

Introduction to School of Mathematics and Statistics of NJUST

Nanjing University of Science and Technology (NJUST) traces its origins to the People's Liberation Army Military Institute of Engineering (also known as "Harbin Military Institute of Engineering"), the highest institution of military science and technology established in 1953 in New China. The School of Mathematics and Statistics at NJUST evolved from the Department of Fundamental Mathematics, which was founded in the early years of the university. In 1977, the university resumed its undergraduate program in mathematics. In 1979, the Department of Mathematics was established and began offering a master's program in "Military Operations Research". In the 1980s, renowned mathematics educator Professor JIANG Zejian joined the university and personally delivered a series of mathematics courses. He played a pivotal role in enhancing the instruction of fundamental mathematics and nurturing young faculty, which elevated the discipline's overall teaching and research caliber and produced a large number of outstanding students. SHEN Shanpu, a distinguished graduate of the class of 1982, served as President of the Canadian Applied and Industrial Mathematics Society and was recognized as a "Well-Known Overseas Scholar" by the Chinese Academy of Sciences. In 1993, the Department of Applied Mathematics, the Department of Applied Physics, and the Department of Applied Mechanics merged to form the School of Science at NJUST. In 2021, the Department of Mathematics, the Department of Statistics and Financial Mathematics, the Fundamental Mathematics Teaching Center, and the Mathematics Experiment Center were integrated to officially establish the School of Mathematics and Statistics.

The School comprises three departments (Department of Mathematics, Department of Computational Science, and Department of Probability and Statistics) and three centers (Fundamental Mathematics Teaching Center, Research Center for Mathematics and Its Applications, and Mathematics Experiment Center). It also hosts several provincial and ministerial-level platforms, including the Graduate Innovation Center for Mathematics and Physics under the Ministry of Education, the Graduate Innovation Base in Information Technology under the Ministry of Industry and Information Technology (MIIT), and the MIIT Key Laboratory of "Mathematical

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Theory Analysis and Modeling of Complex Systems". The School offers three undergraduate programs: Mathematics and Applied Mathematics, Information and Computational Science, and Applied Statistics. It also holds a first-level doctoral program in Mathematics and a first-level master's program in Statistics, along with a postdoctoral research station in Mathematics. Currently, the School has over 400 undergraduate students and nearly 200 postgraduate and international students.

The mathematics discipline at the School is a key discipline in Jiangsu Province during both the 13th and 14th Five-Year Plan periods. In May 2023, it entered the top 1% globally in the ESI rankings. The Joint Party Branch of the Department of Mathematics and the Mathematics Experiment Center was recognized as one of the first "National Model Party Branches" in higher education institutions and one of the first "Dual-Leader" Teacher Party Branch Secretary Studios nationwide. The Information and Computational Science program is designated as a Jiangsu Provincial Characteristic Program, a Jiangsu Provincial Brand Program, a Key Program of the Ministry of Industry and Information Technology, and a National First-Class Undergraduate Program. The Applied Statistics program is recognized as a Jiangsu Provincial First-Class Undergraduate Program.

The School has a faculty and staff of 110 members, including 17 doctoral supervisors, 44 master's supervisors, 23 professors, and 38 associate professors. Its talent pool comprises one national-level leading talent, three national-level young talents, one National Model Teacher of Professional Ethics, and one expert receiving the State Council Special Government Allowance. At the provincial level, it has one Jiangsu Provincial Teaching Master, and eight talent program recipients such as Jiangsu Specially-Appointed Professors, Academic Leaders under the Jiangsu "Qinglan Project", Outstanding Young Backbone Teachers, and Provincial Outstanding Young Scholars. The School has appointed world-renowned scholars to its honorary and visiting positions, including TIAN Gang (Academician of the Chinese Academy of Sciences; Fellow of the American Academy of Arts and Sciences; Professor, Princeton University; Professor, Peking

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University) as Honorary Professor; LIN Fanghua (Fellow of the American Academy of Arts and Sciences; Professor, New York University) as Honorary Professor; RUAN Zhongjin (Professor, University of Illinois Urbana-Champaign) as Adjunct Doctoral Supervisor; and CAO Xiaodong (Professor, Cornell University) as Guest Professor.

For years, the faculty of the mathematics discipline has carried forward the fine tradition of the Harbin Military Institute of Engineering, which commits itself to laying a solid foundation for students and cultivating pillars of the nation. The School has since embarked on a distinctive development path that integrates talent cultivation in mathematics with characteristic scientific research blending science and engineering. Currently, the School possesses one national-level teaching team and one outstanding teaching team under the Jiangsu "Qinglan Project". It has been awarded two National Teaching Achievement Awards and nine Jiangsu Higher Education Teaching Achievement Awards. The School boasts a total of seven national and provincial-level first-class and high-quality courses, including national first-class courses, Jiangsu provincial first-class undergraduate courses, online open courses, Excellence (Jingpin) courses, and outstanding courses. Faculty research efforts focus on several key areas: geometric analysis and nonlinear partial differential equations; optimization theory for intelligent systems; mathematical theories and methods for imaging, high-dimensional data, and information security; multidimensional modeling and control theory for complex large-scale systems; and statistical models and inference for data structures. In recent years, the mathematics faculty has published over 200 papers in leading international journals, including *Advances in Mathematics* and *Transactions of the American Mathematical Society*. It has secured more than 50 national-level research grants, such as key projects and general projects from the National Natural Science Foundation of China (NSFC), as well as projects under the National Key R&D Program. The faculty has also undertaken over 20 provincial/ministerial-level NSFC projects and received five scientific research awards at those levels. In the past three years, faculty members have supervised students to win more than 20 Jiangsu Provincial Graduate Innovation Program

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awards. Their students have also received three Jiangsu Outstanding Doctoral Dissertation Awards and two Jiangsu Outstanding Undergraduate Thesis (Design) Awards.

The School champions a development philosophy "grounded in mathematical research, driven by engineering challenges, and advancing through the synergistic integration of science and engineering." It prioritizes applied fundamental research, promotes the fusion of scientific and engineering disciplines, and bolsters the convergence of national defense studies with industrialization and informatization. These initiatives have established the School as a comprehensive educational entity with well-established and distinctive academic programs, achieving balanced development in both teaching and research. The entire faculty, staff, and student body of the School of Mathematics and Statistics will steadfastly seize historic opportunities, emancipating the mind, consolidate foundational strengths, leverage inherent advantages, and pursue transformative breakthroughs. By following this unique development path, we are striving confidently toward our goal of becoming a first-class institution.

