Course Syllabus
EMA 6114: Advanced Materials Principles II
Spring 2016
Sections: 4785 (non-EDGE); DEPT (EDGE)

1. Catalog Description (3 credit hours): Structure, properties, processing, and applications of semiconductors, metals, ceramics, polymers, and biomaterials. Structure and properties of thin films, surfaces, and interfaces.

2. Pre-requisites: EMA 6313

3. Course Objectives:
   To gain an understanding of:
   - the principles underlying the structure and properties of materials;
   - the electronic, magnetic, and optical properties of materials;
   - the structure and properties of surfaces, interfaces, composites, and nanostructures;
   - how processing affects structure and properties, and the selection of materials for particular applications.

4. Instructor: Dr. Jiangeng Xue
   a. Office location: 100C RHN
   b. Telephone: 846-3775
   c. E-mail address: jxue@mse.ufl.edu
   d. Class Web site: http://elearning.ufl.edu (e-Learning in Canvas)
   e. Office hours: Mondays 1:15-2:45 pm

5. Teaching Assistant: Daken Starkenburg
   a. Office location: 200 RHN
   b. E-mail address: dstarkenburg@ufl.edu
   c. Office hours: TBA

6. Meeting Times: MWF 8:30-9:20pm (2nd period)

7. Class/laboratory schedule: 3 classes per week

8. Meeting Location: NEB 100

9. Material and Supply Fees: $22.50 (Section 4785) or $268.50 (Section DEPT)

10. Textbooks and Software Required
    An Introduction to Materials Engineering and Science for Chemical and Materials Engineers
    By Brian S. Mitchell, 2004
    Publisher: John Wiley & Sons, Inc.
    ISBN-13: 978-0471436232

11. Recommended Reading:
    a. Materials Science and Engineering: An Introduction, William D. Callister, Wiley (Note that there ae several versions and editions available – any will suffice)
    b. Principles of Electronic Materials and Devices, 3rd Edition, S. O. Kasap, McGraw-Hill, 2006
    c. The Physics and Chemistry of Materials, by Joel I. Gersten and Frederick W. Smith, Wiley, 2001
    (available online: ftp://ftp.wiley.com/public/sci_tech_med/materials)

12. Course Outline: General topics include electronic, dielectric, optical, magnetic properties of materials; surfaces, interfaces, composites, and nanostructures; materials processing and selection. List of specific topics covered in lectures will be provided.

13. Attendance and Expectations: attendance strongly encouraged.

    Sections of this course are offered on UF EDGE. Lectures will be recorded, and the lecture videos are available on the UF e-Learning (Canvas) website for all students (not just those who registered for the EDGE section) to review at any time. However attendance is strongly encouraged for all non-EDGE students to enhance classroom learning and interaction. Cell phones should be turned off in class.

14. Grading:

Exam 1 (Wednesday, Feb. 3):	25%
Exam 2 (Friday, Feb. 26):	25%
Exam 3 (Monday, March 28):	25%
Exam 4 (Wednesday, April 20):	25%

    These are semester exams to be held in regular class time. The dates listed for the four equal-weight exams are tentative. Changes in exam dates will be announced at least one week ahead of the actual exam dates. There is no final exam.

    There will be weekly homework assignments, posted on the e-Learning website. However no submission is required and they will not count towards your course grades.

15. Grading Scale: Final letter grade will be assigned based on a student's overall performance during the semester. The following scale will be used as a guideline:

    A(≥90), A-(≥86), B+(≥82), B(≥79), B-(≥76), C+(≥73), C(≥70), C-(≥67),
    D+(≥64), D(≥61), D-(≥60), E(<60)

    "Graduate students need an overall GPA of 3.00 truncated and a 3.00 truncated GPA in their major (and in the minor, if a minor is declared) at graduation." For more information on grades and grading policies, please visit:
    http://gradcatalog.ufl.edu/content.php?catoid=4&navoid=907#grades

16. 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

    Except for emergencies, make-up exams are only allowed if requested at least one week before the regular exam time AND approved by the instructor. Make-up exams will differ from regularly-scheduled exams.

17. Honesty Policy – UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code." On all work submitted for credit by students at the UF, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

    Note that failure to comply with this commitment will result in disciplinary action compliant with the UF Student Honor Code Procedures.
    See http://www.dso.ufl.edu/sccr/procedures/honorcode.php

18. 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.

19. 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, http://www.counseling.ufl.edu/cwc/Default.aspx, counseling services and mental health services.
    - Career Resource Center, Reitz Union, 392-1601, career and job search services.
      University Police Department 392-1111

20. 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.

21. Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at https://evaluations.ufl.edu. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results/.