ECSE Arch Discovery Day

John Wen, Head, ECSE
Agung Julius, Professor, ECSE
Rama Hamarneh, Sr Student Coordinator
Agenda

- Arch summer courses (start planning now!)
- Semester away (start planning now!)
- Beyond Arch
- ECSE Student Experiences
- Q&A
- Pizza!
Your RPI Path

You are here!

<table>
<thead>
<tr>
<th>FRESHMAN</th>
<th>SOPHOMORE</th>
<th>JUNIOR</th>
<th>SENIOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall*</td>
<td>Fall*</td>
<td>Semester Away**</td>
<td>Fall</td>
</tr>
<tr>
<td>Spring*</td>
<td>Spring*</td>
<td>Semester Away**</td>
<td>Spring</td>
</tr>
<tr>
<td>Summer or</td>
<td>Arch Summer*</td>
<td>Summer</td>
<td>Graduation</td>
</tr>
</tbody>
</table>

*On-campus housing required.

**Juniors must participate in a fall or spring semester away experience following The Arch summer semester.

Note: This is a general academic overview and may vary based on academic curriculum.
# Electrical Engineering Template

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
<th>Fall or Spring</th>
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<tbody>
<tr>
<td>ECSE-2610</td>
<td>Computer Comp. &amp; Operations</td>
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<tr>
<td>PHYS-1200</td>
<td>Physics II</td>
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<tr>
<td>MATH-2400</td>
<td>Intro. to Differential Equations</td>
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<tr>
<td></td>
<td>Hum., Arts or Soc. Sci. Elective</td>
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<td>ARCH SEMESTER</td>
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<tr>
<td>ECSE-2110</td>
<td>Electrical Energy Systems</td>
<td>3</td>
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<tr>
<td>ENGR-2050</td>
<td>Introduction to Eng. Design</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>STSS-4100</td>
<td>Prof Devt-Tech Issues &amp; Solutions</td>
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<tr>
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<td>Hum., Arts or Soc. Sci. Elective</td>
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<td>Free Elective</td>
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<td>Second Year</td>
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<td>ECSE-2010</td>
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<td>4</td>
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<tr>
<td>ECSE-2500</td>
<td>Engineering Probability</td>
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<td>3</td>
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<tr>
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<tr>
<td>Third Year</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>ECSE-2050</td>
<td>Intro. to Electronics</td>
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<td>4</td>
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<tr>
<td>ECSE-2100</td>
<td>Fields and Waves I</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>ECSE-2410</td>
<td>Signals and Systems</td>
<td>8</td>
<td>3</td>
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<tr>
<td>ECSE-2900</td>
<td>ECSE Enrichment Seminar</td>
<td>8</td>
<td>1</td>
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<tr>
<td></td>
<td>Math/Science Elective</td>
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</table>
## Computer & Systems Engineering Template

<table>
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<th>Second Year</th>
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<th>Fall or Spring</th>
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<tbody>
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<td>ENGR-2350</td>
<td>ECSE-2010</td>
<td>Electric Circuits 8</td>
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<tr>
<td>CSCI-2200</td>
<td>CSCI-2300</td>
<td>Intro to Algorithms</td>
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<tr>
<td>MATH-2400</td>
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<td>Science Elective</td>
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<tr>
<td>PHYS-1200</td>
<td></td>
<td>Hum., Arts or Soc. Sci. Elective</td>
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</tbody>
</table>

**ARCH SEMESTER**

| ENGR-2050   | ECSE-2050  | Intro to Electronics 8 |
| MATH-2010   | ECSE-2410  | Signals & Systems 8 |

<table>
<thead>
<tr>
<th>Hum., Arts or Soc. Sci. Elective</th>
<th>ECSE-2500</th>
<th>Engineering Probability 8</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>ECSE-2900</td>
<td>Enrichment Seminar</td>
</tr>
<tr>
<td></td>
<td>STSS-4100</td>
<td>Prof Devt- Tech Issues &amp; Solutions 1,3,4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hum., Arts or Soc. Sci. Elective</td>
</tr>
</tbody>
</table>

8/31/21
Program Templates and more details...

Templates, as well as more details about the curriculum can be found on our website:

https://ecse.rpi.edu/academics/undergraduate-programs/program-templates
Arch Summer

• Draw on your lab and project experience in Intro to ECSE, Embedded Control, and Electric Circuits for design ideas and implementation in Introduction to Engineering Design (IED).

• Arch semester courses are 12 weeks (instead of 14) – important to keep pace, seek help from Prof, TA, ALAC early!
ECSE Student Arch Experiences
ECSE Arch Summer Experience

Joshua Pratt
Dual Electrical Engineering and Computer and Systems Engineering
Class of 2024

Om Anavekar
Dual Computer and Systems Engineering and Computer Science
Class of 2024
Project Portfolio
Learn to represent yourself and your demonstration of expertise! Develop a portfolio!
Examples of Student Portfolios

• Om Anavekar  
  • https://omanavekar.wixsite.com/ommakes/portfolio

• Joshua Pratt  
  • https://www.joshuapratt.net/

• Colin Kilburn  
  • https://colinkilburn.wordpress.com/

• George Rizos  
  • https://georgerizos.com/projects
YOUR FUTURE...Omega Lab example videos

Solar Panel Machine
https://www.youtube.com/watch?v=YMiAvf18cgs

Smart Traffic Light
https://ecse.rpi.edu/~ssawyer/CircuitsSpring2020_all/Labs/OmegaLab_SmartTrafficLights/OmegaLab_SmartTrafficLights.html
Semester Away

“Working in a hospital, rather than an academic lab, has given me a chance to see firsthand the life-changing effects of the treatments we are developing.”

REBECCA WILEN ’19
Chemical Engineering & Biochemistry/Biophysics
Memorial Sloan Kettering

“Studying abroad gave me the opportunity to visit so many unique places and appreciate what this earth has to offer.”

PETER D’ALMEIDA ’20
Biomedical Engineering
University of New South Wales
Semester Away

- Internships/Co-ops
- Civic Engagement
- RPI Research Opportunities
- Study at Another Institution
- Self-Design (career, leadership, sports, traditional)
- Study Abroad / International Experience

CCPD

Office of Undergraduate Education

Office of International Programs
Internship/Co-op

- Visit CCPD!
- Join Handshake
- Put together a resume
- Put together a portfolio (collection of your accomplishments, e.g., course/hobby projects)
- Attend on campus career fairs
- Join CCPD Discord Channel
- Attend CCPD Workshops
- See Opportunities Posted in ECSE Weekly Bulletin
- Join ECSE Industry Adviser Program
- Join professional networking sites (LinkedIn)

Remember: companies know you are still learning – they will train you. They want to see your eagerness to learn and willingness to grow.
Where Do ECSE Students Go?

[Image showing various company logos]
ILE – Research

- Identify your interest vs. ECSE research areas.
- Find faculty in your interest areas (visit https://ecse.rpi.edu/research).
- Visit faculty homepage and learn about their current projects.
- Contact faculty to inquire research opportunities.
- Talk to potential faculty mentor’s students and visit their labs.
Beyond Arch

[Diagram showing course categories such as Math, Science, Humanities & Social Science, CS, Core Eng, and their respective courses like Intro to ECSE, Circuits, Computer Comp & Operation, Signals & Systems, Lab Elective, Electives, etc.]

Capstone Design
Beyond Arch

- Elective courses: ECSE Focus Areas
- ECSE Enrichment Seminar
- Undergraduate Research Project (URP)
- ECSE Capstone Design
ECSE Student Away Experiences
ECSE Arch Experience

Arhum A. Shaikh
Computer & Systems Engineering and Electrical Engineering (Dual-Major)
Expected Graduation Year: May 2023
Type of Arch Experience: Internship/Co-Op
Company: American Honda Motor Company (Marysville, OH) (20 Minutes NW of Columbus, Ohio)
Time Period: ~4 months

- Helped solve production issues when it came to vehicle parts.
- Discussed with supplier representatives about issues that were present with parts.
- Wrote daily reports that were all recorded in Honda’s reporting system to keep track of active issues
- Re-defined international shipment process that will save Honda an average of $19,845 per year
  Brought 91.6% efficiency in international shipments
ECSE Semester Away Experience

Sathya Ramesh  
Electrical Engineering, Expected Graduation 2023  
Type of Arch Experience: Internship  
Company: GlobalFoundries  
Time Period: Less than 2 months

• Analyzed statistics of outputs in our department and we can be most sustainable with each process we take.
Advising
Your Advisors

FACULTY ADVISERS
Randolph Franklin
Qiang Ji
James Lu
Santiago Paternain
Jian Sun

Undergraduate Student Coordinator - Rama Hamarneh
hamarr@rpi.edu
518-276-8557
Appointment link: https://go.oncehub.com/RamaHamarneh
Advising: Sophomore – Senior Year

Faculty Adviser

- Major and Degree requirements
- Class schedule
- Major elective questions
- Future plans
- Undergraduate research
- Graduate school
- Questions about the field
- Research
- Advisor signatures
- Jobs and internships

ECSE UG Student Support

- Major and Degree requirements
- Graduation progress
- Class schedule
- Forms/signatures
- Declaring a minor
- Undergraduate research logistics
- Registration
- Transfer credit
- Study abroad
- Opportunities and events
- General questions!
Industry Adviser Program

Sign Up Here: [https://rpi.qualtrics.com/jfe/form/SV_2tVBTSYDdCV32rI](https://rpi.qualtrics.com/jfe/form/SV_2tVBTSYDdCV32rI) by 9/23/22

The ECSE Industry Adviser Program is for undergraduate ECSE students to connect with an adviser in industry as they prepare to look for an internship, find an away opportunity, or look for a job. An Industry Adviser can give unique insight to the workforce and how to connect your academics to your job search.

ECSE Alumni Contact Sheet

[https://rpi.box.com/s/owa5t2at4xyr7orsau0wxwp2kiic0nsv](https://rpi.box.com/s/owa5t2at4xyr7orsau0wxwp2kiic0nsv) (Always in Weekly Newsletter)

Alumni who are willing to be contacted with career-related questions!
Additional Information and Resources

- Covid-19 Updates: https://covid19.rpi.edu/students
- URP: http://info.rpi.edu/undergraduate-research
- Co-op, internship: https://www.rpi.edu/dept/cdc
- Study Abroad: http://info.rpi.edu/international-programs/study-abroad-and-exchange-opportunities
- Co-term: http://admissions.rpi.edu/graduate/admission/co-terminal.html
- Emergency: 911, RPI Public Safety x6611
- Counseling center x6476 4100 Academy Hall http://studenthealth.rpi.edu/counseling
- Stay healthy! http://studenthealth.rpi.edu/health
Connect with ECSE

@EcseRpi

ECSE RPI Students Graduates and Friends

@ECSEDeptRPI

ece.rpi.edu
Questions?

Questions for ECSE Students about their Arch Experiences?

Further questions?
Dr. Rama Hamarneh, Undergraduate Student Coordinator

hamarr@rpi.edu