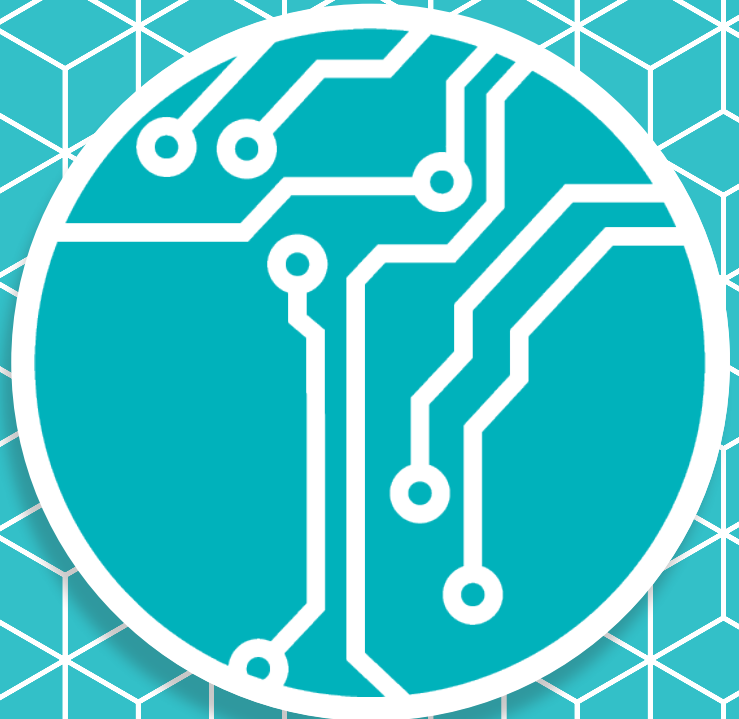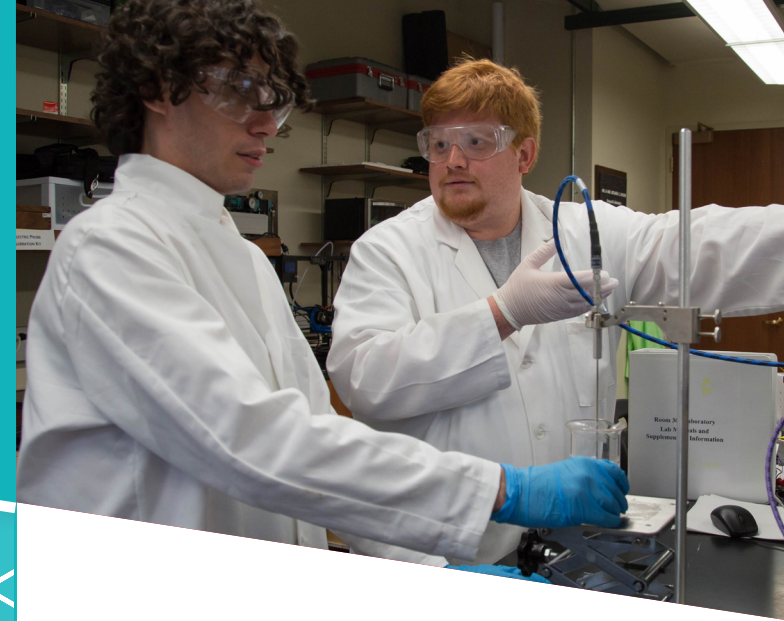# Electrical & Computer Engineering

About the
VCU College of Engineering

The **VCU College of Engineering**, an innovation front-runner in academics and research, brings real-world education to Central Virginia. Our collaborative and multidisciplinary partnerships prepare undergraduate, master's and doctoral students for leadership. Part of a premier research university, the VCU College of Engineering enhances regional and global prosperity through cutting-edge developments in tissue engineering, drug delivery, bioinformatics, cybersecurity, mechanical systems and particle science. We make it real by turning great ideas into breakthrough technologies. Our facilities are hubs of discovery, powered by an expanding student body and faculty committed to excellence. We encourage partnering with industry and the community, bringing new collaborators into our projects. Our key research areas include: sustainability and energy engineering; micro and nano electronic systems; pharmaceutical engineering; mechanobiology and regenerative medicine; big data mining and device design and development.

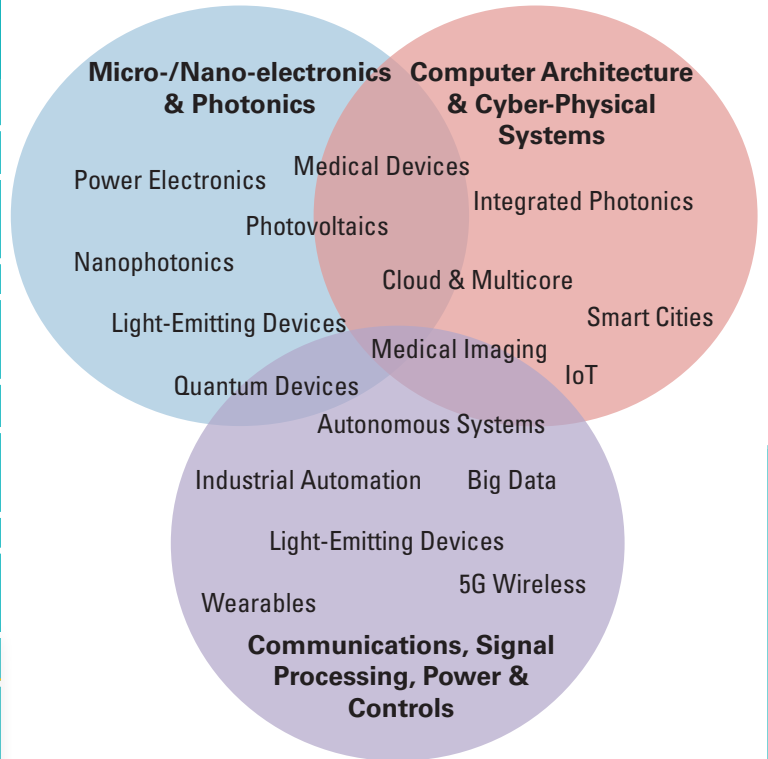**electrical-and-computer.egr.vcu.edu**

Application Deadline: **January 15**
For Scholarship Consideration: **November 15**

VCU College of Engineering
601 West Main Street
Richmond, Virginia 23284-3068
(804) 828 - 3925
askengineering@vcu.edu

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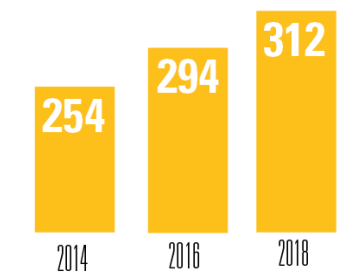
VCU College of Engineering

Fast Facts

 # 1 Richmond, Va. ranked happiest city.*

*U.S. National Bureau of Economic Research (2014)

94% of graduates employed six months after graduation

14:1 undergraduate student to faculty ratio

312 undergraduate students

23 faculty

30% of undergraduates offered merit-based scholarships

$70K average starting salary for undergraduates

ENROLLMENT

2014	2016	2018
254	294	312

Areas of Study

Micro-/Nano-electronics & Photonics
Power Electronics
Medical Devices
Photovoltaics
Nanophotonics
Light-Emitting Devices
Quantum Devices

Computer Architecture & Cyber-Physical Systems
Integrated Photonics
Cloud & Multicore
Smart Cities
Medical Imaging
IoT

Autonomous Systems
Industrial Automation
Big Data
Light-Emitting Devices
5G Wireless
Wearables

Communications, Signal Processing, Power & Controls

APPLY TODAY:
vcu.edu/admissions/apply/
Deadline: January 15

QUESTIONS? CONTACT:
Michael Cabral, Ph.D.
Associate Professor
804-828-9068
mcabral@vcu.edu

Electrical and Computer Engineering

Degrees Offered
- Electrical Engineering B.S. or Minor
- Computer Engineering B.S. or Minor

Research Opportunities
- Vertically Integrated Projects (VIP)
- Dean's Undergraduate Research Initiative (DURI)

Effective Experiential Learning
- Capstone Design experience and expo
- Hands-on laboratories in 80 percent of all classes
- Small class sizes

Integrated Industry-University Partnerships
- Diverse internship and Co-Op opportunities at partner companies including **Al**tria, BMW, Boeing, Dominion Power, Intel, Micron, Northrop Grumman, NVIDIA, Rockwell and Yahoo
- Industry-funded projects

Engineering Scholarship Opportunities
- Wright Engineering Access Scholarship
- Dean's Scholarship
- Chair's Scholarship

1-Year Master's Program

Highly qualified students are eligible for **our bachelor-to-master's** program to **earn both degrees in five years**.

Questions? Contact:

Ümit Özgür, Ph.D.
Graduate Program Director
804-828-2581
uozgur@vcu.edu

Undergraduate Research

The Vertically Integrated Projects (VIP) program provides undergraduate students the opportunity to participate in multidisciplinary, team-based projects. Students can earn credits for working on specific research projects with other undergraduates, graduate students and faculty. This valuable team-based learning experience expands students' job opportunities by enhancing their resumes.

Unmanned Aerial Vehicles (UAV)

The VCU UAV lab is conducting cutting-edge research on flight control systems. VIP teams design, implement and test complex digital hardware and software for autopilots of small UAVs. UAVs are currently the most dynamic growth sector of the international aerospace industry.

Medical Devices

In the medical devices laboratory, researchers apply electromagnetic principles to the design and development of diagnostic and therapeutic tools, primarily for cancer and diabetes research. Electromedical/therapeutic devices make up about 33 percent of the $110 billion medical devices market.

Optics and Photonics

In this team, participants study firsthand the vast potential of light-based technologies, working to develop numerous groundbreaking devices that may lead to commercial products. Optics and photonics technologies are a rapidly growing research and industry sector. Many leaders in the photonics community believe that light-based technologies will be fundamental to 21st century society.

Cyber-Physical Systems

Cyber-physical systems (CPS) are typically composed of networked hardware and software components tightly integrated with physical elements. VCU's Cyber-Physical Systems lab conducts cutting-edge research for designing next generation autonomous systems, including smart buildings, smart homes, smart factories and smart cities.

RVA

The VCU College of Engineering is nationally recognized for attracting talented, diverse graduate students and preparing them for valuable opportunities in STEM fields. Here, you'll find state-of-the-art facilities, faculty members with international reputations, and a collaborative, entrepreneurial culture. The result? Outstanding opportunities for emerging scholars and superior preparation for the next generation of research, industry and higher education leaders. This is how we make it real. Visit **egr.vcu.edu** for more information.

Entrepreneurial. Creative. Forward-thinking. As Virginia's thriving, multifaceted capital, Richmond is a magnet for Fortune 500 companies and high-energy startups. Our outstanding campus gives us metropolitan sophistication with a small-town atmosphere. Check out our colorful mix of historic and contemporary neighborhoods lined with galleries and boutique shops. Walk or bike through our green spaces, parks and along our top-ranked James River trails. Sample our top-notch restaurants and breweries and discover why U.S. News and World Report named us one of the country's best under-the-radar foodie cities. For work and play, Richmond has it all. All we need is you. Learn more at **visitrichmondva.com**.