assignment	No.	Chapter/Assignment	Due Date at 11pm
Jun 8	1 1 1	<b>WELCOME</b> <b>MANDATORY ZOOM SESSION</b> <b>EXPLANATION OF FINAL PROJECT (ZOOM SESSION)</b>	<b>Jun 8</b>
Jun 2	2	Section 1 (Intro. to Nanotechnology--Nanotechnology--Is it It?)	Jun 2
Jun 2	2	<b>Assignment</b>	<b>Jun 9</b>
Jun 9	3	Section 1A (Intro. to Nanotechnology--Ethics of Science and Nanotechnology)	Jun 9
Jun 9	3	<b>Assignment</b>	<b>Jun 13</b>
Jun 15	4	Section 2 (Intro. to Nanotechnology--A Brief History of Nanotechnology)	Jun 15
Jun 15	4	<b>Assignment</b>	<b>Jun 19</b>
Jun 20	5	Section 3 (Intro. to Nanotechnology--A Snapshot of Today)	--
Jun 20	5	<b>NO ASSIGNMENT (Read PPT)</b>	--
<b>Jun 19</b>	-	<b>Exam1</b>	<b>Jun 22</b>
Jun 22	6	Section 4 (Intro. to Nanotechnology--The Uniqueness of the Nano-Scale)	Jun 22
Jun 22	6	<b>Assignment</b>	<b>Jun 26</b>
Jun 27	7	Section 5 (Intro. to Nanotechnology--How do we see things at the Nano-Scale: Intro. to Characterization Techniques)	Jun 27
Jun 27	7	<b>Assignment</b>	<b>Jun 30</b>
Jun 30	8	Section 9 (Intro. to Nanotechnology: Biology and Medicine)	Jun 30
Jun 30	8	<b>Assignment</b>	<b>July 2</b>
Jun 30	9	Section 10 (Intro. to Nanotechnology: Impact on Microelectronics)	Jun 30
Jun 30	9	<b>Assignment</b>	<b>July 3</b>

July 1	-	<b>FINAL PROJECT DUE</b>	July 5 (11:30pm)
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### **Tentative Course Requirements:**

#### *Assignments*

- Assignments (20 pts) (25%)
- Exam (1) (100 pts) (35%)
- Final Project (100 pts) (40%)

### **Grade Scale Breakdown:**

A=90 - 100%  
 B=80 - 89%  
 C=70 - 79%  
 D=60 - 69%  
 F=BELOW 60%

Note: 89.99999999999999 is still a B.

### **Using Canvas for Turning in Assignments**

CANVAS will be the tool for communication and turning in assignments. **ALL ASSIGNMENTS WILL OPEN UP AT 7AM AND TURNED IN PROMPTLY AT 11PM.**

Folders will be created for each assignment to attach your assignments. Each assignment will have a due date. **IF YOU DO NOT MEET THE DUE DATE FOR THE ASSIGNMENT, THE FOLDER WILL DEACTIVATE. THEREFORE, YOU WILL NOT BE ABLE TO TURN YOU ASSIGNMENT TO RECEIVE CREDIT.** The only exception to turn in an assignment after the due date is if you are ill (with a written excuse) or technical difficulties. **IT IS YOUR REPSONSIBILITY TO COMMUNICATE WITH TECHNICAL SERVICES TO RESOLVE YOU CANVAS MALFUNCTIONS.**

### **Canvas Assignment Discussions**

The online course format requires communication between students to stimulate conversation and feedback on the topics. Student responses on the discussion board should have quality content to demonstrate critical-thinking and creativity. In order to receive credit/points for every discussion posted, **you MUST respond to at least two students, if not, YOU WILL RECEIVE ONLY 15 POINTS!!!** *One to two sentences do not constitute a quality response; therefore, full credit will not be given.*

### **Late Assignment Penalty (PLEASE READ CAREFULLY!!!)**

You have at least 3-5 days to complete your assignments. I do understand that you have assignments in other courses, but the management is important. **If assignments are uploaded late, there will receive no points!!!** If you do experience computer problems, please contact Computer Support and email me documentation of time and date of the call. That will help me to also contact Computer Support to expedite your request to fix any problems you may have.

### **Grade Dispute**

If you have a disagreement with your final grade, you have **1 week to resolve it.** You must email all your assignments when meeting with the instructor by video or by phone.

**Date to Withdraw Without Penalty:****June 3, 2025 (1<sup>st</sup> Drop)****June 9, 2025 (2<sup>nd</sup> Drop)****Date of Final Exam:****July 5, 2025****University Policies and Information****Withdrawing from Class**

Students may withdraw (drop) from this course using the Withdrawal Portal. Withdrawing (dropping) this course can impact your Financial Aid, Scholarships, Veteran Benefits, Exemptions, Waivers, International Student Status, housing, and degree progress. Please speak with your instructors, consider your options, speak with your advisor, and visit the One-Stop Service Center (STE 230) or email [enroll@uttyler.edu](mailto:enroll@uttyler.edu) to get a complete review of your student account and the possible impacts to withdrawing. We want you to make an informed decision. UT Tyler faculty and staff are here for you and often can provide additional support options or assistance. Make sure to carefully read the *implications for withdrawing from a course and the instructions* on using the *Withdrawal Portal*.

Texas law prohibits students from dropping more than six courses during their entire undergraduate career\*. The six courses dropped includes those from other 2-year or 4-year Texas public colleges and universities. Consider the impact withdrawing from this class has on your academic progress and other areas, such as financial implications. We encourage you to consult your advisor(s) and Enrollment Services for additional guidance.

**CAUTION #1:** Withdrawing before census day does not mean you get a full refund.

Please see the Tuition and Fee Refund Schedule. **CAUTION #2:** All international students must check with the Office of International Programs before withdrawing. All international students are required to enroll full-time for fall and spring terms. **CAUTION #3:** All UT Tyler Athletes must check with the Athletic Academic Coordinator before withdrawing from a course. **CAUTION #4:** All veterans or military-affiliated students should consult with the *Military and Veterans Success Center*.

\* Students who began college for the first time before 2007 are exempt from this law.

**Artificial Intelligence Statement**

UT Tyler is committed to exploring and using artificial intelligence (AI) tools as appropriate for the discipline and task undertaken. We encourage discussing AI tools' ethical, societal, philosophical, and disciplinary implications. All uses of AI should be acknowledged as this aligns with our commitment to honor and integrity, as noted in UT Tyler's Honor Code. Faculty and students must not use protected information, data, or copyrighted materials when using any AI tool. Additionally, users should be aware that AI tools rely on predictive models to generate content that may appear correct but is sometimes shown to be incomplete, inaccurate, taken without attribution from other sources, and/or biased. Consequently, an AI tool should not be considered a substitute for traditional approaches

to research. You are ultimately responsible for the quality and content of the information you submit. Misusing AI tools that violate the guidelines specified for this course is considered a breach of academic integrity. The student will be subject to disciplinary actions as outlined in UT Tyler's Academic Integrity Policy. *Refer to the About This Course section of the UT Tyler Syllabus Module for specific information on appropriate use of AI in your course(s).*

### **Final Exam Policy**

Final examinations are administered as scheduled. If unusual circumstances require that special arrangements be made for an individual student or class, the Dean of the appropriate college, after consultation with the faculty member involved, may authorize an exception to the schedule. Faculty members must maintain student final examination papers for a minimum of three months following the examination date.

### **Incomplete Grade Policy**

If a student, because of extenuating circumstances, is unable to complete all of the requirements for a course by the end of the semester, then the instructor may recommend an Incomplete (I) for the course. The "I" may be assigned in place of a grade only when all of the following conditions are met: (a) the student has been making satisfactory progress in the course; (b) the student is unable to complete all coursework or final exam due to unusual circumstances that are beyond personal control and are acceptable to the instructor, and (c) the student presents these reasons before the time that the final grade roster is due. The semester credit hours for an Incomplete will not be used to calculate the grade point average.

The student and the instructor must submit an Incomplete Form detailing the work required and the time by which the work must be completed to their respective department chair or college dean for approval. The time limit established must not exceed one year. Should the student fail to meet all of the work for the course within the time limit, then the instructor may assign zeros to the unfinished work, compute the course average for the student, and assign the appropriate grade. If a grade has yet to be assigned within one year, then the Incomplete will be changed to an F, or NC. If the course was initially taken under the CR/NC grading basis, this may adversely affect the student's academic standing.

### **Grade Appeal Policy**

Disputes regarding grades must be initiated within sixty (60) days from the date of receiving the final course grade by filing a Grade Appeal Form with the instructor who assigned the grade. A grade appeal should be used when the student thinks the final course grade awarded does not reflect the grades earned on assessments or follow the grading scale as documented in the syllabus. The student should provide the rationale for the grade appeal and attach supporting document about the grades earned. The form should be sent via email to the faculty member who assigned the grade. The faculty member reviews the rationale and supporting documentation and completes the instruction section of the form. The instructor should return the form to the student, even if

a grade change is made at this level. If the student is not satisfied with the decision, the student may appeal in writing to the Chairperson of the department from which the grade was issued. In situations where there is an allegation of capricious grading, discrimination, or unlawful actions, appeals may go beyond the Chairperson to the Dean or the Dean's designee of the college from which the grade was issued, with that decision being final. The Grade Appeal form is found in the *Registrar's Form Library*.

NOTE: The Grade Appeal Form is different from the Application for Appeal form submitted to the Student Appeals Committee, which does not rule on grade disputes as described in this policy.

### **Disability/Accessibility Services**

In accordance with Section 504 of the Rehabilitation Act, Americans with Disabilities Act (ADA) and the ADA Amendments Act (ADAAA), the University of Texas at Tyler offers accommodations to students with learning, physical, and/or psychological disabilities. If you have a disability, including a non-visible diagnosis such as a learning disorder, chronic illness, TBI, PTSD, ADHD, or a history of modifications or accommodations in a previous educational environment, you are encouraged to visit <https://hood.accessiblelearning.com/UTTyler/> and fill out the New Student application. The Student Accessibility and Resources (SAR) office will contact you when your application has been submitted and an appointment with the Assistant Director Student Accessibility and Resources/ADA Coordinator. For more information, including filling out an application for services, please visit the SAR webpage at <https://www.uttyler.edu/disability-services>, the SAR office located in the Robert Muntz Library, LIB 460, email [saroffice@uttyler.edu](mailto:saroffice@uttyler.edu), or call 903.566.7079."

### **Military Affiliated Students**

UT Tyler honors the service and sacrifices of our military-affiliated students. If you are a student who is a veteran, on active duty, in the reserves or National Guard, or a military spouse or dependent, please stay in contact with your faculty member if any aspect of your present or prior service or family situation makes it difficult for you to fulfill the requirements of a course or creates disruption in your academic progress. It is important to make your faculty member aware of any complications as far in advance as possible. Your faculty member is willing to work with you and, if needed, put you in contact with university staff who are trained to assist you. The *Military and Veterans Success Center* (MVSC) has campus resources for military-affiliated students. The MVSC can be reached at [MVSC@uttyler.edu](mailto:MVSC@uttyler.edu) or via phone at 903.565.5972.

### **Students on an F-1 Visa**

To remain in compliance with Federal Regulations requirements you must do the following:

- Traditional face-to-face classes: Attend classes on the regular meeting days/times.
- Hybrid Classes: Attend all face-to-face classes convened by the instructor according to the schedule set for your specific course.



- Online course: Only one online course can count toward your full-time enrollment. Students are expected to be fully engaged and meet all requirements for the online course.

### **Academic Honesty and Academic Misconduct**

The UT Tyler community comes together to pledge that "Honor and integrity will not allow me to lie, cheat, or steal, nor to accept the actions of those who do." Therefore, we enforce the *Student Conduct and Discipline Policy* in the Student Manual Of Operating Procedures (Section 8).

### **FERPA**

UT Tyler follows the Family Educational Rights and Privacy Act (FERPA) as noted in University Policy 5.2.3. The course instructor will follow all requirements to protect your confidential information.

### **Absence for Official University Events or Activities**

This course follows the practices related to *Excused Absences for University Events or Activities* as noted in the Catalog.

### **Absence for Religious Holidays**

This course follows the practices related to *Excused Absences for Religious Holy Days as noted in the Catalog*.

### **Absence for Pregnant Students**

This course follows the requirements of Texas Laws SB 412, SB 459, SB 597/HB 1361 to meet the needs of pregnant and parenting students. Part of the supports afforded pregnant students includes excused absences. Faculty who are informed by a student of needing this support should make a referral to the Parenting Student Liaison. NOTE: Students must work with the Parenting Student Liaison in order to receive these supports. Students should reach out to the Parenting Student Liaison at [parents@uttyler.edu](mailto:parents@uttyler.edu) and also complete the *Pregnant and Parenting Self-Reporting Form*.

### **Campus Carry**

We respect the right and privacy of students who are duly licensed to carry concealed weapons in this class. License holders are expected to behave responsibly and keep a handgun secure and concealed. More information is available at <http://www.uttyler.edu/about/campus-carry/index.php>.