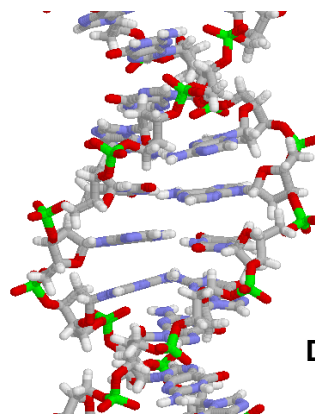


Biophysics Minor Programme

Biophysics is an interdisciplinary science that applies the theories and methods of physical sciences, especially those of physics, to the study of biological systems. Biophysicists have contributed significantly in the understanding of life sciences. For examples, the discovery of the structure of the DNA double helix was attributed to Professor Francis Crick (co-winner of the Nobel Prize in Medicine, 1962) who was a physicist by training. More recently, physicist Sir Peter Mansfield won the Nobel Prize in Medicine (2003) for discoveries concerning magnetic resonance imaging.

Such studies can be divided into these different areas of interest:

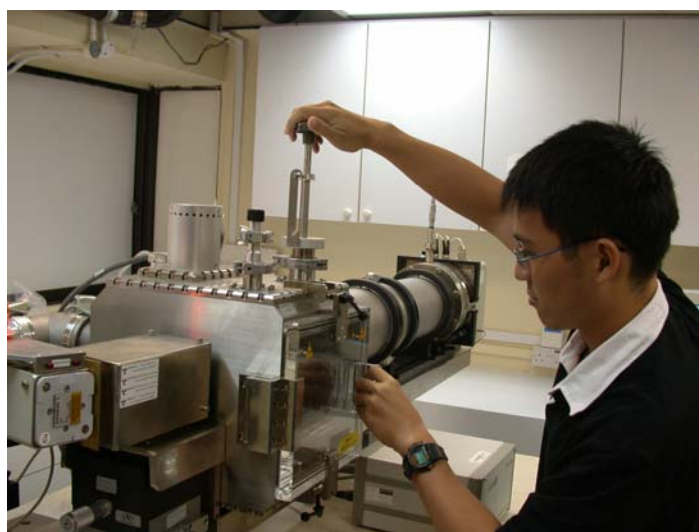
- Bioenergetics
- Biophysical Theory and Modeling
- Cell Biophysics Channels, Receptors and Transporters
- Electrophysiology
- Bio Membranes
- Nucleic Acids
- Photobiophysics
- Assemblies and folding/unfolding of proteins and other bio macromolecules
- Spectroscopy, Imaging, and Other Techniques



DNA Backbone

Objective of Minor Programme in Biophysics

The primary objective of this programme is to educate and train students with the core knowledge of physical sciences to tackle biological problems. The biophysics students will learn the fundamentals of biology and physics to prepare them for further studies at an advanced level. These students will be capable of meeting the challenge of modern-age biophysics, and will be able to carry out independent or collaborative research work. Students equipped with the Minor in Biophysics will gain an advantage in their challenging careers in research, academia and industry related to the high value-added and knowledge-intensive Life Sciences industry.



Physics Department, Blk S12, Faculty of Science
National University of Singapore
2 Science Drive 3, Singapore 117542

Telephone: (65) 6516 2604 Fax: (65) 6777 6126 Email: physec@nus.edu.sg

Biophysics Minor Programme

Biophysics Minor Programme is jointly offered by the Department of Physics and the Office of Life Sciences for students matriculated in and after AY2006/07. To be awarded a minor in Biophysics, the students are required to pass six modules (24 MCs), of which not more than two modules may be Level 1000 modules and three essential modules namely **PC2267** (Biophysics I), **PC3267** (Biophysics II), and **LSM3243** (Molecular Biophysics) must be included.

The university rule that not more than 8 MCs can be double counted for the student's major will apply to this programme. In addition, Physics major students should not read more than 12 MCs of PC modules as part of the minor requirements (likewise Life Science majors should not count more than 12 MCs of LSM modules for this minor programme). Students of ANY major may read the Biophysics Minor, including Physics and Life Sciences majors.

Level	Module Requirements (Total: 24 MCs)
1000	Module requirements (not more than two of the following modules) for students with Physics Major: LSM1101 Biochemistry of Biomolecules LSM1102 Molecular Genetics CM1101 Principles of Modern Chemistry
	Module requirements (not more than two of the following modules) for students with Life Sciences Major: PC1142 Physics II or PC1431 Physics IE PC1143 Physics II or PC1432 Physics IIE CM1101 Principles of Modern Chemistry
	Module requirements (not more than two of the following modules) for students without Physics and Life Sciences Majors: PC1142 Physics II or PC1431 Physics IE PC1143 Physics III or PC1432 Physics IIE LSM1101 Biochemistry of Biomolecules LSM1102 Molecular Genetics CM1101 Principles of Modern Chemistry
2000	PC2267 Biophysics I⁺ PC2131 Electricity & Magnetism PC2230 Thermodynamics & Statistical Physics LSM2102 Molecular Biology LSM2104 Essential Bioinformatics and Biocomputing
3000 and 4000	PC3267 Biophysics II⁺ PC4267 Biophysics III PC4268 Biophysical Instrumentation and Biomolecular Electronics LSM3243 Molecular Biophysics⁺

⁺ Essential modules