

-Mechanics (4.0 Credit, 6.0 ECTS):

This course provided a deep understanding of classical mechanics, including concepts like motion, forces, energy, and momentum, and equipped me with the ability to analyze mechanical systems.

-Theoretical Mechanics (3.0 Credit, 4.5 ECTS):

I mastered analytical mechanics frameworks, covered Lagrangian Mechanics and Hamiltonian Mechanics, which prepared me to further learn some Classical Field Theory.

-Electromagnetic (4.0 Credit, 6.0 ECTS):

This course covered the foundational principles of electromagnetism, including electric fields, magnetic fields, electromagnetic waves, related topics about optics and their applications in various physical phenomena.

-Electrodynamics (3.0 Credit, 4.5 ECTS):

I studied advanced topics in electrodynamics, starting from Maxwell's equations and their applications in real-world systems such as wave propagation and electromagnetic radiation. Special Relativity is also introduced and equipping me with the foundation of Classical Field Theory.

-Optics (3.0 Credit, 4.5 ECTS):

The course examined the behavior of light, optical systems, diffraction, interference, and polarization, and how these principles are applied in modern optical technologies.

-Technologies and Applications of Optical Fiber (2.0 Credit, 3.0 ECTS):

This course introduced me to the technology behind optical fibers, their design, and the wide range of applications in communications, medical devices, and sensing.

-Photoelectric Technology (2.5 Credit, 3.75 ECTS):

I learned about the principles and applications of photoelectric technology, including photovoltaic cells, light sensors, and the interface between light and materials.

-Thermology (2.0 Credit, 3.0 ECTS):

The course delved into the study of heat, temperature, and thermodynamic processes, focusing on responses of systems under different external conditions.

-Engineering Thermodynamics (2.0 Credit, 3.0 ECTS):

I explored various thermodynamic cycles, energy conversion, and the application of thermodynamic principles in engineering solutions, from specific engines to different types of power plants.

-Thermodynamics and Statistical Physics (3.0 Credit, 4.5 ECTS):

This course provided insights into thermodynamics and its statistical foundations, with much effort put into various ensembles and corresponding applications to systems like Fermi gas, Radiation, Bose-Einstein Condensation and so on.

-Atomic Physics (3.0 Credit, 4.5 ECTS):

I studied the structure of atoms, atomic spectra, and quantum mechanics applications to atomic systems, as well as atomic models.

-Quantum Mechanics (3.0 Credit, 4.5 ECTS):

This course gave me a solid grounding in quantum theory, including advanced topics like perturbation theory, scattering amplitude and exact solution of Hydrogen Atom.

-Solid State Physics (2.0 Credit, 3.0 ECTS):

I explored the properties of solids, including crystalline structures, basic point groups and symmetries, electron models and metal structure.

-Energy Storage Technology (2.0 Credit, 3.0 ECTS):

This course focused on the technology and materials used in energy storage systems, including batteries, supercapacitors, and fuel cells.

-Advanced Mathematics A1(1) & (2) (11.0 Credit, 16.5 ECTS):

A comprehensive study of advanced mathematical concepts such as calculus, differential equations, and complex variables, enabling me to study more advanced mathematical topics.

-Linear Algebra A2 (2.0 Credit, 3.0 ECTS):

This course deepened my understanding of advanced topics like quadric forms, similarity transformation, LU decomposition and so on.

-Physics Experiments (1) & (2) (2.0 Credit, 3.0 ECTS):

A practical course where I conducted experiments in various areas of physics, applying theoretical knowledge to real-world data and analyzing results.

-Experiments of Modern Physics (3.0 Credit, 4.5 ECTS):

I engaged with modern physics experiments, exploring topics such as quantum phenomena and particle physics through hands-on experimental work.

-Specialized Experiment of Physics (3.0 Credit, 4.5 ECTS):

This course offered in-depth experiments in specialized areas of physics, such as nanotechnology or advanced materials, to further develop my practical skills.

-Advanced Programming (2.0 Credit, 3.0 ECTS):

I enhanced my programming skills through advanced coding techniques, learning to implement algorithms and models to solve complex scientific problems using C/C++.

-Programming with MATLAB (2.0 Credit, 3.0 ECTS):

A specialized course in MATLAB, which taught me to write code for mathematical simulations, data analysis, and visualizations in a physics context.

-Mathematics Method in Physics (4.0 Credit, 6.0 ECTS):

This course focused on applying advanced mathematical methods to solve physical problems, emphasizing techniques like Fourier analysis, Laplace transformation, special function expansion with boundary condition and so on.

-Computational Physics (2.0 Credit, 3.0 ECTS):

I learned how to use Fortran to simulate physical systems like 1D non-harmonic atom chains, focusing on numerical methods for solving differential equations and optimizing models. Besides, I gained some basic knowledge of Symplectic Geometry.

-Fundamentals of Mathematical Modeling (2.0 Credit, 3.0 ECTS):

This course provided insights into creating mathematical models to solve problems using specific data analysis methods.

-Lecture on Cutting-Edge Development of New Technologies (1.0 Credit, 1.5 ECTS, ended at 2024-25 semester 1):

This course involved attending lectures on the latest technological advancements and summarizing key points. I choose some academic lectures and write some notes as homework. The lectures covered modern topics from black hole thermodynamics, scattering amplitude method to dictionaries in gauge/gravity duality.

-Comprehensive Practice of Physics (2.0 Credit, 3.0 ECTS, ended at 2024-25 semester 1):

I designed and constructed an experimental apparatus, which is a model of Stirling motor, recording the results in a video report, which helped me apply theoretical knowledge in practical settings. I used some apparatus and recorded a video as homework.

-Production Practice (1.0 Credit, 1.5 ECTS, ended at 2024-25 semester 1):

This practical course involved visits to local factories where I analyzed production processes and wrote a summary based on my observations, helping me understand industry standards. I went to some local factories and wrote a summary as homework.

-Principles and Practice of Scientific Computing (1.0 Credit, 1.5 ECTS):

The course involved recording a simple video demonstration using GeoGebra, and I decided to build a system which visualizes the orbit of stable Lagrangian points(L4, L5).

-Curriculum Design of Electronic Circuit (1.0 Credit, 1.5 ECTS):

I learned to design electronic circuits, focusing on both theoretical principles and practical aspects such as components, wiring, and simulation.

-Probability Theory A2 (2.0 Credit, 3.0 ECTS):

This course provided a rigorous understanding of probability theory, including distributions, expectation values, and statistical inference, crucial for experimental physics.

-Physics of Semiconductor Devices (2.5 Credit, 3.75 ECTS):

I studied the properties and behavior of semiconductors and their applications in modern electronic devices like transistors, diodes, and most importantly the solar cells.

-Scientific Research Practice (1.0 Credit, 1.5 ECTS):

This course emphasized hands-on experience in conducting scientific research, from hypothesis formulation to data analysis and presentation.

-Practice of Innovation and Entrepreneurship (1.0 Credit, 1.5 ECTS):

I explored innovation processes and entrepreneurial strategies, wrote a report about learning how to turn scientific research into commercial applications and ventures.

-Lectures on Frontiers of Modern Physics (1.0 Credit, 1.5 ECTS):

This course involved attending lectures on the most recent developments in physics, helping me stay informed about emerging research trends, the topics vary from complex systems to modern condense matter physics and all lectures were given by professors in Huaqiao University.