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, BA) 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 program in **Actuarial Science** (BS) provides rigorous mathematical background with special courses in finance, economics, applied statistics, insurance and actuarial science devoted to prepare students for actuarial exams.

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.

**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
• Secondary STEM Education

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.
Distinguished Chair in Natural Sciences and Mathematics: Roderick A. Heelis
Green Distinguished Chair in Academic Leadership: B. Hobson Wildenthal
Professors: Larry P. Ammann, Phillip C. Anderson, Zalman I. Balanov, Kenneth J. Balkus Jr.,
Swati Biswas, Lee A. Bulla, Julia Chan, Pankaj K. Choudhary, Mieczyslaw K. Dabkowski,
Vladimir Dragovic, Rockford K. Draper, Sam Efromovich, John F. Ferguson, John P. Ferraris,
John W. Geissman, Yulia Gel, Robert Glosser, Matthew J. Goeckner, Juan E. González, M. Ali
Hooshyar, Mustapha Ishak-Boushaki, Joseph M. Izen, Wieslaw Krawcewicz, Mark Lee,
Xinchou Lou, David Lumley, Roger Malina, William I. Manton, Susan E. Minkoff, Inga H.
Musselman, L. Felipe Pereira, Dmitry Rachinskiy, Viswanath Ramakrishna, Lawrence J.
Reitzer, Stephen Spiro, Mihaela C. Stefan, Robert J. Stern, Janos Turi, Robert M. Wallace,
Anvar A. Zakhidov, Chuanwei Zhang, Li Zhang, Michael Qiwei Zhang, Jie Zheng, John Zweck
Associate Professors: Jung-Mo Ahn, Michael C. Biewer, Gail A. M. Breen, Thomas H.
Brikowski, John G. Burr, Yan Cao, Lunjin Chen, Min Chen, Jeff L. Dejong, Gregg R.
Dieckmann, Heng Du, Yuri Gartstein, Jeremiah J. Gassensmith, Warren J. Goux, Ernest M.
Hannig, Tae Hoon Kim, Lindsay J. King, David J. Lary, Anton V. Malko, Dennis L. Miller,
Steven O. Nielsen, Kelli Palmer, Paul Pantano, Fabiano Rodrigues, John W. Sibert IV, Jason
D. Slinker, Ronald A. Smaldone, Duane D. Winkler, Zhenyu Xuan
Assistant Professors: Maxim Arnold, Carlos Arreche, Zachary Campbell, Bhargab
Chattopadhyay, Sy Han (Steven) Chiou, Sheena D'ArCY, Nikki Delk, Sheel Dodani, Qingwen
Hu, Michael Kesden, Jung-whan (Jay) Kim, Michael Kolodrubetz, Frank Konietzchke, Jiyoung
Lee, Yifei Lou, Lloyd Lumata, Bing Lv, Oleg Makarenkov, Gabriele Meloni, Faruck Morcos,
Tomoki Ohsawa, Kaloyan Penev, Xiaoyan Shi, Sunyoung Shin, Russell Stoneback, Anh
Tran, Nathan Williams, Hyuntae Yoo, Fan Zhang, Hejun Zhu
Clinical Professors: Natalia Humphreys, Wenyi (Roy) Lu, David Murchison
Clinical Associate Professor: Mohammad Akbar
Research Professor: Duck Joo (D. J.) Yang
Research Assistant Professors: Lan Guo, Li Liu
Senior Lecturers: Mohammad Ahsan, Iris Alvarado, Kelly Aman, Irina Borovkov, Mehmet
Candas, Vincent P. Cirillo, Sergio Cortes, Malgorzata Dabkowski, Rabin Dahal, Anatoly
Eydelzon, Manjula Foley, Bentley T. Garrett, Sandhya R. Gavva, William R. Griffin, Brenna
Hill, Yuly Koshevnik, David L. Lewis, Changsong Li, Wen-Ju Lin, Paul Mac Alevey, Meenakshi
Maitra, Robert C. Marsh, Irina Martynova, Brady McCary, Deregue Musa, Jing Pan,
Nimanka Panapitiya, Ajaya Paudel, Elizabeth Pickett, Ignacio Pujana, Yanping Qin, Ruben
D. Ramirez, Scott A. Rippel, Elizabeth L. Rugg, Ilya Sapochnikov, Prabin Shilpakar,
Amandeep Sra, Uma Srikanth, Paul Stanford, Kuei Sun, Julie Sutton, Claudia Taenzler,
Tristan Whalen, Michelle Wilson, Wen-Ho Yu
Professors Emeritus: Carlos L. V. Aiken, Hans Bremer, Richard A. Caldwell, Austin J.
Cunningham, David E. Dunn, Donald M. Gray, Walter Heikkila, John H. Hoffman, George A.
McMechan, Richard M. Mitterer, Patrick Odell, Emile A. Pessagno Jr., Dean C. Presnall,
Wolfgang A. Rindler, Robert H. Rutford, Myron B. Salamon, Brian A. Tinsley, John W. van
Ness
Associate Professor Emeritus: James L. Carter
UT Dallas Affiliated Faculty: Hervé Abdi, Titu Andreescu, Alain Bensoussan, Yves J. Chabal,
Kyeongjae (KJ) Cho, John P. Ferraris, Massimo V. Fischetti, Heather Hayenga, Julia W. P.
Hsu, Wenchuang (Walter) Hu, Stefano Leonardi, Stephen D. Levene, Faruck Morcos,
Lawrence J. Overzet, A. Dean Sherry, Mary L. Urquhart, Zhenyu Xuan, Duck Joo (D. J.) Yang,
Hyuntae Yoo, Michael Qiwei Zhang