



ENGINEERING UNDERGRADUATE PROGRAMS

<https://undergraduate.engr.ucr.edu/>

UNIVERSITY OF CALIFORNIA, RIVERSIDE



Ranked America's fastest rising ranked university, 2021



One of University of California's 10 prestigious universities

TOP RANKED, ACADEMICALLY CHALLENGING,
AND **READY FOR YOU**

BEST IN EDUCATION & OPPORTUNITY



No. 1 Top performer in social mobility in the nation; U.S. News, 2025

TOP 50 Public Research Engineering Universities; US News & World Report. 2024

TOP 20 Best value public colleges in America; Princeton Review, 2024

BEST VALUE UNIVERSITY



No. 6 Public universities Making an Impact; Princeton Review, 2024

No. 28 Computer Science Institution, U.S.; csrankings.org, 2024

TOP 40 Best Engineering Schools by Salary Potential; Payscale.com, 2023



MARLAN AND ROSEMARY BOURNS COLLEGE OF ENGINEERING

11

Undergraduate
Programs

150+

Award-Winning
Faculty Members

4000

Undergraduate
Students

15:1

Undergraduate
Student to
Faculty Ratio

\$44M

in Research
Expenditures (2022)

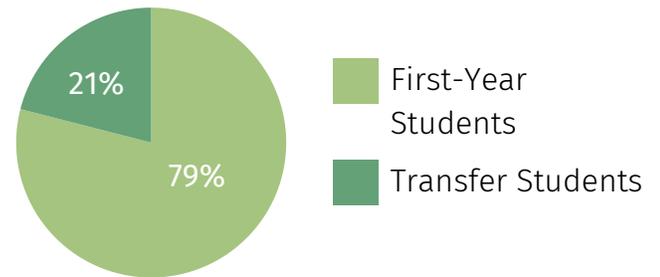
HIGHLY RANKED ENGINEERING COLLEGE

TOP 50 Public Research Engineering
Universities; U.S. News, 2024

No. 19 Best for engineering among
public universities in the nation;
U.S. News, 2023

Top 40 Best Engineering Schools by
Salary Potential; Payscale 2023
College Salary Report

A WELCOMING PLACE FOR FIRST-YEAR & TRANSFER STUDENTS



UCR's 4,300-square-foot
machine shop

UNDERGRADUATE PROGRAMS

B BACHELOR'S DEGREE PROGRAM

+ BACHELORS+MASTERS PROGRAM*

BIOENGINEERING **B** **+**

ELECTRICAL ENGINEERING **B** **+**

CHEMICAL ENGINEERING **B** **+**

ENVIRONMENTAL ENGINEERING **B** **+**

COMPUTER ENGINEERING **B** **+**

MATERIALS SCIENCE AND ENGINEERING **B**

COMPUTER SCIENCE **B** **+**

MECHANICAL ENGINEERING **B** **+**

COMPUTER SCIENCE WITH BUSINESS APPLICATIONS **B**

ROBOTICS ENGINEERING **B**

DATA SCIENCE **B**

*The BS+MS program is only available to currently enrolled UCR undergraduate engineering students

BIOENGINEERING **B** **+**

The Bioengineering program is home to an immersive, interdisciplinary experience offering students exposure to the fields of bioengineering, biomedical engineering, and biotechnology. Many graduates go on to careers in the medical field, pharmaceutical industry, food industry, or medical school.

ALUMNI EMPLOYED AT PLACES INCLUDING:



Edwards



Abbott

THORLABS

EXAMPLES OF COURSES

- BIEN 110 Biomechanics of the Human Body
- BIEN 125 Biotechnology & Molecular Bioengineering
- BIEN 130 Bioinstrumentation
- BIEN 138 Fundamental Principles of Wound Repair
- BIEN 166 Bioinspired Engineering for Sustainable Energy

Website: www.bioeng.ucr.edu

Email: big@engr.ucr.edu

Phone Number: (951) 827-4303

FUTURE OUTLOOK

7%

Expected increase in
job outlook
(2023-2033)

22,200

Total number of jobs
(2024)

\$100,730

Average pay
(2025)

Source: BLS.org

CHEMICAL ENGINEERING B +

The Chemical Engineering program allows students to turn the discoveries of chemists and physicists into commercial realities in industries such as pharmaceuticals, fuels, pollution control, medicine, and nuclear and electronics. Students can choose one of three focus areas: Biochemical Processes, Nanotechnology, or Chemical Engineering.

ALUMNI EMPLOYED AT PLACES INCLUDING:



illumina®



EXAMPLES OF COURSES

- CHE 131 Electrochemical Engineering
- CHE 136 Advanced Topics in Heat Transfer
- CHE 150 Biosensors
- CHE 161 Nanotechnology Processing Laboratory
- CHE 171 Pollution Control for Chemical Engineers

Website: www.cee.ucr.edu
Email: gradcee@engr.ucr.edu
Phone Number: (951) 827-2423

FUTURE OUTLOOK

10%

Expected increase in
job outlook
(2023-2033)

21,600

Total number of jobs
(2024)

\$112,100

Average pay
(2025)

Source: BLS.org

COMPUTER ENGINEERING B +

COMBINING ELECTRICAL ENGINEERING AND COMPUTER SCIENCE

The Computer Engineering program offers the knowledge and skills needed to build and improve computing systems – both hardware and software – ranging from small scale embedded devices to data centers and supercomputers. Create your own computers, video games, or build and program a robot from scratch.

ALUMNI EMPLOYED AT PLACES INCLUDING:



EXAMPLES OF COURSES

- CS 134 Video Game Creation and Design
- CS 162 Computer Architecture
- CS 177 Modeling and Simulation
- EE 136 Semiconductor Device Processing
- EE 146 Computer Vision

Website: www.cen.ucr.edu
Email: contact@cen.ucr.edu
Phone Number: (951) 827-2471

FUTURE OUTLOOK

5%

Expected increase in
job outlook
(2023-2033)

76,800

Total number of jobs
(2024)

\$128,170

Average pay for computer
hardware engineers (2025)

Source: BLS.org

COMPUTER SCIENCE B +

Website: www1.cs.ucr.edu
Email: contact@cs.ucr.edu
Phone Number: (951) 827-5639

The Computer Science program is highly ranked and provides an understanding of fundamental principles of modern computing technology to secure careers in areas like cyber security, high performance computing, systems and networks, architecture, embedded systems, and more.

ALUMNI ARE EMPLOYED AT PLACES INCLUDING:



EXAMPLES OF COURSES

- CS 061 Machine Organization and Assembly Language Programming
- CS 122B Advanced Embedded and Real-Time Systems
- CS 160 Concurrent Programming and Parallel Systems
- CS 165 Computer Security
- CS 166 Database Management Systems

FUTURE OUTLOOK

30%

Expected increase in job outlook (2023 - 2033)

33,500

Total number of jobs (2021)

\$102,600

Average pay (2025)

Source: BLS.org

COMPUTER SCIENCE WITH BUSINESS APPLICATIONS B

Website: www1.cs.ucr.edu
Email: contact@cs.ucr.edu
Phone Number: (951) 827-5639

The Computer Science with Business Applications program is designed to prepare graduates for professional work with computer systems and business environments.

ALUMNI ARE EMPLOYED AT PLACES INCLUDING:



EXAMPLES OF COURSES

- CS 169 Mobile Wireless Networks
- CS 182 Software Testing and Verification
- MATH 135 A/B Numerical Analysis
- BUS 125 Simulation for Business
- BUS 173 Introduction to Databases for Management

FUTURE OUTLOOK

20%

Expected increase in job outlook (2022-2033)

40,300

Total number of jobs (2024)

\$140,910

Average pay (2024)

Source: BLS.org

DATA SCIENCE B

The Data Science program bridges core components from Computer Science and Statistics and focuses on studying the collection, management, and analysis of data to extract knowledge.

Data science researchers work to make sense of data banks in novel ways by finding statistically and computationally efficient solutions.

The Data Science program launched in 2020 and graduated its first class in 2022.

EXAMPLES OF COURSES

- CS 105 Data Analysis Methods
- CS 167 Introduction to BIG-DATA Management
- MATH 120 Optimization
- STAT 140 Nonparametric Techniques
- STAT 146 Statistical Forecasting Techniques

Website: www1.cs.ucr.edu
Email: contact@cs.ucr.edu
Phone Number: (951) 827-5639

FUTURE OUTLOOK

36%

Expected increase in
job outlook
(2023-2033)

245,900

Total number of jobs
(2024)

\$108,020

Average pay
(2025)

ELECTRICAL ENGINEERING B +

The Electrical Engineering program is designed to focus on six areas: communications, signal processing and networking; control and robotics; embedded systems and VLSI; intelligent systems; nanotechnology, advanced materials and devices; and power systems and smart grid.

ALUMNI ARE EMPLOYED AT PLACES INCLUDING:



EXAMPLE OF COURSES

- EE 116 Engineering Electromagnetics
- EE 123 Power Electronics
- EE 135 Analog Integrated Circuit Layout and Design
- EE 142 Pattern Recognition and Analysis for Sensor Data
- EE/ME 145 Robotics Planning and Kinematics

Website: www.ee.ucr.edu
Email: ecegradoffice@ece.ucr.edu
Phone Number: (951) 827-2484

FUTURE OUTLOOK

9%

Expected increase in
job outlook
(2023-2033)

287,900

Total number of jobs
(2024)

\$109,010

Average pay
(2025)

Source: BLS.org

ENVIRONMENTAL ENGINEERING

B +

Website: www.cee.ucr.edu
Email: gradcee@engr.ucr.edu
Phone Number: (951) 827-2423

The Environmental Engineering program focuses on technical knowledge to identify, design, build, and operate systems. Career pathways may include air pollution, water quality, wastewater treatment, and global environmental issues.

ALUMNI ARE EMPLOYED AT PLACES INCLUDING:



EXAMPLE OF COURSES

- ENVE 134 Technology of Air Pollution Control
- ENVE 146 Water Quality Systems Design
- CHE 102 Catalytic Reaction Engineering
- CEE 132 Green Engineering
- ENVE 145 Hazardous Waste Management

FUTURE OUTLOOK

7%

Expected increase in
job outlook
(2023-2033)

39,400

Total number of jobs
(2024)

\$100,900

Average pay
(2025)

Source: BLS.org

MATERIALS SCIENCE AND ENGINEERING

B

Website: www.mse.ucr.edu
Email: mse-program@engr.ucr.edu
Phone Number: (951) 827-5830

The interdisciplinary Materials Science and Engineering program combines physics, chemistry and mathematics to predict, modify and tailor materials properties at the electrical, optical, magnetic, mechanical, and chemical levels to enhance performance.

ALUMNI ARE EMPLOYED AT PLACES INCLUDING:



EXAMPLE COURSES

- BIEN/MSE 136 Tissue Engineering
- EE 162 Introduction to Nanoelectronics
- MSE 143 Failure Analysis and Prevention
- EE 139 Magnetic Materials
- MSE 156 Atomistic Modeling of Materials

FUTURE OUTLOOK

6%

Expected increase in
job outlook
(2023-2033)

23,000

Total number of jobs
(2024)

\$100,100

Average pay
(2025)

Source: BLS.org

MECHANICAL ENGINEERING



The Mechanical Engineering program allows students to learn the fundamentals of modern-engineering software computing tools, gain hands-on experience in measurement science, apply basic principles of solid mechanics, materials science, fluid mechanics, and heat transfer in laboratories, and utilize modern engineering design principles and tools.

ALUMNI ARE EMPLOYED AT PLACES INCLUDING:



EXAMPLE COURSES

- ME 113 Fluid Mechanics
- ME 117 Combustion and Energy Systems
- ME 176 Sustainable Product Design
- ME 180 Optics and Laser in Engineering
- ME 136 Environmental Impacts of Energy Production and Conversion

Website: www.me.ucr.edu

Email:

me-gradprogram@engr.ucr.edu

Phone Number: (951) 827-5830

FUTURE OUTLOOK

11%

Expected increase in job outlook (2023-2033)

299,310

Total number of jobs (2024)

\$99,510

Average pay (2025)

Source: BLS.org

ROBOTICS ENGINEERING B

With its first cohort in Fall 2022, the new B.S. in Robotics focuses on the mechanical, electrical and algorithmic principles underlying the design, construction, and operation of intelligent and autonomous robots in complex settings. The program provides students with a comprehensive, theoretical preparation and practical training in state-of-the-art facilities.

EXAMPLE OF COURSES

- **Virtual Reality 4 (CS 135)** | Learn what goes into developing virtual reality worlds, including motion and physics, immerse experiences, human visual perception, and environmental and social interactions.
- **Mechanical Engineering Design 3 (ME 175C)** | Create, test and evaluate your own prototype.
- **Robotic Planning and Kinematics 4 (ME 145)** | Take a deep dive into motion planning and kinematics topics with an emphasis in geometric reasoning, programming, and matrix computations.

Website: www.robotics.ucr.edu

Email: roboticsms@engr.ucr.edu

Phone Number: (951) 827-2484

FUTURE OUTLOOK

10%

Expected increase in job outlook (2023-2033)

11%

Projected growth in mechanical engineering jobs (2023-2033)

\$101,000

Average pay for a robotics engineer (2025)

Sources: BLS and Indeed

WORLD-CLASS RESEARCH CENTERS



CENTER FOR ENVIRONMENTAL RESEARCH AND TECHNOLOGY (CE-CERT) ⚡ 🚗 🌱

CE-CERT addresses society's most pressing environmental challenges in air quality, climate change, energy, and transportation. cert.ucr.edu



CENTER FOR INDUSTRIAL BIOTECHNOLOGY (CIB) 🧬 🧪 ⚡ 🌱

CIB seeks to unlock the full potential of industrial biotechnology applications in the areas of healthcare, agriculture, industrial chemistry, and biofuels. cib.ucr.edu



WINSTON CHUNG GLOBAL ENERGY CENTER (WCGEC) ⚡ 🌱

WCGEC focuses on developing emerging energy solutions related to storage, generation and distribution to advance the science and applications of energy technology. wcgcec.ucr.edu



CENTER FOR ROBOTICS AND INTELLIGENT SYSTEMS (CRIS) 🤖 📶

CRIS researchers focus on the foundations and applications of intelligent and autonomous systems, including robotics, computer vision, controls, machine learning, and real-time systems. www.cris.ucr.edu



CENTER FOR ADVANCED NEUROIMAGING (UCR-CAN) 🧠

UCR-CAN researchers are taking a deeper dive into the brain than ever before, uncovering the secrets of brain disorders, mapping and accessing connectivity, and visualizing deep-brain structures. can.ucr.edu



CENTER FOR NETWORKED CONFIGURABLE COMMAND, CONTROL AND COMMUNICATIONS FOR RAPID SITUATIONAL AWARENESS (NC4) 📶 🤖

NC4 studies fundamental research issues involved in creating robust, resilient command, control, and communication systems that lead to more accurate and timely situational awareness. nc4.ucr.edu

 **Biomedical**

 **Cyber Security**

 **Network
Communications**

 **Sustainability**

 **Biotechnology**

 **Energy**

 **Robotics and
Intelligent Systems**



CENTER FOR RESEARCH AND EDUCATION IN CYBER SECURITY AND PRIVACY (CRESP)

CRESP works on designing novel approaches to building secure systems and enabling them to detect, resist, and tolerate attacks. <https://cresp.ucr.edu>



CENTER FOR UBIQUITOUS COMMUNICATION OF LIGHT (UC-LIGHT)

UC-Light enables wireless communications by embedding signals into the light emitted by next-generation LEDs in systems for illumination, traffic control, advertising, and other purposes. www.uclight.ucr.edu



ENERGY, ECONOMICS, AND ENVIRONMENT RESEARCH CENTER (E3)

E3 determines how society can best integrate the energy system, the economic system and built environment to provide for growing demand of energy in an economical and sustainable manner. e3.ucr.edu



CENTER OF INNOVATIVE MATERIALS FOR ENERGY AND ENVIRONMENT (UC-KIMS)

Developing high performing and environmentally friendly materials. Website coming soon!



CE-CERT is home to the world's largest known indoor atmospheric chamber.

STUDENT PROFESSIONAL ORGANIZATIONS

CHOOSE FROM 18 STUDENT PROFESSIONAL ORGANIZATIONS

Build your engineering community and put to use all you learn in the classroom. From student projects to community outreach events and leadership workshops to industry networking, student professional organizations enhance your college experience and your future success.



BREAKING RECORDS WITH STUDENT ORGANIZATION SUPPORT

NSBE BECOMES THE FIRST TO ENDOW A FUND SUPPORTING A STUDENT ORGANIZATION

The National Society of Black Engineers chapter at UCR established the first endowed fund in the university's history to support a student organization. The fund will support in perpetuity NSBE's mentorship and professional development opportunities including annual resources for professional development activities, invited industry speakers, leadership and research conference experiences, and community outreach.

The NSBE Fund will provide practical support and remind Black engineers at UCR that their predecessors believe wholeheartedly in both their success and commitment to becoming engineers. When faced with obstacles, students will know they have a strong community to depend on.

Keilani Conner '20, past NSBE President

HANDS-ON LEARNING AND ACCELERATED MASTER'S PROGRAM

NEW WAYS TO INNOVATE

Fall 2021 marked the launch of a third new makerspace for all students to turn their ideas into reality. The new Electrical Engineering Makerspace features soldering stations, 3D printers, a milling machine, drillpress, high-end oscilloscope, capacitors, and much more.

FIND YOUR MAKERSPACE

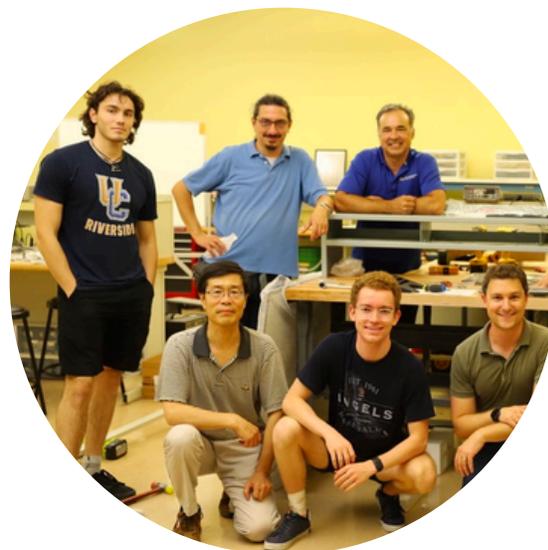
BIOENGINEERING MAKERSPACE

ELECTRICAL ENGINEERING MAKERSPACE

MECHANICAL ENGINEERING MACHINE SHOP

MECHANICAL ENGINEERING MACHINE SHOP

UCR CREAT'R LAB MAKERSPACE



Electrical and Computer Engineering MakeRspace receives new furnishings in September 2022.

50%+

of engineering undergraduates report conducting research in faculty laboratories

AVAILABLE TO CURRENT UCR ENGINEERING STUDENTS PURSUING A BACHELOR'S DEGREE

BACHELOR'S+MASTER'S PROGRAM

PROGRAM BENEFITS



Earn a M.S. degree in as little as three quarters



Half the cost of a traditional M.S. degree



No GRE requirement



Guaranteed admission if requirements are met

\$15k+

Engineering Master's graduates report earning \$10,000-\$15,000 more upon graduation

U.S. Bureau of Labor Statistics

MEET A FUTURE GRAD



Keith Z.
B.S.+M.S. student and future software engineer at zyBooks

“ The B.S.+M.S. program allowed me to gain a more fine-grained understanding of my field, dive into new research areas and develop my technical skills. I would recommend this program to anyone wishing to 'level up' in a timely and cost-effective manner. ”

INVESTING \$1 BILLION IN YOUR NEW HOME



TOP EATERIES

Enjoy American and international cuisine at all-you-can-eat dining halls, grab a coffee or snack at our coffee shops and convenience stores, or have a meal at The Barn, UCR's legendary dining and entertainment space.



STATE-OF-THE-ART RECREATION CENTER

Get fit by climbing "The Rock", running the indoor track, or playing at the raquetball, squash and tennis courts. Plus, swim laps at the pool, learn to cook in the classroom kitchen, and take on the outdoor Challenge Course!



FESTIVALS AND EVENTS

With weekly concerts and cultural celebrations at the Bell Tower, food truck festivals, epic Block Party, Winter Soulstice, and Spring Splash music concerts, you'll never run out of things to do on campus!



SAFETY IS OUR TOP PRIORITY

We have a 24/7, on-campus police department and emergency text notification system. At night, our community service officers patrol halls and parking lots and Campus Safety Escorts accompany students across campus.



UCR Student Recreation Center (SRC) pool and two-story gym

RIVERSIDE, CALIFORNIA

WELCOME TO RIVERSIDE: SMALL TOWN CHARM, **BIG** ON OPPORTUNITY!

The City of Riverside awaits you! Nestled just inland of Los Angeles, Riverside offers everything within reach. You can visit the mountains during the day and still make it to the beach for a night-time bonfire with friends. Riverside is full of historic gems including the world-famous Historic Mission Inn Hotel and Spa, well-known for its dazzling holiday displays, and the California Citrus Historic State Park, which pays homage to the city's citrus roots. No matter what you want to do, Riverside is at the heart of it all!

ONE HOUR OR LESS FROM CAMPUS:



Hollywood



Beaches



Mountains



Disneyland



Palm Springs



Wineries



Apple Orchards



Hot Springs



Mission Inn



Shopping



Hiking Trails

AND WITHIN DRIVING DISTANCE TO:



San Diego



San Francisco



Joshua Tree
National Park



Las Vegas



Downtown Riverside at dusk



Marlan and Rosemary Bourns
College of Engineering

LEARN MORE

UNDERGRADUATE ADMISSIONS

900 University Avenue | Winston Chung Hall Suite 446 | Riverside, CA 92521 USA

Website: <https://undergraduate.engr.ucr.edu/> | Email: undergrad@engr.ucr.edu

Phone: 951-827-5190

*The information in this publication is accurate and reliable as of the date it was published but may change without notice.
Please contact Undergraduate Admissions or the advising team at your program of choice to learn the
most up-to-date information.*