

# THEORETICAL AND APPLIED MECHANICS

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Degree Types: PhD, MS

The interdisciplinary Graduate Program in Theoretical and Applied Mechanics (<https://www.mccormick.northwestern.edu/theoretical-applied-mechanics/>) (TAM) combines many disciplines in the McCormick School of Engineering and Applied Science including civil and environmental engineering, mechanical engineering, biomedical engineering, and materials science. Qualified students of engineering, mathematics, physics, or an allied science may pursue the MS or PhD in solid mechanics or fluid mechanics.

Specific applications of mechanics research include nanotechnology, soft matter, cell mechanics, composite materials, multiscale modeling, sensor development, nondestructive evaluation, transportation materials and vehicles, earthquake, and material and structural design with uncertainty quantification.

Colloquia and seminars with world-renowned researchers are regularly scheduled in association with the program.

## **Additional resources:**

- Department website (<https://www.mccormick.northwestern.edu/theoretical-applied-mechanics/>)
- Program handbook(s)

## Degrees Offered

- Theoretical and Applied Mechanics BS/MS (<https://catalogs.northwestern.edu/tgs/theoretical-applied-mechanics/theoretical-applied-mechanics-bach-mast/>)
- Theoretical and Applied Mechanics MS (<https://catalogs.northwestern.edu/tgs/theoretical-applied-mechanics/theoretical-applied-mechanics-ms/>)
- Theoretical and Applied Mechanics PhD (<https://catalogs.northwestern.edu/tgs/theoretical-applied-mechanics/theoretical-applied-mechanics-phd/>)

## **Theoretical and Applied Mechanics: PHD**

Learning objective(s)/Students should be able to...

- Develop a foundational understanding of core concepts of fluid and solid mechanics.
- Design an original research project and apply appropriate research methodology and analyses to address a particular research question.
- Articulate broader impacts of research.
- Gain expertise in experimental and/or computational mechanics methodologies and practices.
- Develop competence in interdisciplinary team research.