

## ENGINEERING

### A.S. PRE-ENGINEERING

#### Pathways for Transfer

(IGETC) NAS765

#### REQUIRED COURSES (24 - 26 semester units) UNITS

MAT-1A	Calculus I	4
MAT-1B	Calculus II	4
PHY-4A	Mechanics	4

Choose one of the following:

PHY-4B	Electricity and Magnetism	4
PHY-4C	Heat, Light, and Waves	4

Electives: choose two from the list below 8-10

#### ELECTIVE LIST (8 - 10 units) UNITS

CHE-1A	General Chemistry I	5
CHE-1B	General Chemistry II	5
MAT-1C	Calculus III	4
PHY-4B	Electricity and Magnetism (if not used above)	4
or		
PHY-4C	Heat, Light, and Waves (if not used above)	4

The [UC Riverside Bourns College of Engineering Guaranteed Transfer Pathway](#) requires an overall 3.00 UC GPA & 2.50 in two major sequences. See a STEM Counselor for more info. [Apply online](#) to join UCR Engineering pathway.

This academic plan includes major coursework and recommended general education requirements for transfer to **UC Riverside**. Transfer *requirements vary based on institution*. Please see a STEM Counselor to develop your personal educational plan and determine appropriate work/life/school balance.

HS DUAL ENROLLMENT SENIOR FALL TERM		NORCO SPRING TERM 1	
COURSE	UNITS	COURSE	UNITS
MAT-1A	4	CHE-1B (except Comp E)	5
ENE-10	3	PHY-4B	4
		MAT-2	4
		ENG-1B	4
<b>Total Units</b>	<b>7</b>	<b>Total Units</b>	<b>17</b>

SENIOR SPRING TERM		NORCO FALL TERM 2	
COURSE	UNITS	COURSE	UNITS
MAT-1B	4	PHY-4C	4
High School chem or		BIO-60	5
CHE-2A @ Norco	4	CIS-5 (except MS & ME)	4
		IGETC AREA 4	3
<b>Total Units</b>	<b>4-8</b>	<b>Total Units</b>	<b>16</b>

NORCO FALL TERM 1		NORCO WINTER TERM	
COURSE	UNITS	COURSE	UNITS
MAT-1C	4	IGETC AREA 4	3
CHE-1A	4	IGETC AREA 3A	3
PHY-4A	4		
IGETC AREA 3B	3		
<b>Total Units</b>	<b>15</b>	<b>Total Units</b>	<b>6</b>

NORCO WINTER TERM		NORCO SPRING TERM 2	
COURSE	UNITS	COURSE	UNITS
ENG-1A	4	IGETC LOTE	5
		ENE-39 or 35	3-4
		IGETC AREA 4	3
		IGETC AREA 3A or 3B	3
<b>Total Units</b>	<b>4</b>	<b>Total Units</b>	<b>14-15</b>

✓ First Term To-Do List	
	Submit official high school transcripts and AP/IB scores
	Visit <a href="#">Engagement Center</a> (ST 108)
	Meet with a <a href="#">counselor</a> to personalize your EduNav plan and to <i>determine if you have already met the IGETC foreign language requirement through high school coursework.</i>
	Register for ILA-800 each term to receive <a href="#">FREE tutoring</a>
	Attend STEM Guest Speaker and other STEM events

✓ Second Term To-Do List	
	Visit the <a href="#">Career Center</a> (2nd floor of CSS)
	Connect with a <a href="#">Mustang Mentor</a>
	Get involved in <a href="#">ASNC</a> or other <a href="#">student organizations</a>
	Look for internship, research or volunteer opportunities in your field (s) of interest.

✓ Third Term To-Do List	
	Meet with a <a href="#">counselor</a> to verify your transfer status
	Attend <a href="#">Transfer Fair</a> , <a href="#">transfer workshops</a> and <a href="#">meet with university reps</a>
	Submit UCR TAG application in September and UC/CSU applications in November
	Complete <a href="#">FAFSA</a> before march 2nd (include all transfer institutions that you applied to)

✓ Fourth Term To-Do List	
	Submit Degree Applications via <a href="#">WebAdvisor</a>
	Complete transfer application updates
	Finish strong and order final transcripts for your transfer institution along with IGETC certification

**ENGINEERS** are trained in fundamentals of engineering with a foundation in calculus and physics. Coursework will also include electrical engineering, mechanical engineering, computer science, materials science, biology, and chemistry. This breadth allows students to specialize in their areas of interest and collaborate widely with researchers in a variety of fields.

### WHERE CAN I WORK?

- ◆ Federal Government
- ◆ Higher Education
- ◆ Hospitals & Healthcare Facilities
- ◆ Medical Equipment Companies
- ◆ Medical Research
- ◆ National Institutes of Health
- ◆ Pharmaceutical Companies
- ◆ Regulatory Agencies

### WHAT CAN I DO WITH THIS ASSOCIATE DEGREE?

Position Title	CA Annual Openings	CA Median Salary	In Riverside County Wages will Support
<a href="#">Chemical Technician</a>	720	\$47,170	1 adult
<a href="#">Computer Repair Technician</a>	1,200	\$41,670	1 adult
<a href="#">Manufacturing Engineering Technologist</a>	520	\$61,770	1 adult, 2 children
<a href="#">Medical Equipment Repairer</a>	400	\$55,080	1 adult, 1 child
<a href="#">Quality Control Analyst</a>	1,120	\$53,280	1 adult, 1 child
<a href="#">Teacher's Assistant</a>	17,710	\$35,380	1 adult

### WHAT CAN I DO WITH MORE EDUCATION AND TRAINING?

Position Title	CA Annual Openings	CA Median Salary	In Riverside County Wages will Support
<a href="#">Aerospace Engineer</a>	980	\$123,210	2 adults, 5 children
<a href="#">Biomedical Engineer</a>	250	\$102,140	2 adults, 3 children
<a href="#">Chemical Engineer</a>	190	\$101,620	2 adults, 3 children
<a href="#">Civil Engineer</a>	4,490	\$107,530	2 adults, 3 children
<a href="#">Computer Engineer</a>	1,1960	\$117,200	2 adults, 4 children
<a href="#">Environmental Engineer</a>	780	\$102,100	2 adults, 3 children
<a href="#">Materials Engineer</a>	190	\$102,840	2 adults, 3 children
<a href="#">Mechanical Engineer</a>	2,310	\$102,030	2 adults, 3 children
<a href="#">Product Safety Engineer</a>	170	\$116,150	2 adults, 4 children
<a href="#">Quality Control Manager</a>	1,720	\$112,340	2 adults, 4 children

### ESTIMATED COST TO OBTAIN ASSOCIATE DEGREE

72 Units x \$46 per unit (CA residents) = \$3,312      Health, ASNC, Parking Fees (x 4 terms) = \$360  
 Books & Supplies = \$3,944      **Total Cost = \$7,616**

### HOW DO I GET STARTED?

- ⇒ Visit the **CAREER CENTER** to learn about opportunities in the field and help determining if it is a good fit for your preferred values, strengths, skills, and interests. CSS 2<sup>nd</sup> floor.
- ⇒ Attend annual **TRANSFER FAIR** and **TRANSFER CENTER WORKSHOPS** to determine which university is the best fit for you as well as application requirements and transfer process.
- ⇒ Attend **STEM GUEST SPEAKER & ALUMNI EVENTS** for valuable insight on life in the workplace.
- ⇒ Build **LABORATORY** and **RESEARCH SKILLS** through courses and/or work with professors.
- ⇒ **JOB SHADOW** and **NETWORK WITH PROFESSIONALS** in positions you wish to obtain.
- ⇒ Join the Norco STEM Club or ASNC to gain **TEAMWORK** and **LEADERSHIP SKILLS**.
- ⇒ Practice interpersonal, small group and public speaking **COMMUNICATION SKILLS**.
- ⇒ Gain experience through **RESEARCH/INTERNSHIP OPPORTUNITIES** such as NASA, JPL, NAVSEA, UCR Tune Summer Bridge, UC Berkeley Summer Research Internship, etc.
- ⇒ Join an engineering **PROFESSIONAL ASSOCIATION** to network and maintain current knowledge of opportunities in the field.

### WHAT SKILLS DO I NEED?

- ⇒ **Critical Thinking** — using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
- ⇒ **Active Listening** — giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- ⇒ **Complex Problem Solving** — identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.
- ⇒ **Judgment and Decision Making** — considering the relative costs and benefits of potential actions to choose the most appropriate one.
- ⇒ **Reading Comprehension** — understanding written sentences and paragraphs in work related documents.

### PREFERRED WORK STYLES INCLUDE:

- ⇒ **Integrity** — being honest and ethical.
- ⇒ **Cooperation** — being pleasant with others on the job and displaying a good-natured, cooperative attitude.
- ⇒ **Attention to Detail** — being careful about detail and thorough in completing work tasks.
- ⇒ **Analytical Thinking** — analyzing information and using logic to address work-related issues and problems.
- ⇒ **Persistence** — persistence in the face of obstacles.