

ECEN 6863
ADVANCED MICROFABRICATION LABS
SPRING 2014

Course ID#:	12821
Instructor:	Weili Zhang Office: ES 201A Phone: 744-7297 Email: weili.zhang@okstate.edu
Class Hours:	Tues. & Thurs. 12:00 – 2:30 pm; ATRC 002M
Office Hours:	Tues. & Thurs. 10:30 –11:30 am; or by appointment
Website:	http://wzhang.okstate.edu/
Prerequisite	ECEN5843 Microelectronic Fabrication
References:	Peter Van Zant, Microchip Fabrication, 5th Edition, 2004, McGraw Hill, ISBN 0071432418 Richard C. Jaeger, Introduction to microelectronic fabrication, 1993, Addison-Wesley Peter V. Zant, Microchip Fabrication, 5 th edition, 2004, McGraw Hill, ISBN 0071432418
Course Topics:	Photo Lithography Etching: Wet Etching; Reactive Ion Etching (RIE) Evaporation: Thermal Evaporation; Electron Beam Evaporation Photomask Design: L-Edit Silicon Devices Processing Quartz Devices Processing SOS/GaAs Devices Processing MEMS Devices Processing
Grades:	Attendance: 10% Laboratory projects: 60% Laboratory reports: 30% Scale: 0-59% = F; 60-69% = D; 70-79% = C; 80-89% = B; 90-100% = A
Reports:	3-5 pages for each laboratory project Late report: Subtract 10% per day
Laboratory:	Groups at 2-3 students Grades for each step of fabrication process Unsafe handling of chemicals: 0 points for lab Improper handling of cleanroom equipment: 0 points for lab
Attendance:	Absent in safety lesson: 0 points for lab Arrive after roll has been taken will be counted absent unless you notify me after class An extra point on your final average by having no absence
Academic Dishonesty:	Academic dishonesty (cheating) will not be tolerated. Anyone suspected of academic dishonesty will be referred to the proper University authority as explained in <i>Oklahoma State University Student Rights and Responsibilities Governing Student Behavior</i> . Examples of academic dishonesty include: Copying laboratory report from books, journals, internet or other students; Modifying or altering a withdrawal slip.
Disabled Students:	If any member of this class feels that he/she has a disability and needs special accommodations of any nature whatsoever, I will work with you and the Office of Disabled Student Services, 315 Student Union, to provide reasonable accommodations to ensure that you have a fair opportunity to perform in this class. Please advise me of such disability and the desired accommodations at some point before, during, or immediately after the first scheduled class period.



OKLAHOMA STATE UNIVERSITY SYLLABUS ATTACHMENT Spring 2014

<http://academicaffairs.okstate.edu/faculty-a-staff>

**YOUR SUCCESS AS A STUDENT IS OUR TOP PRIORITY.
THIS INFORMATION IS PROVIDED TO ANSWER QUESTIONS MOST OFTEN ASKED BY STUDENTS.**

IMPORTANT DATES

Last day to add a class (without instructor permission)	1/21/2014
Last day to drop a course with no grade and no fees charged for courses	1/21/2014
Last day to withdraw completely from the University and receive a 100% refund	1/21/2014
Last day to add a class (requires instructor & advisor permission)	1/24/2014
Last day to drop a course with an automatic "W" and receive a 50% refund (requires advisor signature)	1/24/2014
Last day to withdraw completely from the University and receive a 50% refund	1/24/2014
Last day to post 6 week grades for 1000 & 2000 level courses	2/25/2014
Last day to file diploma application (for name to appear in Spring Commencement program)	4/1/2014
Last day to drop a class with an automatic "W"	4/11/2014
Last day to withdraw completely from the University with an automatic grade of "W"	4/11/2014
Last day to withdraw completely from all OSU classes with an assigned grade of "W" or "F"	4/25/2014
Pre-Finals week	4/28 – 5/2/2014
Final examinations	5/5 – 5/9/2014

Note: For outreach, internet, and short course drop/add dates, see the Short Courses link on the Registrar's Class Schedule [webpage](#).

SPRING SEMESTER HOLIDAYS

University Holiday	1/20/2014
Students' Spring Break	3/17 – 3/21/2014

DROPPING A COURSE AND WITHDRAWING FROM THE UNIVERSITY, students often confuse these terms.

Dropping a Course (or courses) may occur during the first twelve weeks of the semester. This means, however, that you are still enrolled in at least one other OSU course. (Remedial courses cannot be dropped without written permission of the advisor.) *After the twelfth week, a course may be dropped by petition but **only** when verifiable extenuating circumstances can be demonstrated.* Verifiable extenuating circumstances must be reasons beyond your control, such as illness or accidental injury. **Poor performance in class is not an extenuating circumstance.** You must obtain a petition to drop a course after the deadline. The Late Drop Committee must then approve the petition in order for it to be processed.

Withdrawing from the university means that you are dropping *all* of your courses and **are no longer enrolled for the current semester.** This may occur until the Friday before pre-finals week. The withdrawal process is initiated with your academic adviser in your student academic services office. For additional information and dates, go to: <http://academicaffairs.okstate.edu/policies-a-procedures/35-adding-a-dropping-policy>

ACADEMIC INTEGRITY POLICY

Oklahoma State University is committed to the maintenance of the highest standards of integrity and ethical conduct of its members. This level of ethical behavior and integrity will be maintained in this course. Participating in a behavior that violates academic integrity (e.g., unauthorized collaboration, plagiarism, multiple submissions, cheating on examinations, fabricating information, helping another person cheat, unauthorized advance access to examinations, altering or destroying the work of others, and fraudulently altering academic records) will result in an official academic sanction. Violations may subject you to disciplinary action including the following: receiving a failing grade on an assignment, examination or course, receiving a notation of a violation of academic integrity on your transcript, and being suspended from the University. You have the right to appeal the charge. Contact the Office of Academic Affairs, 101 Whitehurst, 405-744-5627. Go to <http://academicintegrity.okstate.edu/> for a video on OSU's academic integrity policy and additional information.



COPYRIGHT & FAIR USE POLICY OF COURSE MATERIALS

Course materials may not be published, leased, sold to others, or used for any purpose other than appropriate OSU-related individual or group study without the written permission of the faculty member in charge of the course and other copyright holders. This paragraph grants you a limited license giving you access to materials for this course, including PowerPoint slides, audio/video recordings, written, or other materials, for appropriate OSU-related educational use only. Lectures should not be recorded without permission from the faculty member and must not be further disseminated or shared.

CLASS ATTENDANCE

Class attendance is a critical component of learning; therefore, you are expected to attend and participate fully in all scheduled class meetings. Many instructors consider attendance so essential that your grade may be affected by your absence. *SOME DEPARTMENTS AND PROFESSORS HAVE MANDATORY ATTENDANCE POLICIES.* If no written attendance policy is provided before the last day to add a class without instructor permission, no penalty may be assessed for class absences although you may not be permitted to make up certain in-class activities. If you are required to participate in official university-sponsored activities or military training you should receive an excused absence unless the written course attendance policy indicates otherwise. If you will be absent from class for sponsored activities, you must provide prior notification of the planned absence to the instructor. You may be required to submit assignments or take examinations before the planned absence.

PRE-FINALS WEEK POLICY

Final examinations are scheduled at the end of each semester and are preceded by pre-finals week, which begins seven days prior to the first day of finals. During pre-finals week, all normal class activities will continue; however, no assignment, test, or examination accounting for more than 5% of the course grade may be given; and no activity or field trip may be scheduled that conflicts with another class. This excludes

makeup and laboratory examinations, out-of-class assignments (or projects) made prior to pre-finals week, and independent study courses. No student or campus organization may hold meetings, banquets, receptions, or may sponsor or participate in any activity, program, or related function that requires student participation. For additional information, contact the Office of Academic Affairs, 405-744-5627, 101 Whitehurst.

FINAL EXAM OVERLOAD POLICY

In the event that you have three or more final exams scheduled for a single day, you are entitled to arrange with the faculty member instructing the highest numbered course (4 digit course number) or two highest, if you have four finals on one day, to re-schedule that examination(s) at a time of mutual convenience during final exam week. You may not reschedule common final exams unless you have common exams scheduled at the same time. You should submit this request in writing, with a copy of your class schedule, at least two weeks prior to the beginning of final exam week. The faculty member has one week prior to the beginning of final exam week to arrange a mutually convenient time for administration of the final exam, after which you take the request to the Office of Academic Affairs, 101 Whitehurst.

ALERTS AND RESCHEDULING

If the OSU campus officially closes due to inclement weather or other emergencies, alerts are provided to local news media and are posted on the OSU website. Exams, classes, or assignments that are missed in these circumstances may be rescheduled at times that are outside the normal meeting schedule for the class. If valid, documented circumstances prohibit students from attending the rescheduled classes, instructors should provide reasonable alternative means for makeup.

INFORMATION TECHNOLOGY

Student Email - OSU uses your OKSTATE.EDU email address as a primary form of communication. Students are expected to check their OSU email on a frequent and consistent basis to remain informed of their official university business. If you do not use the OSU email system you must redirect your okstate.edu email using the Orange-Key System (www.okey.okstate.edu). Failure to maintain an accurate email address may result in missed or lost university communications. For email assistance contact the IT Helpdesk at 405-744-HELP (4357).

Computer Labs - A complete description of computer labs and hours of operations are available at their website: <https://it.sharepoint.okstate.edu/TechnologySupport/DeskSide/default.aspx>. Lab information is also available by calling the Information Technology Help Desk, 405-744-HELP (4357).

LIBRARY HOURS

Edmon Low Library (405-744-5029)

Digital Library Toll Free: (1-877-744-9161)

Monday-Thursday	7:00 a.m.-2:00 a.m.
Friday	7:00 a.m.-10:00 p.m.
Saturday	9:00 a.m.-10:00 p.m.
Sunday	9:00 a.m.-2:00 a.m.

*For holiday and intersession hours, check

<http://www.library.okstate.edu/services/hours.htm>.

*Contact the following for information on hours of operation:

Architecture Library	405-744-6047
Curriculum Materials Library	405-744-6310
Veterinary Medicine Library	405-744-6655

Library web address: www.library.okstate.edu

GENERAL EXPECTATIONS OF STUDENTS

By enrolling at Oklahoma State University, you accept responsibility for complying with all University policies and contracts, and for local, state and federal laws on- or off-campus that relate to the University's mission.

The Student Rights and Responsibilities Governing Student Behavior document explains the standards of behavior expected of you, processes in place for enforcing the rules, and the University's response to violations <http://studentconduct.okstate.edu/>

In general, the University expects you to respect the rights of others and authorities, represent yourself truthfully and accurately at all times, respect private and public property, and take responsibility for your own actions

and the actions of your guests. Call 405-744-5470 for more information.

SEEK ANSWERS TO YOUR QUESTIONS

The OSU faculty and staff want you to be successful in your educational pursuits. If you have questions or concerns, seek help EARLY. We are here to assist you.

WHERE TO GO FOR HELP

Instructor - If you have questions regarding your class, talk to your instructor. Faculty members usually include their office hours and/or phone number in the class syllabus. If you cannot locate this information, set a time to meet with your instructor by speaking with him/her prior to or immediately following your class session or check with the departmental office on when the instructor may be available.

Academic Advisor - All students will benefit by conferring with an advisor on a regular basis. If you do not know your advisor, or are unhappy with your advisor, talk to the Student Academic Services Director for your college.

Academic911.okstate.edu - Your online resource for academic and personal success, sponsored by Student Affairs.

Mathematics Learning Success Center

5th Floor, Edmon Low Library/405-744-5818

<http://www.math.okstate.edu/>

Tutors are available to answer questions for classes ranging from Beginning Algebra through Calculus II. Tutoring for Differential Equations and Linear Algebra is offered at specific times.

Writing Center

104 Morrill Hall/405-744-6671

<http://osuwritingcenter.okstate.edu/>

The Writing Center helps writers throughout the composing process; you should plan to visit early and often throughout the semester, not just the day before an assignment is due. Tutors will work with you to improve your brainstorming, organizational, and composing techniques.

Learning & Student Success Opportunity (LASSO) Center

021 Classroom Building/405-744-3309

<https://lasso.okstate.edu/>

LASSO offers free individual tutoring for a variety of courses.

University Counseling Services

320 Student Union/405-744-5472 or 405-744-7007

<http://ucs.okstate.edu/>

Professional counselors offer confidential personal and/or career counseling.

Office of Student Disability Services

315 Student Union/405-744-7116

<http://sds.okstate.edu/>

According to the Americans with Disabilities Act, each student with a disability is responsible for notifying the University of his/her disability and requesting accommodations. If you think you have a qualified disability and need special accommodations, you should notify the instructor and request verification of eligibility for accommodations from the Office of Student Disability Services. Please advise the instructor of your disability as soon as possible, and contact Student Disability Services, to ensure timely implementation of appropriate accommodations. Faculty has an obligation to respond when they receive official notice of a disability but are under no obligation to provide retroactive accommodations. To receive services, you must submit appropriate documentation and complete an intake process during which the existence of a qualified disability is verified and reasonable accommodations are identified.

Office of Equal Opportunity

408 Whitehurst/405-744-9153

Oklahoma State University policy prohibits discrimination based upon gender, race, color, ethnicity, age, religion, national origin, veteran's status, disability, or sexual orientation. If you believe that you are being discriminated against, please contact this office.