Graduate Research Opportunities in **Mechanics and Materials**

the MS in Engineering program at Rowan University

**Rowan University** is located in Glassboro, NJ, 30 minutes from Philadelphia and one hour from the Jersey Shore. The college of engineering at Rowan University is renowned for its multidisciplinary, hands on approach to engineering education. The college has an excellent student to faculty ratio, allowing MS Students to receive significant individual attention from faculty.

The **Mechanics and Materials focus** is available to graduate students in either the Mechanical Engineering or Civil and Environmental Engineering programs. The sequence involves three semesters and one summer of interdisciplinary coursework, plus research that culminates in a Master's Thesis. Students pursuing this focus will develop a strong foundation in mechanics and the behavior of materials through 24 credit hours of coursework, complemented by research - where the student works closely with one or more faculty members. Most projects are externally sponsored, allowing students to receive tuition scholarships and stipends, while working on cutting-edge topics. Depending on the chosen electives and research topic, this focus is appropriate for students interested in biomechanics, dynamics, geotechnical, materials, structures, or transportation.

**Recent graduates** have gone on to careers in government and industry, or pursued doctorates.

### Typical Course of Study

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<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
<th>Summer</th>
<th>Fall Semester</th>
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<tr>
<td>3 cr.</td>
<td>Advanced Solid Mechanics or Rheology</td>
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<td>3 cr.</td>
<td>Finite Element Analysis</td>
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<td>Engineering Applications of Analysis</td>
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<td>Elective</td>
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<td>3 cr.</td>
<td>Strategic Engineering Management</td>
<td>3 cr.</td>
<td>Research</td>
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**Affiliated Faculty**

- Dr. T.R. Chandrupatla (ME) – FEA, optimization
- Dr. Douglas Cleary (CEE) – Reinforced concrete
- Dr. Eric Constans (ME) – Dynamics
- Dr. Jennifer Kadlowec (ME) - Biomechanics
- Dr. Ralph Dusseau (CEE) – Bridge engineering
- Dr. Yusuf Mehta (CEE) – Pavement materials
- Dr. James Newell (Che) - Polymers
- Dr. William Riddell (CEE) – Failure mechanics
- Dr. Beena Sukamaran (CEE) – Particulate mechanics
- Dr. Paris von Lockette (ME) – Polymers and composites

### Electives offered in

- Analytical Dynamics
- Biomaterials
- Bridge Engineering
- Computational Materials Science
- Elastic Stability
- Fatigue and Fracture Mechanics
- Foundation Engineering
- Pavement Materials
- Prestressed Concrete Design
- Reinforced Concrete Design
- Rheology
- Steel Design
- Structural Analysis
- Structural Mechanics

### Funding Opportunities

Research assistantships are awarded competitively, based on funded projects. For full consideration for a research assistant position, we recommend that your application is submitted by February 1st. Initial decisions on funding are typically made in April. However, additional offers are sometimes made later, as additional sources of funding are secured.

### Recent Funded Projects

Biomechanics of neck range of motion for crash safety studies. Dynamic analysis of bridges; Energy absorbing utility poles; Evaluation of modified binder; Evaluation of warm mix asphalt; FEA analysis of flexible airport pavements; Imaging of sand particles to characterize effect of shape on mechanical properties; Improving biofidelity of child crash-test dummies; Magneto rheological elastomers; Mechanistic-empirical design of asphalt pavements; Performance of subbase materials in airport runways.

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For More Information:  
http://www.rowan.edu/engineering  
Application Materials:  
http://www.rowan.edu/graduateschool/prospective_students/grad_application/index.htm