ROCHESTER INSTITUTE OF TECHNOLOGY
COURSE OUTLINE FORM

COLLEGE OF SCIENCE

Chester F. Carlson Center for Imaging Science

NEW COURSE: COS-IMGS-182 - First-Year Imaging Project II

1.0 Course Approvals

Required course approvals:	**Approval request date:**	**Approval granted date:**
Academic Unit Curriculum Committee	9/1/2010	10/1/2010
College Curriculum Committee	10/15/2010	11/1/2010

Optional designations:	**Is designation desired?**		***Approval request date:**	****Approval granted date:**
General Education:		No		
Writing Intensive:	Yes			
Honors		No		

2.0 Course information:

Course title:	First-Year Imaging Project II
Credit hours:	3
Prerequisite(s):	COS-MATH-171/181 or permission of instructor
Co-requisite(s):	COS-MATH-172/173/182, COS-PHYS-211, or permission of instructor
Course proposed by:	Joe Pow
Effective date:	Fall 2013

	Contact hours	**Maximum students/section**
Classroom		
Lab		
Studio		
Other (specify)	3 (workshop/lab/lecture)	20

2.1 Course Conversion Designation (Please check which applies to this course)

	Semester Equivalent (SE) Please indicate which quarter course it is equivalent to:
X	Semester Replacement (SR) Please indicate the quarter course(s) this course is replacing: parts of 1051-253 Freshman Imaging Project II and all of 1051-253 Freshman Imaging Project III

	New

2.2 Semester(s) offered (check)

Fall	Spring -- X	Summer	Other

All courses must be offered at least once every 2 years. If course will be offered on a bi-annual basis, please indicate here:

2.3 Student Requirements

Students required to take this course: (by program and year, as appropriate) First year imaging science majors
Students who might elect to take the course: First-year students from any other discipline, particularly those in scientific, engineering, or technology majors, or students in University Studies, General Science Exploration, Engineering Exploration, Imaging and Photographic Technology, or Digital Cinema.

3.0 Goals of the course (including rationale for the course, when appropriate):

To expose first-year students to the fundamentals of imaging science by using an interactive project-based approach.

4.0 Course description (as it will appear in the RIT Catalog, including pre- and co-requisites, and quarters offered). Please use the following format:

COS-IMGS-182 First-Year Imaging Project II This is the second of a two-course sequence aimed at designing, developing, and building a functional imaging system that will be useful to a "real world" external constituency to achieve its technical goals. With help from faculty and staff from imaging science and other departments across campus, the unified team of students will plan and organize the effort, assess technology options, integrate components, and confirm that the system meets desired levels of performance. Students will develop a general understanding of the foundational concepts of imaging science, a working knowledge of the principles of systems engineering, an appreciation for the value of teamwork in technical disciplines, and practice oral and written technical communication. In this second course of the sequence, students proceed with construction and testing of their system that was designed in COS-IMGS-181. (Corequisite: COS-MATH-181 or permission of instructor) **Workshop 3, Credit 3 (S)**

5.0 Possible resources (texts, references, computer packages, etc.)

No single textbook will be assigned. Students will be required to research course-related topics using online journal article databases and other library resources.

6.0 Topics (outline):

6.1. Implement design and testing plans that were developed in the fall semester
6.2. Construct/assemble imaging system
6.3. Assess system performance
6.4. Design performance review

7.0 Intended course learning outcomes and associated assessment methods of those outcomes

Course Learning Outcome	Oral presentation	Written précis	Instructor observation
7.1 Describe in-depth at least one aspect of imaging science	X		
7.2 Apply the principles of the systems engineering process			X
7.3 Demonstrate proficiency in oral and written technical communications	X	X	
7.4 Collaborate in teams			X
7.5 Formulate solutions to problems in creative ways	X	X	X

8.0 Program outcomes and/or goals supported by this course

8.1	Apply knowledge and skills in imaging science as a contributing member of a multidisciplinary team.
8.2	Apply knowledge of imaging systems, physics, mathematics, and digital processing to formulate, analyze, and solve practical problems in imaging science.

9.0

	General Education Learning Outcome Supported by the Course	Assessment Method
Communication		
	Express themselves effectively in common college-level written forms using standard American English	
	Revise and improve written and visual content	
	Express themselves effectively in presentations, either in spoken standard American English or sign language (American Sign Language or English-based Signing)	
	Comprehend information accessed through reading and discussion	
Intellectual Inquiry		
	Review, assess, and draw conclusions about hypotheses and theories	
	Analyze arguments, in relation to their premises, assumptions, contexts, and conclusions	
	Construct logical and reasonable arguments that include anticipation of counterarguments	
	Use relevant evidence gathered through accepted scholarly methods and properly acknowledge sources of information	
Ethical, Social and Global Awareness		
	Analyze similarities and differences in human experiences and consequent perspectives	
	Examine connections among the world's populations	
	Identify contemporary ethical questions and relevant stakeholder positions	

Scientific, Mathematical and Technological Literacy		
	Explain basic principles and concepts of one of the natural sciences	
	Apply methods of scientific inquiry and problem solving to contemporary issues	
	Comprehend and evaluate mathematical and statistical information	
	Perform college-level mathematical operations on quantitative data	
	Describe the potential and the limitations of technology	
	Use appropriate technology to achieve desired outcomes	
Creativity, Innovation and Artistic Literacy		
	Demonstrate creative/innovative approaches to course-based assignments or projects	
	Interpret and evaluate artistic expression considering the cultural context in which it was created	

10.0 Other relevant information (such as special classroom, studio, or lab needs, special scheduling, media requirements, etc.)

Dedicated and secure laboratory space with 24/7 access

11.0 Supplemental information for Optional Course Designations: If the course is to be considered as writing intensive or as a general education or honors course, include the sections of the course syllabus that would support this designation.

This course is recommended as a "writing intensive" course because the students will be required to submit weekly précis which will summarize their research on a variety of project-related topics. These précis will be evaluated as written instruments in collaboration with faculty from the College of Liberal Arts.