

# Engineering Science:

*Path to 4-year engineering degree*

*Dr. Leah M. Akins*

Engineering Science Program Chair

Dutchess Community College

[akins@sunydutchess.edu](mailto:akins@sunydutchess.edu)

# Why Engineering Science and not Engineering?

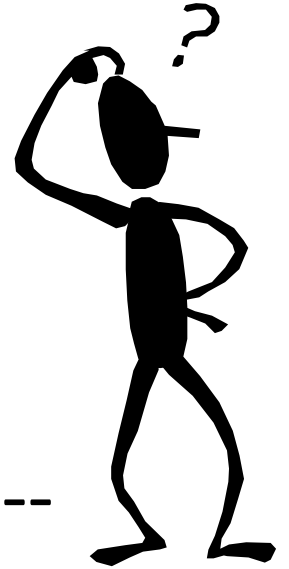
- Engineering is a four-year degree.
- DCC's Engineering Science program provides the first two years locally and affordably.
- Top choices of four-year engineering degrees for DCC graduates ...
  - Mechanical (includes robotics, vehicles, aeronautics)
  - Electrical (includes electronics, communications, control systems, robotics, electric grid, smart systems, computers)
  - Civil (includes structures, transportation, environmental)

# What Do Engineers Do?

Engineers, in the beginning of their careers, **produce, operate, test, sell and service** the products and systems of our technological society.

---

Engineers, advanced in education and/or a few years along in their career, **conceive, design and develop** these products and systems OR manage those doing the **production, operation, testing, selling, and servicing.**



# What Are Engineers Doing?



**The New York Times**



By Dennis Overbye

Feb. 19, 2021

# *Perseverance's Pictures From Mars Show NASA Rover's New Home*

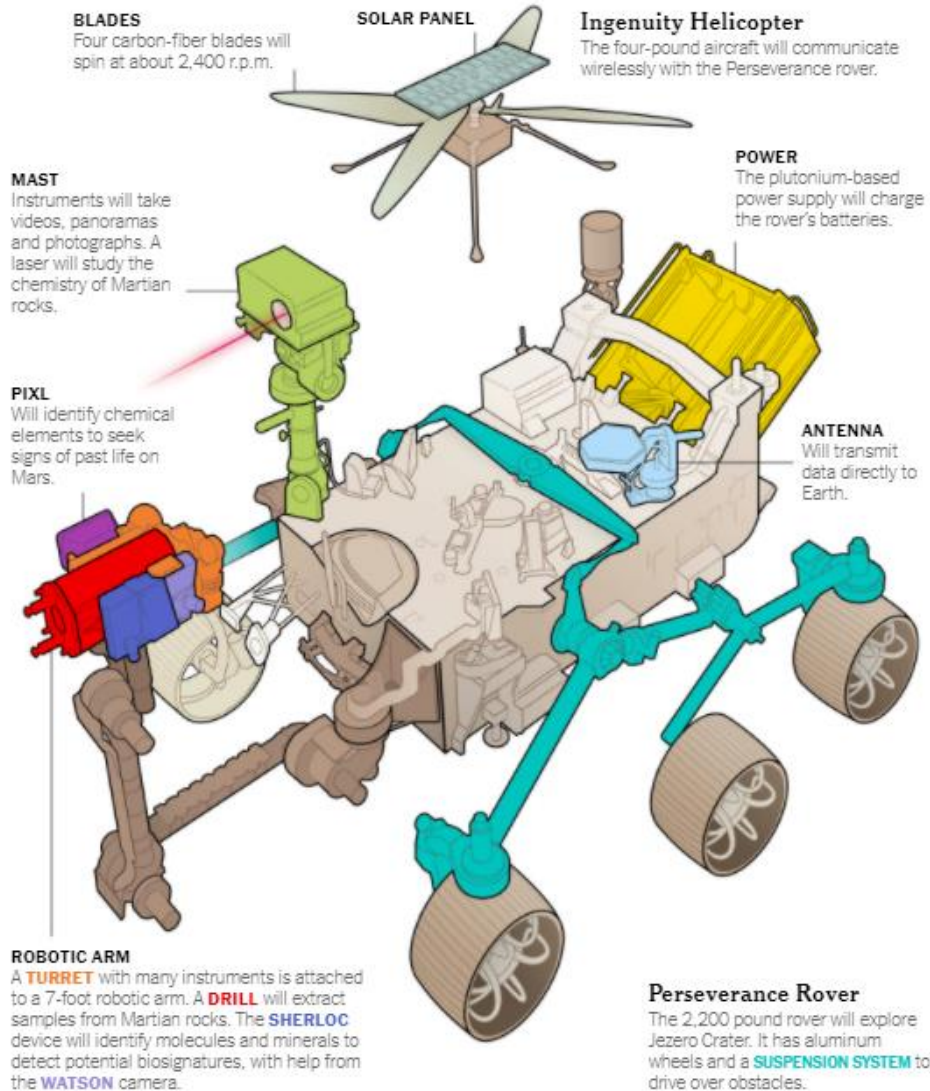
Scientists working on the mission are eagerly scrutinizing the first images sent back to Earth by the robotic explorer.



Feb. 19, 2021

## Perseverance

The NASA mission includes Perseverance, a 2,200-pound rover, and Ingenuity, an experimental Mars helicopter.



# Colorado researchers develop wearable tech that uses your body as a battery

**Brett Molina** USA TODAY

Published 3:00 p.m. ET Feb. 12, 2021

<https://www.usatoday.com/story/tech/2021/02/12/wearable-tech-using-body-battery-created-colorado-researchers/6735709002/>

## The New York Times

### *G.M. Will Sell Only Zero-Emission*

### *Vehicles by 2035*

By [Neal E. Boudette](#) and [Coral Davenport](#)

Jan. 28, 2021

The move, one of the most ambitious in the auto industry, is a piece of a broader plan by the company to become carbon neutral by 2040.

## *A Glimpse of America's Future: Climate Change Means Trouble for Power Grids*

Systems are designed to handle spikes in demand, but the wild and unpredictable weather linked to global warming will very likely push grids beyond their limits.



By Brad Plumer

Published Feb. 16, 2021 Updated Feb. 18, 2021

# Engineering Science (ENR)

## *Where do graduates go from here?*

- Transfer Schools
    - SUNY New Paltz
    - Binghamton University (SUNY)
    - University of Buffalo (SUNY)
    - Rensselaer Polytechnic Institute
    - Clarkson University
    - Manhattan College
    - Syracuse University
    - Cornell University
- and more ...



## See Video for Presentation of Listed Graduates from ENR (Associate of Science (A.S.)) Degree

- DJ – Electronics Engineer with Northrop Grumman in Maryland
  - B.S. Electrical and Electronics Engineering, University of Buffalo
  - M.S. Electrical and Computer Engineering, Johns Hopkins University
- Maria – currently graduate student at Manhattan College
  - B.S. Chemical Engineering, Manhattan College
  - M.S. Chemical Engineering, Manhattan College

## See Video for Presentation of Listed Graduates from ENR (Associate of Science (A.S.)) Degree

- Joseph – Aeronautical Engineer with Sikorsky in Connecticut
  - B.S. Mechanical Engineering, SUNY at New Paltz
- John – Outside Plant Engineer with Verizon in New York
  - B.S. Mechanical Engineering, Binghamton University
  - Currently pursuing M.B.A., Jack Welch Management Institute

## See Video for Presentation of Listed Graduates from ENR (Associate of Science (A.S.)) Degree

- Michael – Transmission Line Design Engineer with Central Hudson Gas & Electric in New York
  - B.S. Civil Engineering, Rensselaer Polytechnic Institute
  - M.S. Civil Engineering, Clarkson University
- David – Senior Scientist with Applied BioMath in Massachusetts
  - B.S. Bioengineering, Binghamton University
  - M.S. and Ph.D. Biomedical Engineering, Cornell University

# How does DCC's program prepare *you*?

- First 2 years of all engineering programs are grounded in strong analytical skills built through math and science course work.
  - Entry math level : *Calculus 1*
    - Math completed at DCC: *Calculus 1, Calculus 2, Calculus 3, Differential Equations, and maybe an additional upper level math course.*
  - Science courses: *College Chemistry 1, Engineering Physics 1, Engineering Physics 2, Engineering Physics 3*
    - Additional courses needed as prerequisites if didn't take Regents chemistry and/or physics in HS
  - Engineering courses: *Introduction to Engineering, Computer Programming for Engineers, Engineering Statics, Engineering electives based on student's transfer plans*

# Engineering Science at DCC

*Your path to  
4-year engineering degree*

*Dr. Leah M. Akins*

Engineering Science Program Chair

Dutchess Community College

[akins@sunydutchess.edu](mailto:akins@sunydutchess.edu)