

EMA 3011 – Fundamental Principles of Materials – Spring 2019
Section 9765 (14005)

1. Course Description: The fundamental principles of structure, reactivity and energies describing materials systems will be covered, directly relating individual principles to specific materials properties or functions. (3 credit hours)
2. Course Objectives: In this course the student is introduced to the way in which the fundamentals of organic materials and the physical laws of quantum mechanics influence materials properties and reactions.
Specific Objectives:
 - Become familiar with the fundamentals of organic chemistry and be able to apply them to the chemical and physical properties and processing of polymer materials.
 - Learn the laws of quantum mechanics and understand the way in which they influence materials properties.
3. Prerequisites: CHM 2046 or CHM 2096
4. Contribution of course to meeting the professional component: This course provides 3 credits towards engineering sciences.
5. Instructor -
Dr. Wolfgang Sigmund
Office location: 225 Rhines Hall
Telephone: 352-846-3343 (office)
E-mail address: sigmund@ufl.edu
Web site: <http://sigmund.mse.ufl.edu/>
Office hours: W, 10:00 am - noon
6. Teaching Assistant –
James Bryan
Phone: 352-397-1665
Email: bryan.james@ufl.edu
Office: 206 Rhines Hall
Hours: TBA
7. Meeting Times – MWF 7th period (1:55 pm to 2:45 pm)
8. Class schedule - Three hours of class time each week.
9. Meeting Location – NEB 202
10. Material and Supply Fees - None.
11. Textbooks and Software Required –
In order to lower costs for textbooks this class uses selected sections of open source textbooks. They can be downloaded from University of Minnesota or Rice University servers. Organic Chemistry, Volume 1, Tim Soderberg, University of Minnesota, Morris, January 2016, http://facultypages.morris.umn.edu/~soderbt/textbook_website.htm
University Physics Volume 3, S. Ling, J. Sanny, W. Moebis.
<https://openstax.org/subjects/science> Click on Physics Volume 3 for download.
This course will use e-learning/CANVAS as an electronic course management system. The course website will have reading and homework assignments, updated grades, and course announcements. You can access e-learning at <http://elearning.ufl.edu/> and log in with your Gatorlink and password.
You must have access to a computer and the following software to complete course assignments: word processing software, such as Word; spreadsheet software, such as Excel; Pdf writer.

12. Homework - Homework will be assigned and is usually due back the following week. The purpose of homework is to give students an opportunity to evaluate and apply their knowledge. Students may collaborate on homework; however, the actual submitted assignment must represent their own work and preparation. Note: Homework in its entirety must be word processed on your computer. For some problems you will require a suitable math package with graphing capability (e.g., Excel, MatLab, or others). Picture files (jpg, etc.) are not accepted. Files have to pdf, doc, docx, or pptx. Homework needs to be submitted online on e-learning. Email is not acceptable for submission of homework. Hard copies are also not accepted. If complex drawing are needed that you prefer to do by hand, you will have to scan these and paste into your pdf or word document. Do not cut and paste or copy directly from the internet, slides, or books. Answers have to be written in your own words. Drawings, graphs, etc. must be created by you. Equations and chemical structures must be created by you either via software or by hand drawing followed by scanning and embedding. The honor code applies. Some assignments use Turnitin to verify authenticity.

Homework will be evaluated on the following basis:

- Excellent work: 100
- Assignment acceptable: 85
- Homework submitted (showing effort): 70
- Homework submitted no or small effort: 0
- Note - late homework is not accepted: 0
- There is no make-up homework

13. Course Outline, Exams, Homework, Pop quizzes, Kahoot – Class starts January 7, 2019 and ends on April 24, 2019. Detailed outline with lecture contents is in a separate document. Slides, if used in class will be available on Canvas. Exams are scheduled in-class for Wednesdays on January 30, February 27, March 27, and Friday April 19, 2019. **The lowest exam score is dropped, therefore there are no make-up exams, early or late exams.** If more than one exam is missed due to official UF rules, a make-up oral exam at the end of the semester is given. Homework is due on 1/16, 1/23, 2/6, 2/13, 2/20, 3/13, 3/20, 4/3, 4/10, 4/17. You must check CANVAS for each assignment due date and time. **Lowest scores are dropped therefore there is no make-up homework, nor make-up pop quiz, nor make-up Kahoot.** Plan your missed classes accordingly.
14. Attendance and Expectations -All students are expected to attend class. Attendance also requires participation in class by solving problems in small groups and presenting the solutions in front of the class. Cell phones should be turned to silent. You will need a cell phone, computer or tablet to take part in some of the quizzes. Reading of newspapers, work on assignments for this or other classes, or other activities that are not part of the class are not allowed during class time. Positive points for participation can be collected via Kahoot participation. Negative points may be assigned for unallowed activities. Each negative point removes 1 Kahoot participation.

15. Grading –

3 of 4 exams (lowest score dropped)	60 %
Homework (2 lowest scores dropped)	20 %
Quizzes (2 lowest scores dropped)	10%
Class participation (Kahoot) (2 lowest dropped)	10%
Total	100%

16. Grading Scale –

%	≥94	≥90	≥87	≥84	≥80	≥77	≥74	≥70	≥67	≥64	≥61	<61
Letter	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E

Grades are not curved. There is no final exam in this class.

“C- will not be a qualifying grade for critical tracking courses. In order to graduate, students must have an overall GPA and an upper-division GPA of 2.0 or better (C or better). Note: a C- average is equivalent to a GPA of 1.67, and therefore, it does not satisfy this graduation requirement.” For more information on grades and grading policies, please visit: <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx> “

17. *Requirements for class attendance and make-up exams, assignments, and other work are consistent with university policies that can be found at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>*

The course drops the lowest exam score, and two low quiz scores as well as one low homework score. This is done so that students can attend professional meetings as well as take sick leave from an exam, miss class or homework. No make up is offered in cases where students miss up to the maximum of automatically dropped low scores. Students who have documentation for more missed work make up exams, pop quizzes will be offered at the end of the semester.

18. *Honesty Policy – All students admitted to the University of Florida have signed a statement of academic honesty committing themselves to be honest in all academic work and understanding that failure to comply with this commitment will result in disciplinary action. This statement is a reminder to uphold your obligation as a UF student and to be honest in all work submitted and exams taken in this course and all others.*

Note that failure to comply with this commitment will result in disciplinary action compliant with the UF Student Honor Code Procedures. See <https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>

19. *Accommodation for Students with Disabilities – Students Requesting classroom accommodation must first register with the Dean of Students Office. That office will provide the student with documentation that he/she must provide to the course instructor when requesting accommodation.*

20. *UF Counseling Services –Resources are available on-campus for students having personal problems or lacking clear career and academic goals. The resources include:*

UF Counseling & Wellness Center, 3190 Radio Rd, 392-1575, psychological and psychiatric services.

Career Resource Center, Reitz Union, 392-1601, career and job search services.

21. *Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact umatter@ufl.edu so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.*
22. *Software Use – All faculty, staff and student of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.*
23. Record keeping - all hard copy materials from this class that students did not pick up (graded exams, etc.) within 1 year of the end of class will be shredded on or after May 31, 2020.
24. Syllabus Changes – I reserve the right to make changes in the syllabus as needed. Any changes will be announced on CANVAS and in class.

Sections in italics are from the UF catalog or from the Herbert Wertheim College of Engineering suggested syllabus.