

Department of Astronomy and Space Science

Tel : +82 31 201 2440 Fax : +82 31 204 8122 E-mail : space@khu.ac.kr URL : http://space.khu.ac.kr

What is Astronomy and Space Science?

In the 21st century, our knowledge of the universe will be further expanded by space observations, and diverse space technologies will become an essential part of our daily life. Manufacture and operation of spacecrafts and payloads, analysis of data obtained by in situ measurements and remote observations, and developing theories with analytic and computational tools are tasks of space science and astronomy. Astronomy as an academic discipline of understanding the universe is no more a heavenly or speculative science. On one hand, it touches the most fundamental philosophical questions, such as how our world was created and how we have come to exist, and on the other hand, it provides the most practical information, such as the safety of astronauts and spacecrafts. Application of space science is not limited to satellite communication and astronomical observations as in the past. The GPS is already embedded in our daily life, and remote sensing can even provide information on the interior of the earth, as well as its atmosphere and surface. Our Department trains students to take part in all such endeavors into space and pioneer the final frontier of mankind: the universe.

Astronomy and Space Science at Kyung Hee University

The Department of Astronomy & Space Science was established in 1985. It is the only university department that provides a balanced education in both astronomy and space science in Korea. The department boasts the largest optical telescope operated by a university in the country. The research area of our Department already encompasses astrodynamics, stellar and galactic astronomy, extragalaxies and cosmology, radio astronomy, infrared astronomy, planetary astrophysics, solar physics, magnetospheric physics and heliospheric physics. Now we are expanding into manufacture and operation of satellites and payloads, in situ space observations, and development of satellite watch systems. Although our history is not very long, our alumni are now playing key roles in space research in Korea. Owing to the ongoing expansion of our Department, our graduates are also expected to lead space industries in Korea in the near future.

Degree Requirements

To receive the Bachelor of Science degree in Astronomy and Space Science, a student must:

- acquire a minimum of 130 credit units
- satisfy the general requirements set by the University for academic degrees
- complete 15 units of compulsory courses in Astronomy and Space Science
- complete 39 units of electives in Astronomy and Space Science and related fields
- complete 32 units (maximum 50 units) among general culture courses and humanities/social science electives
- attain a designated minimum score in an English proficiency test equivalent to 700 points in TOEIC.

Courses

Year 1

Calculus 1 & 2, Physics 1 & 2, Linear Algebra, Physics Experiment 1 & 2, Basic Astronomy

Year 2

Introduction to Astronomy & Lab 1, Introduction to Astronomy & Lab 2, Scientific Programming with Fortran and IDL,

Introduction to Space Electronics & Lab, Advanced Mathematics I, Advanced Mathematics II, Solar System Exploration, Numerical Computation for Space Sciences, Space Observation, Introductory Space Optics & Lab, Celestial Mechanics, Introduction to Space Electromagnetism

Year 3

Astrophysics I, Astrophysics II, Solar-Terrestrial Physics I, Solar-Terrestrial Physics II, Space Electronics Application and Experiment, Satellite & Propulsion Device, Design and Experiment of Space Opto-mechanics, Astronomical Image Processing, Modern Cosmology, Space Flight Dynamics, Stellar Astronomy & Lab

Year 4

Astronomical Instruments, Introduction to Physics of Fluids and Plasmas, Radio Astronomy and Astrochemistry, Astrophysical Thermodynamics, Rocket Systems, Space Payloads & Lab, Remote Sensing, Numerical Simulations, Internship in Astronomy & Space Science

Careers and Graduate Destinations

Graduates from our Department are working as professors at universities, as researchers at national research institutes (e.g. Korea Astronomy and Space Science Institute, Korea Aerospace Research Institute, etc.) and as research and administrative staff in diverse industries (e.g. Korea Aerospace Industries, Korea Telecom, Korean Air, Samsung Data Systems, GEO Tech., IST Korea, etc.).

Faculty

Gwangson Choe, Ph.D. University of Alaska Fairbanks, 1995, Professor, Solar and Heliospheric Physics, Plasma Physics, Numerical Simulation, gchoe@khu.ac.kr

Min-Hwan Jang, Ph.D. Georgia State University, 1995, Professor, Space Instrumentation, Galactic Astronomy, Variable Stars, Solar Physics, mjang@khu.ac.kr

Ho Jin, Ph.D. Kyung Hee University, 2004, Professor, Variable stars, Astronomy & Space Instrument, Magnetometer, Lunar exploration, benho@khu.ac.kr

Kap-Sung Kim, Ph.D. Kyoto University, 1988, Professor, Solar and Heliospheric Physics, Radiative Transfer, Celestial Mechanics, kskim@khu.ac.kr

Khan-Hyuk Kim, Ph.D. Nagoya University, 1999, Professor, Magnetospheric Physics, Ionospheric Physics, Satellite Data Processing, khan@khu.ac.kr

Sang-Joon Kim, Ph.D. State University of New York, Stony Brook, 1982, Professor, Solar System Astronomy, Astronomical Spectroscopy, IR Observation, sjkim1@khu.ac.kr

Sungsoo S. Kim, Ph.D. University of California, Los Angeles, 2000, Professor, Stellar and Galactic Dynamics, Astrophysics, Lunar and planetary science, sungsoo.kim@khu.ac.kr

Jeong-Eun Lee, Ph.D. University of Texas, Austin, 2005, Associate Professor, Star Formation, Formation of the Solar System, Astrochemistry, Interstellar Medium, jeongeun.lee@khu.ac.kr

Dong-Hun Lee, Ph.D. University of Minnesota, 1990, Professor, Space Physics, Plasma Physics Theory, Numerical Simulation, dhlee@khu.ac.kr

En-Sang Lee, Ph.D. Korea Advanced Institute of Science and Technology, 2001, Assistant Professor, Space Physics, Plasma Physics, Numerical Simulation, Satellite Data Analysis, eslee@khu.ac.kr

Tetsuya Magara, Ph.D. Kyoto University, 1998, Professor, Solar physics, Magnetohydrodynamic Simulation, Plasma Astrophysics, magara@khu.ac.kr

Yong-Jae Moon, Ph.D. Seoul National University, 1999, Professor, Solar Physics, Space Weather, Data Analysis, moonyj@khu.ac.kr

Soojong Pak, Ph.D. University of Texas, Austin, 1997, Professor, Astronomical Instrumentation, IR Astronomy, Star Formation, Galaxy Evolution, soojong@khu.ac.kr

Jong-Ho Seon, Ph.D. University of Iowa, Iowa City, 1996, Professor, Experimental Space Plasma Physics, Plasma Propulsion, Space Mission Management, jhseon@khu.ac.kr

Sami K. Solanki, Ph.D. ETH (Swiss Federal Institute of Technology) Zurich, 1987, Distinguished Professor, Solar and Heliospheric Physics, Stellar Astrophysics, Gravitation, Radiative Transfer, Atomic and Molecular Physics, Optical Instruments, solanki@mps.mpg.de

Peter H. Yoon, Ph.D. Massachusetts Institute of Technology, 1987, Professor, Plasma Kinetic Theory, Magnetospheric Physics, Solar and Heliopsheric Physics, yoonp@umd.edu

Yun-Young Choi, Ph D. Ewha W. University, Seoul, 2003, Assistant Professor, Observational cosmology, galaxy evolution, astronomical big data analysis, yy.choi@khu.ac.kr