

Introduction to Inorganic Materials

EMA 3050, Section 3052

Class Periods: Tuesday: Period 2-3, 8:30 am – 10:25 am, Thursday: Period 3, 9:35 am – 10:25 am

Location: FLG 265

Academic Term: Fall 2025

Instructor:

Name: Aroba Saleem

Email Address: aroba.saleem@ufl.edu

Office Phone Number: 352-294-1789

Office Hours: TBA

Teaching Assistant/Peer Mentor/Supervised Teaching Student:

Please contact through the Canvas website

- TBA

Course Description

Uses, structure, processing and properties of inorganic materials, including metals, alloys, and ceramics. Scientific principles are introduced through discussion of developed inorganic materials for high technology applications (3 credit hours).

Course Pre-Requisites / Co-Requisites

EMA 3010, 3011

Course Objectives

To gain an understanding of the relationships between crystal structure, processing, and properties of inorganic materials including ceramic and metallic materials. To develop the ability to select appropriate materials to meet design specifications for engineering applications.

Materials and Supply Fees

None

Relation to Program Outcomes (ABET):

Outcome	Coverage*
1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics	High
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors	
3. An ability to communicate effectively with a range of audiences	Medium
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts	
5. An ability to function effectively on a team whose members together provide leadership, create a	

collaborative environment, establish goals, plan tasks, and meet objectives	
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions	
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	Medium

Required Textbooks and Software

a. Title: Modern Physical Metallurgy

- Author: R. E. Smallman & A. J. W. Ngan
- Publication: Butterworth-Heineman
- ISBN: 9780080982045

This book is available electronically through UF library.

b. Title: Modern Ceramic Engineering: Properties, Processing, and Use in Design

- Author: David W. Richerson
- Publication: CRC Taylor & Francis
- ISBN: 1574446932

Required Computer

Recommended Computer Specifications: <https://it.ufl.edu/get-help/student-computer-recommendations/>

HWCOE Computer Requirements: <https://www.eng.ufl.edu/students/advising/fall-semester-checklist/computer-requirements/>

Course Schedule

Details will be posted separately on Canvas and discussed in the class.

Attendance Policy, Class Expectations, and Make-Up Policy

Attendance is expected. There will be in-class graded and ungraded activities. Proper behavior in class is always important and leads to a relaxed and productive educational environment. Thus, eating, drinking, texting, reading of newspapers, working on homework for this or other courses, or other activities that are not part of the class are not allowed. Students who do not comply with these requirements or who behave disorderly or disrespectfully may be asked to leave the classroom. Leaving your cell phone on, leaving early or arriving late can be VERY distracting. All electronic devices (cell-phones, etc.) should be turned off or in silent mode.

If a student who is withheld from campus attends class, the student should be asked to leave the classroom and be reported to the Dean of Students Office.

Exams

You will take 3 exams throughout the semester. There will be no final exam. Each exam is weighted equally and will be worth 20% of your final grade. Requests for regrading must be made in writing and within one week after an exam has been returned; only exams completed in pen are eligible for re-grading. Make-up exams will be provided only with the prior approval of the instructor or excused absence. In general, acceptable reasons for excused absence include documented illness, serious family emergencies, special curricular requirements, military obligation, court-imposed legal obligations, religious holidays and participation in official university activities such as music performances, athletic competition or debate.

Homework

Homework problems will be assigned through e-Learning. Homework will be posted through the Canvas web site and must be submitted electronically by the posted deadline. Late homework assignments will not be accepted and will receive a score of zero. The lowest homework score will be dropped.

In-Class Activities

There will be an in-class activity in all or most weeks. One score will be dropped from the final grade.

Course Communication

E-Learning will be the primary avenue for communication and course management. All announcements for the course will be made using the announcement system on the E-Learning site.

Grade Evaluation

Assignment	Percentage of Final Grade
In class activities	20%
Homeworks	20%
Midterm Exams	60%
	100%

Grading Policy

Percent	Grade	Grade Points
93.4 - 100	A	4.00
90.0 - 93.3	A-	3.67
86.7 - 89.9	B+	3.33
83.4 - 86.6	B	3.00
80.0 - 83.3	B-	2.67
76.7 - 79.9	C+	2.33
73.4 - 76.6	C	2.00
70.0 - 73.3	C-	1.67
66.7 - 69.9	D+	1.33
63.4 - 66.6	D	1.00
60.0 - 63.3	D-	0.67
0 - 59.9	E	0.00

Academic Policies & Resources

To support consistent and accessible communication of university-wide student resources, instructors must include this link to academic policies and campus resources: <https://go.ufl.edu/syllabuspolices>. Instructor-specific guidelines for courses must accommodate these policies.

Commitment to a Positive Learning Environment

The Herbert Wertheim College of Engineering values varied perspectives and lived experiences within our community and is committed to supporting the University's core values.

If you feel like your performance in class is being impacted, please contact your instructor or any of the following:

- Your academic advisor or Undergraduate Coordinator
- HWCoe Human Resources, 352-392-0904, student-support-hr@eng.ufl.edu
- Pam Dickrell, Associate Dean of Student Affairs, 352-392-2177, pld@ufl.edu