

College of Engineering, SIUC
UCOL 101E – Foundations of Inquiry: Introduction to Engineering
Fall 2014

Instructors:

James Mathias, Ph.D., P.E.

Course Coordinator

Associate Professor

Mechanical Engineering and Energy Processes

Office: EGRE 024

Phone: 618-453-7016

Email: mathias@enr.siu.edu

Office Hrs: MWF 1 - 3 p.m.

James Phegley, Ph.D.

Senior Lecturer

Electrical and Computer Engineering

Office: EGRE 210

Phone: 618-453-2120

Email: phegley@enr.siu.edu

Office Hrs: MWF 1 - 3 p.m.

Guest Instructors:

Dr. John Warwick, Professor & Dean, College of Engineering

Dr. Sanjeev Kumar; Professor & Chair, Department of Civil & Environmental Engineering

Dr. Sam Spearing; Associate Professor, Department of Mining & Mineral Resource Engineering

Dr. Carl Spezia; Associate Professor & Electrical Engineering Technology Coordinator, Department of Technology

Dr. Julie Dunston; Associate Professor & Industrial Technology Coordinator, Department of Technology

OBJECTIVES

This course has the following objectives that are aimed at enhancing your success as a student at SIUC and its College of Engineering:

1. Students will begin to develop a broad, comprehensive perspective on higher education.
2. Students will contribute to and help maintain a safe, supportive and positive university learning experience for themselves and their academic peers.
3. Students will understand and begin to practice basic communication skills appropriate to the University setting.
4. Students will begin the process of understanding critical thinking in the university context.
5. Students will understand and apply information technology in support of their academic work.
6. Students should begin to develop knowledge of their own abilities, skills, and life demands so that they can develop these more effectively in pursuit of their academic goals.
7. Students should begin to develop an understanding of career opportunities available to them and the professional responsibility associated with that career.
8. Students will become information literate, using critical thinking and problem solving skills to build an intellectual framework for discovering, using and evaluating information.
9. Students will demonstrate an understanding of inquiry and/or creative processes from disciplinary and/or interdisciplinary perspectives specific to their College.
10. Through hands-on laboratory projects and additional activities, students will be able to appreciate the role and importance of math and science in engineering.

RESOURCES

Recommended Text: Stephan, Bowman, Park, Sill, and Ohland, *Introduction to Engineering - Southern Illinois University*, Pearson Custom Library, New York, 2012 (ISBN 1256579076)

Desire2Learn: Go to: online.siu.edu

College Website: <http://www.engr.siu.edu>

GRADING CRITERIA

Homeworks (in class and in lab)	25%
Lab Reports	25%
Midterm Exam - Wed, Oct 1, 2014	25%
Final Exam – Wed, Dec 10, 2014, 12(noon)	25%

HOMEWORK (some given in class and some given in lab sections)

The due date for homework will be specified when the assignment is given. All assignments must be submitted in the classroom, not in instructors' mailboxes, and are due at the beginning of class. Late homework will not be accepted. Homework submitted for a grade must be neat and completed on 8.5" by 11" paper. Engineering quadrille paper is preferred. At the top of the first page, list your name, group number, the course number, assignment number, and the date submitted. Homework grades will at times be based upon your demonstration of problem solving skills, and in other cases, simply whether you have diligently attempted each problem.

LAB REPORTS

Laboratory reports will definitely be assigned with the laboratory projects associated with the Mechanical, and Electrical and Computer Engineering projects and likely also with some of the other projects. The text of the laboratory reports will be typed and follow the format given for that laboratory project.

EXAMS

There will be 2 exams: a midterm and final exam. The midterm exam will cover the material presented in large group lectures before the midterm exam while the final exam will focus on the laboratory projects now that all students have completed all projects and the small number of large group lectures held after the midterm exam. There will be no make-up exams.

ASSIGNMENT OF GRADES

The following grading scale will be strictly adhered to throughout the semester:

<i>GRADE</i>	<i>SCORE</i>
A	90% – 100%
B	80% – 89%
C	70% – 79%
D	60% – 69%
F	< 60%

ATTENDANCE

Attendance will be recorded, and you are expected to attend all lectures and lab sessions. However, if you find it necessary to be absent, there is no distinction between excused and unexcused absences, and the following policy will apply: (1) for 1 through 3 absences, no penalty will be incurred; (2) for 4 through 10 absences, a student's overall grade will be reduced by 3% for each missed class/lab session; (3) if a student has more than 10 absences, she/he will NOT pass the course.

EXPECTATIONS

The students in the class have the responsibility to maintain an atmosphere in which no person is impeded from learning. Turn off all electronic devices in class to avoid distractions to you and others. One aspect of this course focuses on note taking, instead of a lecture about note taking, this principle will be taught by asking about what notes have been taken during large group lectures and quickly checking the notes the students have taken at the end of the lecture to give credit for attendance that day. If you have a very strong reason for taking notes electronically please come see me. Be prompt for all classes, labs and appointments; arriving more than 5 minutes after class begins will be considered an absence. Furthermore, active class participation and group discussions will make our time together more enjoyable and successful.

OFFICE HOURS AND ELECTRONIC MAIL

We encourage you to seek assistance and advisement when you have trouble understanding course concepts or homework problems. The recommended method for contacting the teaching assistant or instructor is during office hours. As an alternative, use e-mail to instructors for short questions, to arrange an appointment, or to suggest a need for clarification of assignments. If our doors are open and we are available for discussion, you are welcome to come in.

Please be prepared with specific questions when you come to an office hour or appointment. You should provide evidence that you have worked on the problem or topic to which your question pertains.

ACADEMIC INTEGRITY

Academic integrity involves a student's obligation to act with honesty and to respect the rights of other in carrying out all academic assignments, including regularly assigned homework and laboratory reports. Students are expected to exhibit this quality at all times. The University policy concerning academic dishonesty will be strictly adhered to in both the laboratory and lecture components of this course. Violations of this policy include

- Plagiarism or representing the work of another as one's own work
- Preparing work for another that is to be used as that person's own work
- Cheating by any method or means
- Knowingly falsifying or manufacturing scientific or educational data and representing the same to be the result of scientific or scholarly research
- Knowingly furnishing false information to a university official relative to academic matters
- Soliciting, aiding, abetting, concealing, or attempting conduct in violation of this policy

Any violation of the policy will result in immediate failure of this course, conduct board penalties, or both. If you have any questions about whether a particular behavior is in violation of the University's policy, you should ask before proceeding.

*"We emphasize student achievement and success because achievement and success are essential if we are to shape future leaders and transform lives."*¹

<http://pvcaa.siu.edu/>

IMPORTANT DATES *

Semester Class Begins.....	08/18/2014
Last day to add a class (without instructor permission):	08/24/2014
Last day to withdraw completely and receive a 100% refund:	08/31/2014
Last day to drop a course using SalukiNet.....	10/26/2014
Last day to file diploma application (for name to appear in Commencement program):	10/31/2014
Final examinations:	12/8-12/12/2014

Note: For outreach, Internet, and short course drop/add dates, visit Registrar's Academic webpage <http://registrar.siu.edu/>

FALL SEMESTER HOLIDAYS

Labor Day 09/01/2014

Fall Break 10/11-10/14/2014

Veterans Day 11/11/2014

Thanksgiving Vacation 11/26-11/30/2014

WITHDRAWAL POLICY ~ Undergraduate only

Students who officially register for a session may not withdraw merely by the stopping of attendance. An official withdrawal form needs to be initiated by the student and processed by the University. For the proper procedures to follow when dropping courses and when withdrawing from the University, please visit <http://registrar.siu.edu/pdf/ugradcatalog1314.pdf>

INCOMPLETE POLICY ~ Undergraduate only

An INC is assigned when, for reasons beyond their control, students engaged in passing work are unable to complete all class assignments. An INC must be changed to a completed grade within one semester following the term in which the course was taken, or graduation, whichever occurs first. Should the student fail to complete the course within the time period designated, that is, by no later than the end of the semester following the term in which the course was taken, or graduation, whichever occurs first, the incomplete will be converted to a grade of F and the grade will be computed in the student's grade point average. For more information please visit: <http://registrar.siu.edu/grades/incomplete.html>

<http://registrar.siu.edu/grades/incomplete.html>

REPEAT POLICY

An undergraduate student may, for the purpose of raising a grade, enroll in a course for credit no more than two times (two total enrollments) unless otherwise noted in the course description. For students receiving a letter grade of A,B,C,D, or F, the course repetition must occur at Southern Illinois University Carbondale. Only the most recent (last) grade will be calculated in the overall GPA and count toward hours earned. See full policy at <http://registrar.siu.edu/pdf/ugradcatalog1314.pdf>

<http://registrar.siu.edu/pdf/ugradcatalog1314.pdf>

GRADUATE POLICIES

Graduate policies often vary from Undergraduate policies. To view the applicable policies for graduate students, please visit <http://gradschool.siu.edu/about-us/grad-catalog/index.html>

<http://gradschool.siu.edu/about-us/grad-catalog/index.html>

DISABILITY POLICY

Disability Support Services provides the required academic and programmatic support services to students with permanent and temporary disabilities. DSS provides centralized coordination and referral services. To utilize DSS services, students must come to the DSS to open cases. The process involves interviews, reviews of student-supplied documentation, and completion of Disability Accommodation Agreements. <http://disabilityservices.siu.edu/>

<http://disabilityservices.siu.edu/>

PLAGIARISM CODE

http://pvcaa.siu.edu/_common/Document/Plagiarism/041612/0520Preventing%20Plagiarism.pdf

SALUKI CARES

The purpose of Saluki Cares is to develop, facilitate and coordinate a university-wide program of care and support for students in any type of distress—physical, emotional, financial, or personal. By working closely with faculty, staff, students and their families, SIU will continue to display a culture of care and demonstrate to our students and their families that they are an important part of the community. For information on Saluki Cares: (618) 453-5714, or siucares@siu.edu, <http://salukicare.siu.edu/index.html>

<http://salukicare.siu.edu/index.html>

EMERGENCY PROCEDURES

Southern Illinois University Carbondale is committed to providing a safe and healthy environment for study and work. We ask that you become familiar with the SIU Emergency Response Plan and Building Emergency Response Team (BERT) programs. Emergency response information is available on posters in buildings on campus, available on BERT's website at www.bert.siu.edu, Department of Safety's website at www.dps.siu.edu (disaster drop down) and the Emergency Response Guideline pamphlet. Instructors will provide guidance and direction to students in the classroom in the event of an emergency affecting your location. *It is important that you follow these instructions and stay with your instructor during an evacuation or sheltering emergency.*

INCLUSIVE EXCELLENCE

SIU contains people from all walks of life, from many different cultures and sub-cultures, and representing all strata of society, nationalities, ethnicities, lifestyles, and affiliations. Learning from and working with people who differ is an important part of education as well as an essential preparation for any career. For more information please visit: <http://www.inclusiveexcellence.siu.edu/>

MORRIS LIBRARY HOURS

<http://www.lib.siu.edu/about>

LEARNING AND SUPPORT SERVICES

Help is within reach. Learning support services offers free tutoring on campus and math labs. To find more information please visit the Center for Learning and Support Services website:

Tutoring: <http://tutoring.siu.edu/>

Math Labs http://tutoring.siu.edu/math_tutoring/index.html

WRITING CENTER

The Writing Center offers free tutoring services to all SIU students and faculty. To find a Center or Schedule an appointment please visit <http://write.siu.edu/>

AFFIRMATIVE ACTION & EQUAL OPPORTUNITY

Our office's main focus is to ensure that the university complies with federal and state equity policies and handles reporting and investigating of discrimination cases. For more information visit: <http://diversity.siu.edu/#>

<http://diversity.siu.edu/#>

Additional Resources Available:

SALUKINET: <https://salukinet.siu.edu/cp/home/displaylogin>

ADVISEMENT: <http://advisement.siu.edu/>

¹ Southern Illinois University Carbondale, (2013). Pathways to Excellence: A Strategic Plan. Retrieved from http://siuc.edu/siu.edu/_common/Document/041612/0520Preventing%20Plagiarism.pdf

INDUSTRIAL MENTORS

The following are designated industrial mentors that are available to assist you in your academic career. These are individuals that have agreed to respond to your questions, provide guest lectures, and offer academic and career advice. Simply use the contact information provided!

Last	First	TITLE & COMPANY	ADDRESS	E-MAIL ADDRESS	TELEPHONE NO.
Abba	Michael	General Supervisor, Admin & Business Services AmerenCIPS	1800 W. Main Marion, IL	mabba@ameren.com	618-993-4633
Blake	Rod	Segate Technology Manager	1280 Disc Dr. Shakopee, MN	rodnev.d.blake@seagate.com	952-402-2529
Chan	Ting Pong (Jack)	Water Resources Engineer Land Resource Management Group (LRMG)	525 E. North St., Suite F Bradley, IL	jchan@lrmg.net	815-928-8990, x228
Clendenin	Ralph	Mfg. Engineering Manager Spartan Light Metal Products	510 E. McClurken Avenue Sparta, IL	Rclendenin@spartanlmp.com	618-443-4452, x1219
Edwards	Glenn	Aisin Manufacutre	11000 Redco Dr., Marion, IL	g-edwards@aisinil.com	
Eberhart	Gina	Engineer AmerenIP	1050 West Blvd. Belleville, IL	GEBERHART@ameren.com	618-234-6276 or 618-443-2636
Gaines	Sue	NASA	TA-F, Kennedy Space Center, FL 32899	Sue.R.Gaines@nasa.gov	(321)867-8497
Hinchee	Beth	Engineering Recruiting Manager Caterpillar, Inc	MOS9 PO Box 600 Mossville, IL	hinchee_beth_a@cat.com	309-578-8726
Hooks	Dean	Principal Manager Boeing	100 Airport Way, MC S1003245 St. Louis, MO	dean.c.hooks@boeing.com	(314) 232-2398
Hoyson	Chris	Vice President The Whiting-Turner Contracting Company		Chris.Hoyson@Whiting-Turner.com	410.859.8610
Johnson	Michael R.	Mgr. Process Control United States Steel (USS) Granite City Works	20th & State Street Granite City, IL	MRJohnson@uss.com	618-451-3456
Lomax	Ozzie	Ameren UE Meramec Plant	8200 Fine Road St. Louis, MO	olomax@ameren.com	314-992-7201
Lo	Howard	Founder Mastersoft Inc.	440 W. Torrey Pines Way Vernon Hills, IL	hlo@visitview.com	650-400-3210
Parry	Travis M.	Water Resources Department Christopher B. Burke Engineering, Ltd.	9575 W. Higgins Road Rosemont, IL	tparry@cbbel.com	847-823-0500
Porier	Jim	Product Development Engineer Caterpillar, Inc	AB3465 100 N.E. Adams Street, Peoria, IL	cdnrdnk@yahoo.com	309-494-1568
Reitz	Paul H.	Principal, Reitz & Jens, Inc.	1055 Corporate Square Dr., St. Louis	preitz@reitzjens.com	314-993-4132,x224
Riter	Bruce	Attorney At Law Law Office of Bruce D. Riter	101 1st St. Los Altos Hills, CA	bruce@riter.net	
Robinson	Debbi Cecil	Human Resources Manager Delta Companies, Inc.	114 S. Silver Springs Rd. Cape Girardeau, MO	drobinson@deltacos.com	573-334-5261
Solverson	Matt	General Dynamics	8820 Route 148, PO Box 278, Marion	MSolverson@MAR.GD-OTS.COM	
Wade	Chuck	IBM	650 Harry Road, San Jose, CA	cwade@almaden.ibm.com	408-927-1650
Wells	Brian	Mgr. Product Support Operations John Deere		WellsBrianA@JohnDeere.com	309-765-1993
White	David	Cadence		dwhite@cadence.com	408-260-7561
Howard	Wilson	Intel	5200 N.E. Elam Young PKWY MS EY2-0/ Hillsboro, OR	howard.wilson@intel.com	503-696-3959
Rathish	Jayabharathi	Intel Sr. Staff CAD Engr.	1900 Prairie City Road Folsom, CA	rathish.Jayabharathi@intel.com	916-356-1638
Sanders	Bert	eServ	8200 N. Allen Road, Peoria, IL	Bert.Sanders@ps.net	(309) 740-7565
Puzey	Michelle	John Deere Seeding Group		PuzeyMichelleC@JohnDeere.com	(309) 765-7264
DeRuntz	Stephanie	DePuy Orthopaedics	700 Orthopaedic Dr., Warsaw, IN 46581	sderuntz@its.jnj.com	574-372-7284
Feathers	Tim	CDM Federal Programs	1050 North Reed Station Road, Suite D Carbondale, IL 62902	FeatherTD@cdm.com	618.351.4530
Kelsey	Kelly	Jacob's Engineering	One Financial Plaza 501 N. Broadway St. Louis, Missouri 63102-2121	kelly.kelsy@jacobs.com	314-335-4000
Grant	Mullin	Boeing Defense, Space & Security: Propulsion Engineering	St. Louis, Mo	Grant.Mullen@boeing.com	(314)-233-4720
Haley	Boswell	ATS, Advaced Technology Services	Peoria, IL	hboswell@advancedtech.com	309.693.6312
Traci	Abney	Recent Grad	St. Louis, MO	traciabney@sbcglobal.net	

STUDENT GROUPS

The class will be divided into 4 groups for the laboratory portion of this course. You can determine your group from the following list, which are alphabetical by first name. If your name is not on the list, please see Dr. Mathias to be added to a group.

	<u>Group 1 (A - Dalton)</u>
1	Abdulmajeed A. Almuzaini
2	Adam J. Greenacre
3	Alexander M. Pozo
4	Alexis Fulcher
5	Amadeusz D. Lord
6	Andrew T. Will
7	Austin M. Wojtanowski
8	Austin S. Bechtel
9	Benjamin A. Hornsey
10	Benton P. Bailey
11	Brad J. Vahling
12	Brendan M. Atkisson
13	Brenden A. Tisler
14	Brennan T. Bourgeois
15	Brett H. Bolek
16	Brian Barraza
17	Cameron B. Hupp
18	Cameron P. Lenzini
19	Chase D. Jackson
20	Chrystal M. McKiski
21	Clinton T. Jones
22	Connor E. Atkisson
23	Corey J. Albrecht
24	Dakota M. Oria
25	Dalton E. Williams
	<u>Group 3 (Katherine - Peter)</u>
1	Katherine J. Grindstaff
2	Keri C. Fenlon
3	Kevin I. Jenkins
4	Kyle J. Wagner
5	Logan N. Jacks
6	Luis A. Castillo
7	Marcia B. Rodrigues
8	Mariah A. Manis
9	Matthew F. Malinowski
10	Mehdi A. Shafiee
11	Michael L. Enger
12	Michael R. Wolfe
13	Michael T. Brunner
14	Michael T. Lawrence
15	Miles D. McAtee
16	Mohammed I. Algamedi
17	Mohammed S. AlSubaie
18	Nicholas K. Jamieson
19	Noah Berman
20	Olivia S. Donnel
21	Patrick T. O'Sullivan
22	Paul Coen
23	Paul L. Schumacher
24	Payton M. Dudley
25	Peter L. Bonvillain

	<u>Group 2 (Daniel - Kaleb)</u>
	Daniel G. Ferguson
	Devon T. Johnson
	Edwin A. Roman
	Eleysi Pagan
	Elijah L. Fennell
	Elijah S. Greer
	Erica B. Kelly
	Evan M. Gebhardt
	Faisal Almarri
	Garrett R. Pferrer
	Gregory P. Wordel
	Gregory R. Janis
	Jacob A. Strutner
	Jacob M. Bell
	Jake B. Morris
	Jared E. Childress
	Jenna M. Maurer
	Jeremiah S. Roberts
	Joseph A. Voypick
	Joseph P. Castrejon
	Joshua L. Hancock
	Joshua T. Mueller
	Julian C. Sidney
	Justin J. Boudreaux
	Kaleb W. Cutsinger
	<u>Group 4 (Rachel - Zachery)</u>
	Rachel L. Bisgaard
	Rajah L. Dye
	Rebecca A. Mackowiak
	Richard G. Saucedo
	Robert Nelson
	Robert Qualls
	Roger L. Mast
	Ryan J. Netemeyer
	Ryan J. Nick
	Ryan M. Brunton
	Ryan R. Steele
	Samuel J. Elford
	Stephen T. Mahn
	Steven R. Osborn
	Sydney J. Schwarz
	Tanner L. Runte
	Taylor M. Williams
	Terry J. Gruns
	Thomas J. Birch
	Tristan W. Hudgens
	Tyler N. Tepen
	William G. Bennett
	William Gallion
	Zachariah R. Elmore
	Zachery R. Bilskie

	Date		Topic	Instructor	GR1	GR2	GR3	GR4
W1	M	18-Aug	Introduction	JM-JW	A111	A111	A111	A111
	W	20-Aug	Academic life	JM	A111	A111	A111	A111
	F	22-Aug	Intro to CEE	SK	A111	A111	A111	A111
W2	M	25-Aug	Intro to ECE	JP	A111	A111	A111	A111
	W	27-Aug	Intro to MEEP	JM	A111	A111	A111	A111
	F	29-Aug	Intro to Technology	CS	A111	A111	A111	A111
W3	M	1-Sep	LABOR DAY					
	W	3-Sep	Intro to Mining	SS	A111	A111	A111	A111
	F	5-Sep	Projects	JP-JM	A131	A131	E230	E237
W4	M	8-Sep	Projects	JP-JM	A209	A221	E230	E237
	W	10-Sep	Projects	JP-JM	A221	A209	E230	E237
	F	12-Sep	Projects	JP-JM	A209	A221	E230	E237
W5	M	15-Sep	Projects	JP-JM	A221	A209	E230	E237
	W	17-Sep	Projects	JP-JM	A209	A221	E230	E237
	F	19-Sep	Projects	JP-JM	A221	A209	E230	E237
W6	M	22-Sep	Projects	JP-JM	A209	A221	E230	E237
	W	24-Sep	Projects / Professional Ethics	JW-JM	A221	A209	A111	A111
	F	26-Sep	Unit Conversions	JM	A111	A111	A111	A111
W7	M	29-Sep	Writing Center & Tutoring		A111	A111	A111	A111
	W	1-Oct	MIDTERM					
	F	3-Oct	Guest #1		A111	A111	A111	A111
W8	M	6-Oct	Projects	CS	A111	A111	A111	A111
	W	8-Oct	Projects	CS	A111	A111	A111	A111
	F	10-Oct	Projects	CS	A111	A111	A111	A111
W9	M	13-Oct	FALL BREAK					
	W	15-Oct	Projects	SS	A111	A111	A111	A111
	F	17-Oct	Projects	SS	A111	A111	A111	A111
W10	M	20-Oct	Projects	SS	A111	A111	A111	A111
	W	22-Oct	Projects	SK	A111	A111	A111	A111
	F	24-Oct	Projects	SK	A111	A111	A111	A111
W11	M	27-Oct	Projects	SK	A111	A111	A111	A111
	W	29-Oct	Attend Engineering Career Fair		A111	A111	A111	A111
	F	31-Oct	Healthy Decisions - Wellness Center	JP-JM	A111	A111	A111	A111
W12	M	3-Nov	Registered Student Orgs		A111	A111	A111	A111
	W	5-Nov	Projects	JP-JM	E230	E237	A131	A131
	F	7-Nov	Projects	JP-JM	E230	E237	A209	A221
W13	M	10-Nov	Projects	JP-JM	E230	E237	A221	A209
	W	12-Nov	Projects	JP-JM	E230	E237	A209	A221
	F	14-Nov	Projects	JP-JM	E230	E237	A221	A209
W14	M	17-Nov	Projects	JP-JM	E230	E237	A209	A221
	W	19-Nov	Projects	JP-JM	E230	E237	A221	A209
	F	21-Nov	Projects	JP-JM	E230	E237	A209	A221
W15	M	24-Nov	Projects / Professional Ethics	JW-JM	A111	A111	A221	A209
	W	26-Nov	THANSGVING BREAK					
	F	28-Nov						
W16	M	1-Dec	Guest #2		A111	A111	A111	A111
	W	3-Dec	Internships/Resumes	LG-JM	A111	A111	A111	A111
	F	5-Dec	Conclusion	JM-JW	A111	A111	A111	A111
W17	W	10-Dec	FINAL EXAM 12-1:45 pm					

JM: James Mathias; JP: James Phegley; JW: John Warwick; SK: Sanjeev Kumar
SS: Sam Spearing; CS: Carl Spezia