School of Natural Sciences and Mathematics

The School of Natural Sciences and Mathematics offers both graduate and undergraduate programs in Biology and Molecular Biology, Chemistry and Biochemistry, Geosciences, Mathematics, and Physics, and a graduate program in Science Education. Certain options may exceed minimum requirements for degree. Undergraduate and post-baccalaureate programs in teacher certification are administratively housed in the School of Natural Sciences and Mathematics but serve other schools as well.

The undergraduate programs in **Biology** and **Molecular Biology** provide a basic foundation in molecular and cell biology to prepare students for graduate studies in biological sciences (BS), for professional studies in a wide variety of health-related areas, for secondary school teaching, and for employment as research assistants in pharmaceutical, biotechnology, government, and environmental science laboratories (BS, BA).

The undergraduate programs in **Chemistry** and **Biochemistry** provides the fundamental knowledge required for professional participation in chemically oriented industries, for graduate study in chemistry, and for medical or dental studies (BS), or for secondary science teaching or ancillary positions (sales, legal, etc.) in the chemical industries (BA).

The undergraduate program in **Geosciences** provides a general scientific background suitable for some careers in business or law, for secondary school teaching, or for employment as a professional geologist, or for graduate studies in Geosciences (BS).

The undergraduate programs in **Mathematics** (BS) encompass Mathematics, Statistics, and Applied Mathematics, and are designed so that students can have the opportunity to prepare for employment immediately upon graduation in a broad range of positions in business, industry, government and education - or for continuing with graduate studies in any of these areas.

The undergraduate **Physics** program offers a basic foundation in classical and modern physics for students interested in professional careers in physics, usually requiring graduate degrees, as well as in related fields, e.g., electrical engineering, medical physics, radiology, lasers, geophysics, computer science (BS), or a strong base in physics for students seeking to pursue careers in medicine, patent law, government or industrial laboratories, or secondary school teaching (BA).

The School of Natural Sciences and Mathematics also provides opportunities for students to complete Texas Teacher Certification requirements in Life Science, Chemistry, Physical Science, Composite Science, and Mathematics. Students who wish to be certified should consult the UTeach Dallas for specific requirements as soon as possible after formal admission to the University. Further details may be found in the Teacher Education Certification Programs section of the catalog.
UT-PACT BA/MD Program

The Partnership in Advancing Clinical Transition (UT-PACT) is a collaborative program between UT Dallas and UT Southwestern Medical School. Students enrolled in UT-PACT will have joint admission to BA in Biology and MD training programs. The University of Texas System initiative is an effort to expedite the training for healthcare professions and to prepare students for careers in medicine through the coordination of undergraduate and medical school curricula.

Information about the UT-PACT partnership is available at [www.utdallas.edu/pre-health/ut-pact](http://www.utdallas.edu/pre-health/ut-pact).

Major Honors

The Departments of the School of Natural Science and Mathematics offer the opportunity for outstanding students to graduate with Honors or Honors with Distinction in their major. The program provides for these students to work individually with faculty for an in-depth experience in research.

Eligibility requirements include:

- at least 30 graded semester credit hours of coursework at UT Dallas with a cumulative grade point average of 3.750,
- at least 12 semester credit hours of upper-division courses in the student's major with a grade point average of 3.750 over all the upper-division courses in the major, and
- completion of an honors thesis evaluated by two faculty members with a grade of at least B+.

The thesis should be submitted at least three weeks prior to the last day of classes of the term. It is then critiqued by the faculty mentor, returned to the student for revision and resubmission by the last day of classes of the term.

Honors with Distinction will be awarded to students whose theses are judged by a faculty committee of at least three members to be of exemplary quality, and if carried to fruition, would warrant publication in a journal in the field of work.

Minors

To minor in the School of Natural Sciences and Mathematics, students must take a minimum of 18 semester credit hours for the minor, 12 of which must be upper-division semester credit hours. Students who take a minor will be expected to meet the normal prerequisites in courses making up the minor, and should maintain a minimum GPA of 2.000 on a 4.00 scale (C average). Semester credit hours may not be used to satisfy both the major and minor requirements; however, free elective semester credit hours or major preparatory classes may be used to satisfy the minor. Students must complete all prerequisite sequences for required minor courses for all minors in the School of Natural Sciences and Mathematics. Students may choose to minor in any of the following fields of study:

- **Actuarial Science**
• Biology
• Biomolecular Structure
• Chemistry
• Geosciences
• Mathematics
• Microbiology
• Molecular and Cell Biology
• Neurobiology
• Physics
• Statistics

Faculty

Distinguished Chair in Natural Sciences and Mathematics; Dean of the School of Natural Sciences and Mathematics: Bruce M. Novak

Cecil and Ida Green Distinguished Chair in Systems Biology; Professor of Chemistry: A. Dean Sherry

Robert A. Welch Chair in Chemistry; Professor of Chemistry: Ray H. Baughman

Distinguished Chair in Natural Sciences and Mathematics: Roderick A. Heelis

Green Distinguished Chair in Academic Leadership: B. Hobson Wildenthal


Associate Professors: Jung-Mo Ahn, Michael C. Biewer, Swati Biswas, Gail A. M. Breen, Thomas H. Brikowski, John G. Burr, Yan Cao, Pankaj K. Choudhary, Mieczyslaw K. Dabkowski, Jeff L. DeJong, Gregg R. Dieckmann, Yuri Gartstein, Yulia Gel, Warren J. Goux, Ernest M. Hannig, Mustapha Ishak-Boushaki, Tae Hoon Kim, Lindsay J. King, David J. Lary, Anton V. Malko, Dennis L. Miller, Steven O. Nielsen, Paul Pantano, John W. Sibert IV, Mihaela C. Stefan, Hyuntae Yoo, Chuanwei Zhang, Jie Zheng

Assistant Professors: Mohammad Akbar, Maxim Arnold, Bhargab Chattopadhyay, Lunjin Chen, Min Chen, Xingang Chen, Nikki Delk, Heng Du, Jeremiah J. Gassensmith, Tobias Hagge, Qingwen Hu,
Michael Kesden, Jung-whan (Jay) Kim, Frank Konietschke, Jiyoung Lee, Yifei Lou, Lloyd Lumata, Oleg Makarenkov, Tomoki Oshawa, Kelli Palmer, Fabiano Rodrigues, Jason D. Slinker, Ronald A. Smaldone, Qiongxia (Joanne) Song, Anh Tran, Duane D. Winkler, Zhenyu Xuan, Hyuntae Yoo, Fan Zhang

**Clinical Professors:** Ronald D. Dearing, Natalia Humphreys

**Research Professor:** Duck Joo (D. J.) Yang

**Research Assistant Professors:** Monique Duncan, Lan Guo


**Associate Professor Emeritus:** James L. Carter

**Affiliated Faculty:** Stephen D. Levene, Jonathan E. Ploski

**Adjunct Faculty from the Research for Mathematics of the Mexican Council and Technology:** Jose Gomez-Larranaga, Adolfo (Sanchez) Valenzuela

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