

**Sophomore Student
Academic Advising:
Class of 2013**



SCHOOL OF ENGINEERING

**Presented by:
Professor Michael D. Symans**

**Dept. of Civil and Environmental Engineering
Rensselaer Polytechnic Institute**

March 30, 2011

**Group Advising Session
for Spring 2011**



Rensselaer

Items Available for Download

- Advising presentations
 - Fall 2009 (#1, #2, #3)
 - Spring and Fall 2010
 - Spring 2011 (this one!)
 - Four-Year timeline
 - Resources: Where to Go for Answers
 - Tips from ALAC
- www.rpi.edu/~symans/advising

Topics

- Clearance for Registration (SAM System)
- Curriculum for B.S. in Civil Engineering
 - Course Selection for Fall 2011 Semester
- HASS Requirements
- Communication Intensive Requirement
- RPI Catalog
- Minors
- Co-terminal Degree Program
- Electronic Warning System (EWS)
- Expanding Your College Experience
 - Study Abroad
 - Co-ops/Internships
 - Undergraduate Research

Clearance for Registration

- Sign-in sheet being passed around. Please sign-in whether you need to be cleared or not.
- After group advising session, I will clear all students who signed-in and for whom clearance is needed (many students are already cleared from Fall 2010 advising).
- Clearance is through SAM (Student Advisor Meeting) system.
- Attendance at the group advising session is sufficient for meeting SAM requirement (i.e., individual (one-on-one) advising is NOT required).
- If needed, individual advising is available immediately after group advising session.

FRESHMAN:

Typical 1st Semester Courses for Civil Students

- R CHEM-1100: Chemistry I – 4 credits
 - Prerequisite for ENGR-1600 (Materials Science) which most civil engineering students take in second semester
- R ENGR-1100: Intro. to Engineering Analysis (IEA) – 4 credits
 - Civil students: Take first semester if possible
- R MATH-1010: Calculus I – 4 credits
 - **MUST take or receive credit first semester**
- R HASS Elective – 4 credits
 - Example: STSH-1110: Science, Technology, and Society
- Possible Additional Course (1 credit) – Do NOT need to take first semester.
 - R ENGR-1200: Engineering Graphics and CAD (*recommended that CEE students do NOT take this course; Instead take AutoCAD which will be offered in Spring semester*)
 - O ENGR-1962: Engineering Communications

4 x 4 =
16 credits

R = Required course
O = Optional course

FRESHMAN:

Typical 2nd Semester Courses for Civil Students

- **R** Science Elective
 - Civil students: ENGR-1600: Materials Science – 4 credits
or CSCI-1100: Computer Science I – 4 credits
- **R** PHYS-1100: Physics I – 4 credits (or PHYS-1150: Honors Physics)
- **R** MATH-1020: Calculus II – 4 credits
 - **MUST take or receive credit second semester**
- **R** HASS Elective – 4 credits
 - Example: STSH-1110: Science, Technology, and Society
- Possible Additional Course (1 credit) – Do NOT need to take second semester.
 - R** ENGR-1960: AutoCAD (*New course: Prefix, number, and title subject to change*)
 - R** CIVL-1961: Introduction to Civil and Environmental Engineering (*recommended*)
or
 - ENGR-1300: Engineering Processes

4 x 4 =
16 credits

R = Required course
O = Optional course

SOPHOMORE:

Typical 3rd Semester Courses for CIVL Students

- **R** ENGR-2050: Intro. to Engineering Design – 4 credits
 - Prerequisites: ENGR-1100 (CAD course is no longer a prereq)
 - Corequisite is PHYS-1200
 - Professional Development I (ENGR-1010; 1 credit) is taken as part of ENGR-2050. The 1 credit is not shown on the CAPP Report but counts toward the 128 credits needed for graduation.
- **R** MATH-2400: Intro. to Differential Equations – 4 credits
 - Prerequisite: MATH-1020
- **R** PHYS-1200: Physics II – 4 credits
 - Prerequisite: PHYS-1100
 - Corequisite: MATH-1020
- **R** HASS Elective – 4 credits


4 x 4 =
16 credits

R = Required course
O = Optional course

SOPHOMORE:

Typical 4th Semester Courses for CIVL Students

- **R**CSCI-1190: Beginning C Programming for Engineers – 1 credit
 - Can be satisfied with CSCI-1100: Computer Science I
- **R**ENGR-2090: Engineering Dynamics – 4 credits
 - Prereqs: ENGR-1100 and PHYS-1100
 - Coreq: MATH-2400
- **R**ENGR-2250: Thermal and Fluids Engineering I – 4 credits
 - Prereqs: ENGR-1100 and PHYS-1100
 - Coreq: MATH-2400
- **R**ENGR-2530: Strength of Materials – 4 credits
 - Prereq: ENGR-1100
- **R**HASS Elective – 4 credits



4 x 4 =
16 credits

R = Required course
O = Optional course

Junior:

Typical 5th Semester Courses for CIVL Students

- **R** CIVL-2030: Intro. to Transportation Engineering – 4 credits
 - Prerequisite: MATH 2400
- **R** CIVL-2630: Intro. to Geotechnical Engineering - 4 credits
 - Prerequisite: ENGR 2530
- **R** CIVL-2670: Intro. to Structural Engineering – 4 credits
 - Prerequisite: ENGR 2530
- **R** ENVE-2110: Intro. to Environmental Engineering – 4 credits

4 x 4 =
16 credits

R = Required course
O = Optional course

Junior:

Typical 6th Semester Courses for CIVL Students

- **R** ENGR-4760: Engineering Economics – 3 credits
- **R** ENVE-4310: Applied Hydrology and Hydraulics – 4 credits
 - Prereq: ENGR-2250
- **R** CE Design Elective – 3 credits
 - Select from list of courses
- **R** Professional Development II – 2 credits
 - Can select either:
 - PSYC-4170: Professional Development II: Leadership Theories
 - Prereq: ENGR-2050 (includes PD-I)
 - Must be junior or senior.
 - STSS-4840: Professional Development II
 - Prereq: ENGR-1010 (PD-I)
 - Must be junior or senior.
 - Take before PD III
- **R** Free Elective – 4 credits
 - Free electives are courses that are selected according to the student's interest. The total credit hours associated with free electives is 12 (could be three 4-credit courses, four 3-credit courses, or any combination to get to a total of 12). This number of credit hours ensures that students will graduate with at least the minimum number of credit hours (128) required to graduate.

R = Required course
O = Optional course

16 credits

Senior:

Typical 7th Semester Courses for CIVL Students

- **R** ENGR-2600: Modeling and Analysis of Uncertainty – 3 credits
 - Prerequisite: MATH 1010
- **R** CE Design Elective - 3 credits
 - Select from list of courses
- **R** Math or Science Elective – 3-4 credits
 - Select any Math or Science course according to student's interest
 - If student selected CSCI-1100 (Computer Science I; 3 credits) for their Science Elective and did not take CSCI-1190 (Beginning C; 1 credit), they will need a 4 credit Math/Science Elective to graduate with 128 credit hours. However, some students will take more courses than needed to graduate and thus meeting the 128 credit hour minimum will not be a concern in which case they could take a 3 credit Math/Science Elective. In this case, the student's "Free Elective" requirement increases from 12 to 13.
 - If student took ENGR 1600 (Materials Science; 4 credits) for their Science Elective and thus took CSCI-1190 (Beginning C; 1 credit), they will only need 3 credit Math or Science Elective to graduate with a minimum of 128 credit hours.
- **R** Free Elective - 4 credits

13-14 credits

R = Required course
O = Optional course

Senior: Typical 8th Semester Courses for CIVL Students

- **R** CIVL-4920: Civil Engineering Capstone Design – 3 credits
- **R** ENGR-4010: Professional Development III – 1 credit
- **R** CE Technical Elective – 3 credits
 - Select from list of courses
- **R** HASS Elective – 4 credits
- **R** Free Elective – 4 credits

15 credits

R = Required course
O = Optional course

Credit Hours Needed for Graduation

	Semester	Credits
Freshman	1	16
	2	16
Sophomore	3	16
	4	16
Junior	5	16
	6	16
Senior	7	13
	8	15
	Autocad	1
	Engr. Proc. or Intro CEE	1
	Beg. C or Math/Sci	1
	PD-I	1
	Total	128

- On average, students need to take 16 credits/semester
- $16 \text{ credits/semester} \times 8 \text{ semesters} = 128 \text{ credits}$

Division of Credits for Typical CAPP Report

	Credits	
Math and Physics	20	
Core Engineering	33	Includes AutoCad and Engr. Proc./Intro. CEE
Science Elective	4	
Math and Science Elective	3	
CEE Required Courses	23	
CE Design Electives	6	
CE Technical Elective	3	
HASS Core	22	
Free Electives	13	Extra credit accounts for Beg. C or Math/Sci Elective
TOTAL	127	Does not include PD-I

- CAPP Report may show minimum number of credits as 127 since PD-I is not included in CAPP Report.
- CAPP Report may show Math/Science Elective as 3 credits, in which case Free Electives is shown as 13 credits instead of 12 (see next slide for details).

Options for Meeting Math/Science Elective and Free Elective Requirements

- **Option 1**
 - Beginning C (1 credit)
 - Math/Science Elective (3 credits)
 - Free Electives (12 credits)
 - **TOTAL = 16 credits**

- **Option 2**
 - Student does NOT take Beginning C (0 credits) (*takes Comp Sci I instead*)
 - Math/Science Elective (4 credits)
 - Free Electives (12 credits)
 - **TOTAL = 16 credits**

- **Option 3**
 - Student does NOT take Beginning C (0 credits) (*takes Comp Sci I instead*)
 - Math/Science Elective (3 credits)
 - Free Electives (13 credits)
 - **TOTAL = 16 credits**

Guidelines for Meeting Humanities, Arts & Social Sciences (HASS) Requirements (1)

- 24 Credits are required for HASS
 - 2 credits automatically taken by engineering students in the form of engineering core courses:
ENGR-1010 (PD-I) as part of ENGR-2050 and ENGR-4010 (PD-III)
 - 2 credits automatically taken by engineering students in form of HASS course (PD-II)
 - Therefore, **20 credits of HASS courses (5 courses) are to be selected by student such that all HASS requirements are met.**
- Breadth Requirement:
 - Need to take a minimum of **2 courses from Humanities** (8 credits total) and **2 courses from Social Sciences** (8 credits total), although interdisciplinary IHSS courses can be substituted.

Guidelines for Meeting Humanities, Arts & Social Sciences (HASS) Requirements (2)

- Depth Requirement:
 - At least two courses with the same course prefix (STSH and STSS are interchangeable and thus can be counted as one area)
 - At least one of these two courses must be at advanced level (above 1000-level).
 - Can not take these courses as pass/no credit.
 - Examples:
 - 1000 WRIT & 2000 WRIT
 - 2000 PHIL & 2000 PHIL
 - 2000 STSS & 4000 STSS
 - 4000 ARTS & 4000 ARTS

Guidelines for Meeting Humanities, Arts & Social Sciences (HASS) Requirements (3)

- 1000-level HASS courses
 - No more than three
- 4000-level HASS courses
 - At least one 4-credit course
- Pass/No Credit:
 - No more than 6 credits of HASS courses
- IHSS courses can count as either a "Humanities/Arts" or "Social Sciences" course

Understanding HASS Course Prefixes

Humanities/Arts	Social Sciences
Arts (ARTS)	Economics (ECON)
Literature(LITR)	Psychology (PSYC)
Foreign Languages (LANG)	
Communication (COMM)	
Writing (WRIT)	
Philosophy (PHIL)	
Science & Technology Studies – Humanities (STSH)	Science and Technology Studies – Social Sciences (STSS)
Interdisciplinary Humanities and Social Sciences – IHSS	Interdisciplinary Humanities and Social Sciences – IHSS

Additional HASS Information

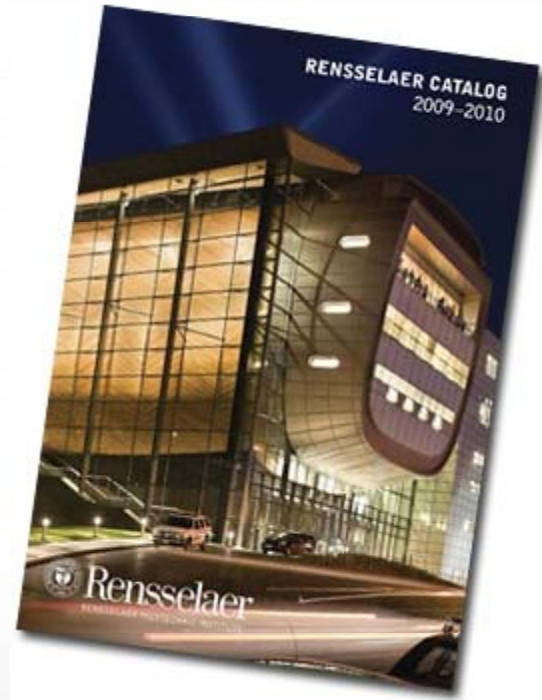
- In your CAPP report, IHSS Courses will be shown in the free elective section
- Students can contact the Registrar's Office to request that an IHSS course be assigned to either Humanities or Social Sciences (although this is not necessary)
- Students can only transfer in or receive AP credit for 8 credits within the HASS core requirements (excludes transfer students).
- CAPP report lists HASS requirements

Communication Intensive Requirement

- Institute requirement (not just for SoE)
- Two communication intensive courses are required.
 - One course in major (for civil engineering majors, the course is CIVL 4920 – Civil Engineering Capstone Design).
 - One HASS course that is writing-intensive (for civil engineering majors, PD-II can satisfy this requirement if STSS-4840 is taken). Any HASS course that is "communication intensive" contains a "writing intensive" component and thus meets this requirement.
 - Can not take Pass/No Credit
- A list of courses that satisfy the communication intensive requirement are available on SIS.

RPI 2009-2010 Catalog

- If you started in Fall 2009 or Spring 2010, this version of the catalog represents your contract with RPI. It contains the requirements that you must satisfy to graduate. In contrast, the requirements shown on the CEE Department website are NOT part of your contract with RPI.
- Previous information provided in these slides on course requirements (including prereqs and coreqs) and HASS requirements were obtained from the catalog. Advisees should be familiar with these portions of the catalog.
- The on-line version of the catalog can be accessed through SIS.



Minors

- Requirements for a minor
 - 16-20 credits in an area that is outside your major (e.g. Economics, Management, Math, Psychology)
- Why do it?
 - Explore an area in more depth but with minimal additional effort (4 or 5 additional courses)
- Next step?
 - Start planning early since there may be required courses for the minor.
 - If interested in minor, contact departmental secretary or department chair in the department in which you want to pursue the minor. That department establishes the minor and checks that all requirements are met for graduation with the minor.

Co-Terminal Degree Program

- Co-terminal degree program involves an additional year of study at the graduate level. B.S. and Master's requirements are combined in years 4 and 5.
- Student does not graduate until end of fifth year and remains eligible for financial aid through the fifth year.
- When student graduates, they receive both a bachelor's and master's degree.
- Why do it?
 - More thorough understanding of area of concentration
 - For civil engineering, master's degree is becoming entry-level degree and thus some companies are only hiring students with master's degrees.
 - May be difficult to return for master's at a later date.
- Challenges?
 - **GPA requirement (3.2 minimum)**
 - Careful planning

Electronic Warning System (EWS)

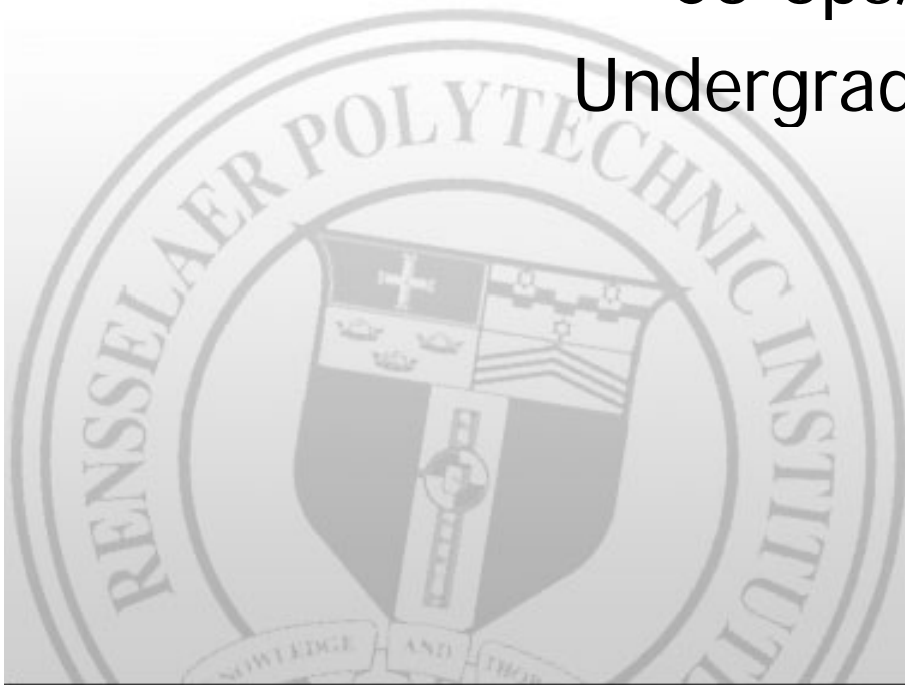
- EWS identifies lack of performance in one or more courses.
- Instructors send the warning if there is some concern with a student (e.g., poor performance, sporadic attendance, etc.)
- Students receive an EWS notice via email. The student's advisor, ALAC, and the Office of the First Year Experience also receive it.
- EWS alerts students that they should seek help to improve their performance. It is the student's responsibility to seek the help they need.
- As your advisor, I am available to discuss any EWS notices you receive and to help you identify appropriate resources for improving your performance.

Expanding Your College Experience

Study Abroad

Co-ops/Internships

Undergraduate Research



Study Abroad: International Programs for Engineering

Rensselaer Engineering Education Across Cultural Horizons (REACH)

- Other partnerships under development

Global Engineering Education Exchange Program

- Individual educational opportunities at multiple universities worldwide

Affiliated Programs

- Agreement in place between RPI and affiliated school
- All courses are transferrable
- Financial aid and tuition remains the same
- Many destinations:
 - Australia, Denmark, Germany
 - Hong Kong, India, Japan
 - Korea, Singapore, South Africa
 - United Kingdom
 - ...

When to participate?

Spring semester of junior year works well.

More Info:

Office of International Programs
Karen Dvorak
dvorak2@rpi.edu

CEE Dept.
Professor Michael O'Rourke
orourm@rpi.edu

Cooperative Engineering Program

- Cooperative Engineering Program: Students gain work experience in their chosen field
- Can be useful for clarifying career goals
- Typical program:
 - Work one semester + one summer
 - Depending on your major, different options may be available

GET EXPERIENCE. **GET PAID.**
CO-OP

More Info on Co-op Program and Internships:

Career Development Center (CDC)

DCC 210

<http://www.rpi.edu/dept/cdc/students/experience/coop/index.html>

NOTE: CDC also offers Sophomore Career Experience (SCE) Program.

Undergraduate Research Program

- Undergraduate Research Program (URP) developed by RPI to promote undergraduate involvement in research
- Undergraduate students (usually juniors or seniors) work directly with faculty and graduate students
- Types of URP Positions:
 - Experience only; Credit (1 - 4 credits); Stipend
- For stipend, research advisor provides funding and RPI provides matching funds
- Procedure: Identify research project with faculty member and apply through department

More Info:
Office of Undergraduate Education
<http://undergrad.rpi.edu>



Questions/comments?

Reminder: Sign-in sheet

If needed, individual
consultations are available now.

Professor Michael D. Symans

4044 JEC

276-6938

symans@rpi.edu

www.eng.rpi.edu

Items Available for Download

- Advising presentations
 - Fall 2009 (#1, #2, #3)
 - Spring 2010 and Fall 2010
 - Spring 2011 (this one!)
 - Four-Year timeline
 - Resources: Where to Go for Answers
 - Tips from ALAC
- www.rpi.edu/~symans/advising