
Space....
Time...
Wisdom...

A Journey through Time

The Faculty of Applied Sciences of the University of Sri Jayewardenepura was established almost fifty years ago and enjoys the distinction of being the second oldest Faculty of the University.

Even though it was first established as a Faculty of Science, it pursued a path somewhat unconventional to such a faculty implementing many new and revolutionary ideas.

Replacing traditional Applied Mathematics with Statistics, introducing courses covering applied aspects of Science such as Fisheries Biology, Forestry, Food Science, Polymer Science, Electronics and Geophysics into its curriculum and opening the gates of Physics and Mathematics Departments to Bioscience students were some of the innovations implemented during its formative stages.

Most of these innovations have now been emulated by many well established faculties of science of the country providing a living testimony to the prudence of the stand taken by us almost half a century ago. Our attempts to produce a Faculty of Science suitable to a developing country such as Sri Lanka received the official recognition when the Faculty of Science of the University of Sri Jayewardenepura (then Vidyodaya Campus of the University of Sri Lanka) was converted to the first Faculty of Applied Sciences of the country in 1973 by the University of Ceylon Act No. 1 of 1972.

Today almost after fifty years of its establishment the faculty has grown and blossomed into the flagship Faculty of Applied Sciences of our country with nine academic departments and a student population exceeding 1200. Further, it is blessed with a conglomeration of highly qualified academic staff

Comprising of nearly a hundred members, some of whom have won recognition as leading scientists in the country in their specialized areas and have received many accolades from the state and other prestigious scientific bodies. Over the years the faculty has developed a research intensive culture and a strong flair for postgraduate education.

At present the faculty conducts ten Msc courses and several MPhil and PhD programmes in various specialized disciplines.

All the postgraduate activities are administered by the newly established Faculty of Graduate Studies of the University.

In addition to the academic activities conducted within the university premises we provide an opportunity for students to expose themselves to the industrial and research environment of the country through industrial placements, work shadowing, field trips etc. This has paid good dividends in terms of students getting familiarized with the work culture, ethics and expectations and its vicissitudes. The faculty is proud that many of its past students are holding important positions in academia, government institutions and in the industry contributing immensely towards the development of the country.

We are very much hopeful that the studentswho entered the Faculty of Applied Sciences this year too would excel in their academic and other pursuits and make their contribution to society as proud graduates of the University of Sri Jayewardenepura.



Professor Sudantha Liyanage
Dean - Faculty of Applied Sciences

You are now a privileged student of the prestigious Faculty of Applied Sciences in this esteemed university. As your Dean, it gives me great pleasure to welcome you at this important juncture of your lives, where you take a decisive step towards your future.

The Faculty of Applied Sciences has indeed come a long way since its inception in the early 60s. The greatest strength we have is our integrated curriculum. The applicability and practicality of our courses provide the students with the necessary skills to face their future with confidence. We, in the faculty, believe in application. We choose to differ from the conventional methods and that has become our greatest strength.

In addition, the quality of our teaching is of the highest calibre as more than 75% of the staff are Ph.D. and Postgraduate Degree holders, from universities around the world and the expertise, skill and knowledge they offer are truly note worthy.

As the first Alumni Dean of the faculty, I take my task seriously and my ultimate goal is to make our faculty the best Faculty of Science in the Sri Lankan university system.

To achieve this goal, we have structured a long term plan spanning over the next ten years during which we will accomplish our target. Already the student intake has increased to over 500 from the 2010/2011 academic year, the infrastructure of the faculty has been upgraded with the renovation of all lecture halls and departmental buildings and the opening of 4 - floors a new 7-floor faculty complex worth 360 million rupees. We have also introduced new subjects to the faculty such as Biology Information Communication Technology; Sports Science and Management.

It is common knowledge that “The foundation of every state is the education of its youth". The Faculty of Applied Sciences strives to accomplish the successful education of youth. We, as facilitators, offer you the opportunity to achieve your goals. Make the best of the resources made available to you. On behalf of the faculty, I welcome you all. I wish you success.



Prof. Sampath Amaratunge
Vice Chancellor

It is with great pleasure that I write this message for the Academic Prospectus of the Faculty of Applied Sciences of our university. I am well aware that the Faculty of Applied Sciences of the University of Sri Jayewardenepura is a set of excellence in the field of science, and caters to the needs of the country by producing scientists who collectively work for the betterment of its countrymen. The university is proud of the high class research carried out at the Faculty of Applied Sciences as well as of its academic staff members among whom are world class scientists.

It is noteworthy that the Faculty of Applied Sciences has introduced new degree programmes to meet the requirements of the country, while maintaining the high standards of the existing degree programmes. The academic and non-academic staff members, as well as the students, are seen to work collectively to strive towards the many achievements of the faculty. Therefore, as the Vice-Chancellor of the university I am extremely proud of the performance of the Faculty of Applied Sciences.

We have witnessed immense development of the infrastructure facilities of the faculty to provide an atmosphere conducive to learning for its students. The faculty boasts of many initiatives to make it one of the best seats of learning science in the country.

I wish all the new entrants the very best of luck in their academic and extra- curricular activities during their tenure in this university and hope that all of them would be able to become first class scientists who will be a great strength to our mother country.



The Faculty of Applied Sciences of the University of Sri Jayewardenepura is committed to excellence in teaching, research and in enriching its students in many facets of life.

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Undergraduate Courses Degree Programmes



AMT

Applied Mathematics

Offered by the Department of Mathematics

"Applied Mathematics is a blend of Mathematical Sciences and Specialized knowledge which describes professional speciality for practical problems"

B. Sc. (General) Degree with Applied Mathematics
Course Code: AMT

Duration: Three years

Subject Combinations: Refer pages 247-248

For whom?

Students from physical science stream who have a potential to deal with applications of mathematics with sharp logical and critical thinking and willing to undertake challenges.

Career opportunities

With the advancement of technology and development of various industries, a tendency to apply improved mathematical tools and techniques to gain significant results has cropped up. Moreover, new application areas are being discovered day by day which require the subject oriented knowledge to handle the application procedures. Thus, at present professionals with applied mathematical background and skills are at a high demand worldwide, especially in the fields of engineering, technical and industrial sectors and also in research institutes.



Course overview

The Applied Mathematics course is a combination of mathematical science, applications and knowledge. An opportunity to study Applied Mathematics will develop a professional specialty in an undergraduate to work on real world problems by formulating and studying mathematical models. It will pave the path to develop a successful career, well-adapted to the present industrialized world and also will give an excellent opportunity for individuals to serve the society using their knowledge and skills. Mathematics improves a person's logical thinking while skills in Applied Mathematics will enable him/her to face a practical situation successfully.

Course structure

Applied Mathematics is offered as one of the three subjects for B. Sc. (General) degree in a permitted subject combination for physical science students. It consists of compulsory and optional course units arranged to provide the required knowledge in main areas of Applied Mathematics such as Mechanics, Mathematical modeling, Dynamics, Numerical methods etc. The success of modern mathematical concepts, techniques and software had given rise to the involvement of knowledge in computational mathematics in practical applications of mathematics. The department offers a practical component along with the Applied Mathematics courses together with an access to a well equipped computer laboratory.

B. Sc. (Special) Degree in Applied Mathematics

Duration: 4 years

For whom?

Focused on students who are willing to develop an expertise skill in handling Applied Mathematical knowledge to solve practical problems in real world scenarios.

Career opportunities

A special degree in Applied Mathematics enables graduates to find employment as professionals in any industry, science and technological institutes, academic and research institutes, engineering field or any other field which requires the use of a practical application of mathematical techniques.

Course overview

The special degree is aimed at offering undergraduates with thorough theoretical and practical knowledge relevant to the subject. Students will not only learn but also feel mathematics through the exposure that they will receive in following a special degree. Special degree students are also provided with the benefit of experiencing practical sessions along with some course units in a well equipped computer laboratory. Furthermore, some course units are designed to improve the presentation skills of students which will be a valuable experience for a successful future career. The department also offers an industrial training for a fixed duration outside the academia enabling students to excel their ability with the learned skills. A final project also to be conducted under the supervision of the lecturers in the department.

Selection

Promising students are selected for the B. Sc (Special) Degree in Applied Mathematics at the end of the second year based on their performance in Applied Mathematics courses with an acceptable level of performance on the other two subjects.

For further information please contact:

Mr. K.K.N.A.S. Kumara
Head/ Department of Mathematics
E-*mail: sarath@sjp.ac.lk*

B. Sc. (General) Degree Course Units

Each student should take course units having minimum cumulative credit value of 27.0

FIRST YEAR

Semester I

AMT 111 2.0	Analytical Geometry	c
AMT 112 2.0	Mathematical Statistics I	c
AMT 113 1.0	Financial Mathematics	c

Semester II

AMT 121 2.0	Classical Mechanics	c
AMT 122 2.0	Computational Mathematics	c
AMT 123 1.0	Mathematical Modeling I	c

SECOND YEAR

Semester I

AMT 211 2.0	Design and Analysis of Algorithms	c
AMT 212 2.0	Mathematical Statistics II	c
AMT 213 1.0	Introduction to Geometrical Transformations	c

Semester II

AMT 221 2.0	Mathematical Computing	c
AMT 222 2.0	Fluid Dynamics	c
AMT 223 1.0	Discrete Mathematics	c

THIRD YEAR

Semester I

AMT 311 2.0	Applicable Mathematics	o
AMT 312 2.0	Actuarial Science	o
AMT 313 1.0	Computational Discrete Mathematics	o
AMT 314 1.0	Teaching and Learning Methodologies in Mathematics	o
AMT 317 1.0	Fuzzy Logic and Wavelet Analysis	o

Course Type

-c-
Core

-o-
optional for those doing Mathematics

Course Type

-c-
core

-o-
optional for
those doing
Mathematics

Semester II

AMT 321 2.0	Mathematical Modeling II	o
AMT 322 2.0	Quantum Mechanics	o
AMT 323 1.0	Operational Research I	o
AMT 324 2.0	Mathematics Teaching for Active Learning	o
AMT 325 2.0	Regression Analysis	o

Special Degree Course Units

PART I

Semester I

AMT 311 2.0	Applicable Mathematics	c
AMT 312 2.0	Actuarial Science	c
AMT 313 1.0	Computational Discrete Mathematics	c
AMT 351 2.0	Cryptography	c
AMT 352 2.0	Non Linear Differential Equations and Dynamical Systems	c
AMT 353 2.0	Computer Algebra	c
AMT 354 2.0	Accounting and Finance	c
AMT 355 2.0	Seminar / Report Writing	c

Semester II

AMT 321 2.0	Mathematical Modeling II	c
AMT 322 2.0	Quantum Mechanics	c
AMT 323 1.0	Operational Research I	c
AMT 325 2.0	Regression Analysis	o
AMT 376 2.0	Rotational Systems	c
AMT 377 2.0	Computational Statistics	c
AMT 378 2.0	Data Analysis and Preparation of reports	c
AMT 379 2.0	Object Oriented Programming	c*
AMT 390 2.0	Statistical Quality Control	c

PART II

Semester I

AMT 451 3.0	Advanced Numerical Techniques	c
AMT 452 3.0	Optimization	c
AMT 453 2.0	Applied Mathematical Techniques	c
AMT 454 2.0	Graph Theory with Applications	c
AMT 455 2.0	Operational Research II	c
AMT 456 2.0	Industrial Management	c

Semester II

AMT 476 8.0	Industrial Internship Program	c
AMT 499 8.0	Project	c

Course Type

-c-
core

-o-
Optional for those doing Mathematics

- c*-
Those who are doing Computer Science as a subject are not allowed to do this course unit.



ARM

Aquatic Resources Management

Offered by the Department of Zoology

"Aquatic Resource Management is a multi-disciplinary field of study pertaining To the planning, development and sustainable utilization of aquatic resources"

B.Sc. (General) Degree Programme with Aquatic Resources Management
Course code: ARM
Duration: 3 Years
Subject combinations: Refer pages 247-248

For whom?

For students from biological sciences streams who are interested in pursuing careers in Aquatic Resources Management.

Career opportunities

Sri Lanka is an island nation with a rich endemic biodiversity within aquatic environments and abundant resources in fisheries. In spite of the advent of the 21st century, the wealth of our aquatic resources is relatively unknown compared to the resources available within terrestrial environments. In order to maximize the potential of our island nation in aquatic Aquatic resources is relatively unknown compared to the resources available within terrestrial environments. In order to maximize the potential of our island nation in aquatic resources, it is important that a pool of talent is developed who are equipped with specialist and applied knowledge in Aquatic Resources Management. Therefore, by the provision of



broad in its spectrum of employment opportunities with prospects of joining government ministries, private organizations, fisheries based industries, consultancy firms engaging in aquatic resources management, Ornamental fish based businesses with an export orientation as well as providing opportunity for entrepreneurship.

Course overview

The subject, Aquatic Resources Management, aims to provide the all-round development of a student with specialist knowledge of aquatic environments namely fresh, brackish and marine ecosystems. The impartation of specialist knowledge in aquatic ecosystems is covered by a diverse range of topics, including Aquatic Diversity, Planning, Conservation, and Sustainable Utilization of Aquatic Resources, Aquaculture and Fisheries, applications in GIS and Aquatic Modeling.

outside of the key subject areas, students are equipped with communication and problem solving skills, team work and perseverance and leadership qualities to ensure their career readiness to secure a future within the 21st century workforce.

Course structure

Aquatic Resources Management will contribute one third of the B.Sc. (General) degree program within the framework of a permitted subject combination. Students are required to take course units equaling or exceeding a cumulative credit value of 27.0 points. Course units are classified as compulsory, core and optional course units and the course units are designed to provide the student with specialist knowledge and skills required in contemporary Aquatic Resources Management.

B.Sc. (Special) Degree Programme in Aquatic Resources Management
Duration: 4 Years

Career opportunities

The career opportunities available for graduates of the Special Degree Program in Aquatic Resources Management, will be centered on academia, government ministries and agencies, consultancy firms and as well as practicing their trade as researchers in a diverse range of hierarchical positions undertaking in depth studies on contemporary research topics with the objectives of bridging gaps in knowledge and deciphering cryptic areas in Aquatic Resources Management.

Course overview

The B.Sc. (Special) Degree in Aquatic Resources Management aims to prepare a new breed of experts with marketable and transferable skills in contemporary applied Aquatic Resources Management. The programme imparts a higher level of specialist knowledge and practical training and is ideally suited for student with aspirations for graduate studies and further research training.

The core strengths of the Special Degree Program are the coverage of specialist knowledge, both in-depth and with a wide spectrum of horizontal topics, the provision of a higher degree of practical skills which are transferable beyond the learning environment, higher levels of analytical and communication skills and in whole, a well rounded education program suited for research endeavors or higher studies under specialist topics. The final year research project is of core significance to the Special Degree Program which advances a student's capacity to undertake research endeavors, develops core analytical skills, expand communication, networking and language skills and to pursue careers in academia.

Selection

Selection of students for the Special Degree Programme is based on the student's performance in the first two years of the academic program and the intake is based on student number and staff availability.

Instruction and assessment

The impartation of education to students enrolled in General and Special Degree programmes, will be conducted by an eminent group of lecturers, with proven track records in academia and research. The teaching environment within the Department of Zoology consists of lectures, laboratory practicals, field studies and project assignments which ensures the all-round development of students in specialist knowledge and practical training. The modes of assessment include end-of-semester examinations, practical tests, presentations and reports.

For further information please contact:

Prof. M.M. Pathmalal,
Head/Department of Zoology
E mail: pathmalal@sjp.ac.lk

B. Sc. General Degree course units

Each student should take course units having minimum cumulative credit value of 27.0

FIRST YEAR

Semester I

ARM 101 1.0	Basic Limnology	c
ARM 102 1.0	Oceanography	c
ARM 103 1.0	Aquatic Microbiology and Water Quality	c
ARM 104 1.0	Basic Mathematics (Based on MAT 104 1.0)	c,*
ARM 105 1.0	Ichthyology	c
ARM 106 1.0	Laboratory and Field Work	a

Semester II

ARM 107 1.0	Ecology of Plankton and Benthos	c
ARM 108 1.0	Aquatic Vegetation	c
ARM 109 1.0	Aquatic Invertebrates	c
ARM 110 1.0	Water Chemistry	c
ARM 111 1.0	Laboratory and Field Work	a
ARM 112 1.0	Water Safety and Basic Lifesaving Skills	o,*

SECOND YEAR

Semester I

ARM 201 2.0	Principles in Aquaculture and Aquaculture Engineering	c
ARM 202 2.0	Marine Fisheries Management	c
ARM 203 1.0	Laboratory and Field Work	a
ARM 204 1.0	Biometrics	c,*

Semester II

ARM 205 2.0	Culture Methods of Finfish and Shellfish	c
ARM 206 1.0	Inland Fisheries	c
ARM 207 1.0	Fish Genetics	c
ARM 208 1.0	Laboratory and Field Work	a

Course Type

-c-
core

-o-
optional for those doing Aquatic Science

-a-
compulsory

-*-
Examination grade is not counted for GPA.

Course Type

-c- core

-o- optional for those doing Aquatic Science

-a- Compulsory

THIRD YEAR

Semester I

ARM 301 2.0	Surface and Ground Water Ecology	o
ARM 302 2.0	Fundamentals of GIS	o
ARM 303 1.0	Wetland Management	o
ARM 305 1.0	Ornamental Fish Culture	o
ARM 306 1.0	Water Pollution and Legislations in Water Resources Management	o
ARM 307 1.0	Laboratory and Field Work	a
ARM 308 2.0	Aquatic Toxicology	o

Semester II

ARM 304 2.0	Nutrition (Based on ZOO 327 2.0)	o
ARM 309 2.0	Marine and Coastal Ecology	o
ARM 310 1.0	Environmental Physiology (Based on ZOO 332 1.0)	o
ARM 311 1.0	Integrated Watershed Management	o
ARM 312 1.0	Aquatic Vertebrates Conservation	o
ARM 313 2.0	Industrial Training	o
ARM 314 1.0	Laboratory and Field Work	a

BSc (Special Degree) Aquatic Resources Management Course units

Part I

Semester I

ARM 301 2.0	Surface and Ground Water Ecology	c
ARM 302 2.0	Fundamentals of GIS	c
ARM 303 1.0	Wetland Management	c
ARM 305 1.0	Ornamental Fish Culture	c
ARM 306 1.0	Water Pollution and Legislations in Water Resources Management	c
ARM 307 1.0	Laboratory and Field Work I	a
ARM 308 2.0	Aquatic Toxicology	c
ARM 315 1.0	Coastal Zone Management	c
ARM 316 2.0	Biometrics II (Based on ZOO 348 2.0)	c
ARM 317 1.0	EIA Methodologies	c
ARM 318 1.0	Laboratory and Field Work II	a

Semester II

ARM 304 2.0	Nutrition (Based on ZOO 327 2.0)	c
ARM 309 2.0	Marine and Coastal Ecology	c
ARM 310 1.0	Ecophysiology (Based on ZOO 332 1.0)	c
ARM 311 1.0	Integrated Watershed Management	c
ARM 312 1.0	Aquatic Vertebrates Conservation	c
ARM 313 2.0	Industrial Training	c
ARM 314 1.0	Laboratory and Field Work I	a
ARM 319 2.0	Research Methodology	c
ARM 320 2.0	Microbial Ecology	c
ARM 321 1.0	Laboratory and Field Work II	a

Aquatic Resources Management Special Degree Part II Courses

Semester I

ARM 401 2.0	Advanced Limnology	c
ARM 402 2.0	Pond and Hatchery Management Practices in Aquaculture	c
ARM 403 2.0	Marine Biotechnology	c
ARM 404 1.0	Fish Post-harvest Technology	c
ARM 405 1.0	Aquatic Biomonitoring	c
ARM 406 1.0	Review of Literature	c
ARM 407 1.0	Legislations in Fisheries Management	c

Semester II

ARM 408 8.0	Research Project (Semester I & II)	c
ARM 409 5.0	Seminar I & II – Special Topics and Current Topics in Aquatic Resources Management (Semester I & II)	c
ARM 410 2.0	Fish Population Dynamics	c
ARM 411 2.0	Diseases of Cultured Fish and Shrimp Species	c
ARM 412 1.0	Soil and Geology in Aquatic Systems	c
ARM 413 2.0	Aquatic Wildlife Conservation	o
ARM 414 2.0	Fisheries Economics and Marketing	o
ARM 415 2.0	Marine Resources Management	o

Course Type

-c-
core

-o-
optional for those doing Aquatic Science

-a-
compulsory

BIO

Biology



Offered jointly by the Departments of Botany and Zoology

"Biology is a fundamental and applied science which is centered on the structure, function, interactions, evolution and taxonomy of biological organisms"

B.Sc. (General) Degree Programme with Biology

Course code: BIO - Duration: 3 Years

Subject combinations: Refer pages 247-248

For whom?

For students from biological sciences streams who are interested in pursuing careers in fundamental biology.

Career opportunities

Sri Lanka boasts a rich endemic biodiversity and reasonable diversity in ecosystems, within which there is a wealth of fauna and flora and bioactive compounds, which serve as invaluable remedies for a host of infectious and non-communicable diseases. In order to harness the potential of our island nation in biodiversity and biological resources for conservation, eco-tourism and bio-prospecting endeavors as well as for the appreciation of biology, it is important that a pool of talent is developed who are equipped with specialist and applied knowledge in fundamental biology. Therefore, by the provision of skilled graduates in contemporary Applied Biology, the Departments of Botany and Zoology, contribute towards national development through its



alumni. The scope in Biology is reasonably broad in its spectrum of employment opportunities with prospects of joining government ministries, private organizations, eco-tourism ventures, conservation organizations, ecological establishments, museums, universities and secondary schools, as well as providing opportunity for entrepreneurship.

Course overview

The specialist subject, Biology, aims to instill in students, an appreciation for plant and animal sciences, especially in relation to the acquisition, integration and application of specialist knowledge in contemporary biology, in order to ensure the holistic development of the undergraduate community. The development of a student's appreciation of fundamental biology is molded through the impartation of relevant and timely topics in contemporary applied biology, including, Genetics and Molecular Biology, Insect Pest Management, Plant Propagation and Horticulture, Human Nutrition, Natural Resources and their Management, Ecology and Biological Statistics.

Outside of the key subject areas, students are equipped with communication and problem solving skills, team work and perseverance and leadership qualities to ensure their career readiness to secure a future within the 21st century workforce.

Course structure

Biology will contribute one third of the B.Sc. (General) degree program within the framework of a permitted subject combination. Students are required to take course units equaling or exceeding a cumulative credit value of 27.0 points. Course units are classified as compulsory, core and optional course units and the course units are designed to provide the student with specialist knowledge and skills required in contemporary Biology.

B.Sc. (Special) Degree Programme in Biology
Duration: 4 years

Career opportunities

The career opportunities available for graduates of the Special Degree Program in Biology will be centered on academia, consultancies at government and non-government agencies, and as researchers in a diverse range of positions.

Course overview

The B.Sc. (Special) Degree in Biology aims to provide a group of experts with required skills in applied Biology. The program imparts a higher level of specialist knowledge and practical training and is ideally suited for students with aspiration for graduate studies and further research training.

The core strengths of the Special Degree Program are coverage of specialist knowledge, the provision of a higher degree of practical skills which are transferable beyond the learning environment, higher levels of analytical and communication skills and in whole, a well rounded education program suited for research endeavors or higher studies under specialist topics. The final year research projects is of major significance to the Special Degree Program because it advances a student's capacity to undertake research endeavors, develops core analytical skills and expands communication, networking and language skills.

Selection

Selection of students for the Special Degree Program is based on the student's performance in the first two years of the academic program.

Instruction and assessment

The impartation of education to students in General and Special Degree programs will be conducted by an eminent group of lecturers, with proven track records in academia and research. The teaching environment within the Departments of Botany and Zoology consists of lectures, laboratory practicals, field studies and project assignments which ensure all-round development of students in specialist knowledge and practical training. The modes of assessment include end-of-semester examinations, practical tests, presentations and reports.

For further information please contact:

Prof. M.M. Pathmalal
Head/Department of Zoology
E mail: pathmalal@sjp.ac.lk

Dr. P.N. Dasanayake
Head/Department of Botany
E mail: nilanthiedas@sjp.ac.lk

B.Sc. (General) Degree Course Units

FIRST YEAR

Semester 1

BIO 101 1.0	Biology of the Cell	c
BIO 106 1.0	Plant Diversity	c
BIO 107 1.0	Animal Diversity (Based on ZOO 118 1.0)	c
BIO 103 1.0	Evolution (Based on ZOO 126 1.0)	c
BIO 121 1.0	Laboratory and Field Work	a

Semester II

BIO 104 2.0	Plant Form and Function	c
BIO 105 2.0	Animal Form and Function	c
BIO 122 1.0	Laboratory and Field work	a

SECOND YEAR

Semester I

BIO 201 1.0	Parasitology (Based on ZOO 219 1.0)	c
BIO 202 2.0	Microbiology	c
BIO 203 1.0	Biostatistics (Based on ZOO 215 1.0)	c
BIO 221 1.0	Laboratory and Field Work	a

Semester II

BIO 207 1.0	Genetics	c
BIO 205 2.0	Ecology	c
BIO 206 1.0	Biodiversity and Conservation (Based on ZOO 224 1.0)	c
BIO 222 1.0	Laboratory and Field Work	a

THIRD YEAR

Semester I

BIO 330 1.0	Molecular Biology	c
BIO 302 1.0	Fundamentals of Insect Pest Management (Based on ZOO 338 1.0)	o
BIO 331 1.0	Fundamentals of Environmental Sciences	o
BIO 315 1.0	Horticulture and Landscaping	o
BIO 307 1.0	Foundation of Education and Teaching Methodologies	s
BIO 309 1.0	Plant Pathology I	o
BIO 332 1.0	Plant Pathology II	o
BIO 306 1.0	Guidance, Counseling and Education Psychology	s
BIO 321 1.0	Laboratory and Field Work	a

Course Type

-c-
core

-o-
optional for those doing Aquatic Science

-a-
compulsory

-s-
optional for all students in the faculty

Course Type

-c-
core

-o-
optional for those doing Aquatic Science

-a-
compulsory

-s-
optional for all students in the faculty

Semester II

BIO 304 1.0	Aquaculture	o
BIO 308 2.0	Nutrition (Based on ZOO 327 2.0)	o
BIO 333 1.0	Plant Physiology	o
BIO 310 2.0	Economic Botany and Plantation Crop Resources	o
BIO 311 1.0	Entrepreneurship Development	o
BIO 322 1.0	Laboratory & Field Work	a

B.Sc. Special Degree Course Units
Special Part I (30 Credits)

Semester I (15 Credits)

BIO 330 1.0	Molecular Biology	c
BIO 302 1.0	Fundamentals of Insect Pest Management	o
BIO 331 1.0	Fundamentals of Environmental Science	o
BIO 315.1.0	Horticulture and Landscaping	o
BIO 307 1.0	Foundation of Education and Teaching Methodology	s
BIO 332 1.0	Plant Pathology I	o
BIO 307 1.0	Plant Pathology II	o
BIO 334 1.0	Plant Tissue Culture	o
BIO 314 2.0	Human Biology	c
BIO 326 1.0	Environmental Toxicolgy (Based on ZOO 330 1.0)	o
BIO 335 2.0	Special Topics in Biology	c
BIO 336 1.0	Recombinant DNA Technolgy	o
BIO 316 1.0	Tropical Human Diseases	o
BIO 318 2.0	Laboratory and Field Work	a

Semester II (15 Credits)

BIO 304 1.0	Aquacuture	o
BIO 308 2.0	Nutrition (Based on ZOO 327 2.0)	o
BIO 333 1.0	Plant Physiology	o
BIO 310 2.0	Economic Botany and Plantation Crop Resources	o
BIO 311 1.0	Entrepreneurship Development	o
BIO 337 3.0	Current Topics in Biology	c
BIO 338 1.0	Fundamentals of Immunology (Based on ZOO 343 1.0)	c
BIO 320 2.0	Research Methodology	o
BIO 323 1.0	EIA Methodologies	o
BIO 340 1.0	Industrial Biotechnology	o
BIO 339 2.0	Mini Research Projects	o
BIO 341 2.0	Development Biology	o
BIO 329 2.0	Laboratory and Field Work	a

Special Part II (30 Credits)

Semester I

BIO 401 2.0	Advanced Microbial Ecology (Based on ZOO 407 2.0)	o
BIO 402 2.0	Wildlife Conservation and Management (Based on ZOO 408 2.0)	o
BIO 417 1.0	Biochemical Signaling and Cell Signaling	o
BIO 418 2.0	Fundamental Concepts of Agricultural Entomology (Based on ZOO 405 2.0)	o
BIO 419 2.0	Bioethics and Biosafety	c
BIO 407 1.0	Soil and Soil Conservation (Based on EMF 467 1.0)	o
BIO 408 1.0	Literature Review	c
BIO 420 2.0	Marine Fisheries Management (Based on ARM 202 2.0)	o
BIO 421 1.0	Recent Trends in Ethnobotany	o
BIO 422.1.0	Conservation Genetics	o
BIO 423 1.0	Virology	o
BIO 424 1.0	Human Genetics and Counseling	o

Semester II

BIO 410 1.0	Ornithology	o
BIO 412 2.0	Product Development and Marketing Management (Based on PBT 494 1.0)	o
BIO 425 2.0	Molecular Principles of Human Diseases (Based on ZOO 414 2.0)	o
BIO 426 1.0	Natural Resources and their Management	c
BIO 427 2.0	Postharvest Technology (Based on PBL 495 2.0)	o
BIO 428 2.0	Microbial Enzymes in Biotechnology (Based on MBL 485 2.0)	o
BIO 429 2.0	Advanced Applied Microbiology (Based on PBL 492 2.0)	o
BIO 430 1.0	Molecular Evolution	o
BIO 431 2.0	Developmental Biology	o
BIO 432 1.0	Bioinformatics and Molecular Modeling	o
BIO 415 8.0	Research Project (Semester I and II)	c

Course Type

-c-
core

-o-
optional for those doing Aquatic Science

-a-
Compulsory

-s-
optional for all students in the faculty



CHE

Chemistry

Offered by the Department of Chemistry

"Chemistry is a branch of natural science that deals with properties of Molecules, their chemical reaction sand laws that describe molecular interactions. Chemistry is a central science and has Interactions with many other sbjects"

B.Sc. (General) Degree Programme with Chemistry

Course code: CHE

Duration: 3 Years

Subject combinations: Refer pages 247-248

For whom?

Students from both biological and physical science streams who are interested in pursuing careers related to a wide range of chemical disciplines in order to address the important problems that lie at the interface of chemistry and closely related subjects. The intake is limited to a maximum of 400 students per academic year.



Career opportunities

Chemistry is central to all sciences and is important to scientists and professionals such as doctors, biologists, engineers, physicians, pharmacists, nurses, and science teachers. There is a high demand for chemists in public sector organizations, and manufacturing and service industries in the private sector. The gained experience will take you on to many diverse and rewarding career pathways.

Course overview

Courses incorporate the most recent advances in the discipline and provide students with a strong foundation in the fundamentals of chemistry. More specialized optional courses which cover a wide range of topics to suit their future goals are offered. Courses in chemistry are designed to meet the needs of the country along with transferable skills such as communication, problem solving, team work, self- direction, leadership and to prepare the students to seek employment with confidence.

Course structure

At the undergraduate level, a three year course is offered to the general degree students who offer other subject disciplines for the degree. All chemistry students follow all the first year and second year course units. These include compulsory and core units, which are designed to provide students with essential knowledge and skills that are required to specialize in chemistry as well as to other students who require a solid chemistry foundation in related disciplines. Based on their performance at the end of the second year, some are selected to follow the special degree programme.

General degree students in their third (final) year, have a range of optional courses in more applied areas of the subject to choose from. The compulsory practical class comprises of 3 hour classes for 10 weeks lasting a total of 90 hours laboratory work for each year, which involves the three main branches of chemistry (Organic, Inorganic, and Physical). The practical is intended to provide students with hands on experience in analytical, technical, instrumental and problem solving skills required in many career pathways.

B.Sc. (Special) Degree Programme in Chemistry
Duration: 4 years

For whom?

This degree is designed for those who wish to gain an in depth knowledge, skills and a broader perspective in chemistry as demanded by the industry and academia.

Career opportunities

The B.Sc. (Special) Degree in Chemistry, offered by the Department of Chemistry is aimed at training professionals in the field of chemistry with insight, skills, advanced and updated knowledge. The strong foundations laid by the special degree would enable the students to acquire postgraduate qualifications from recognized universities which would lead the career path in academia in universities and research institutes in Sri Lanka.

Course overview

B.Sc. Special degree courses are carefully designed to meet the demands of specialized industries and postgraduate institutions. The courses are a combination of theory and practicals with integrated soft skills to make students confident in following their chosen career paths. The students following the special degree programme in chemistry are well trained to join any university worldwide as graduate assistants in pursuing doctoral studies.

Course structure

The chemistry special degree students in their third year follow advanced courses in the core subject areas, while the fourth year students have wider choice of specialized optional courses, some of which relate to applications of chemistry in industry. Students are required to carry out a research project in their final year.

It helps students to sharpen their scientific reasoning, research and analytical skills, and prepares them to take up research work in academic careers. A dissertation is submitted for assessment at the end of the year, which is evaluated after an oral presentation followed by a *viva voce examination*. The special degree students also undergo a short industrial placement during the course. The industry-based assignment/training project in the fourth year allow students to get hands-on experience in applying the theoretical concepts that they learnt in the class room while providing an invaluable opportunity to further strengthen their work-ready skills and team work.

Selection policy

Selection of students to follow the B.Sc. (Special) Degree in Chemistry is based on student performance in the first two academic years. The intake is typically limited to maximum of 30 students.

Mode of Instruction and Assessment

The modules include lectures, tutorials, laboratory practicals, industrial visits and individual and group projects/assignments. These are assessed through end-of-semester written examinations, practical tests, presentations and reports. There is an emphasis on analysis of real problems to reinforce learning. This provides the tools required for group and individual projects. For the practical class, assessment will include attendance, record book and a practical exam held separately for Organic, Inorganic, and Physical Chemistry. A minimum of 80 % attendance will be an essential requirement for completing the practical component.

For further information please contact:

Prof. P.M. Jayaweera,
Head/Department of Chemistry
E mail: p.m.jayaweera@gmail.com

Course Type

-a- Compulsory

-c- core

-o- optional

B. Sc. (General) Degree Course Units

Each student should take course units having a minimum cumulative credit value of 27.0

FIRST YEAR

Semester 1

CHE 106 1.0	Structure and Properties of Matter	c
CHE 108 1.0	Organic Chemistry I	c
CHE 110 1.0	Concepts in Inorganic Chemistry I	c
CHE 112 1.0	Main Group and Transition elements	c
CHE 107 2.0	Chemistry Practicals (Semester I and II)	a

Semester II

CHE 103 1.0	Chemical Thermodynamics	c
CHE 109 1.0	Organic Chemistry II	c
CHE 111 2.0	Introduction to Analytical and Nuclear Chemistry	c
CHE 107 2.0	Chemistry Practicals (Semester I and II)	a

SECOND YEAR

Semester I

CHE 204 1.0	Electrochemistry	c
CHE 205 1.0	Chemistry of Heterocyclic and Bioorganic Compounds	c
CHE 208 1.0	Quantum Chemistry	c
CHE 211 1.0	Concepts in Inorganic Chemistry II	c
CHE 209 2.0	Chemistry Practicals (Semester I and II)	c

Semester II

CHE 202 1.0	Chemistry of Coordination Compounds	c
CHE 203 1.0	Organic Spectroscopy	c
CHE 206 1.0	Chemical Kinetics	c
CHE 207 1.0	Phase Equilibria and Surface Chemistry	c
CHE 209 2.0	Chemistry Practicals (Semester I and II)	c

THIRD YEAR

Semester I

CHE 309 1.0	Environmental Chemistry	o
CHE 319 1.0	Metal Complexes in Catalysis	o
CHE 312 1.0	Basic Chemical Engineering	o
CHE 336 1.0	Polymer Chemistry and Technology	o
CHE 337 1.0	Instrumental Analysis I	o
CHE 338 1.0	Instrumental Analysis II	o
CHE 344 1.0	Food Chemistry	o
CHE 315 2.0	Chemistry Practicals (Semester I and II)	a

Semester II

CHE 340 1.0	Introduction to Molecular Modeling and Designing	o
CHE 333 1.0	Quality Control and Assurance	o
CHE 343 1.0	Photochemical Aspects of Solar Energy Conversion	o
CHE 302 1.0	Industrial Utilization of Plant Materials	o
CHE 330 1.0	Structure and Function of Biomolecules	o
CHE 345 1.0	Industrial Organic Chemistry	o
CHE 341 1.0	Colloids and Nanochemistry	o
CHE 315 2.0	Chemistry Practicals (Semester I and II)	a

Course Type

-a-
Compulsory

-c-
core

-o-
optional

Course Type

-a-
Compulsory

-c-
core

-o-
optional

B.Sc. (Chemistry Special) Degree Course Units

THIRD YEAR

Semester 1

CHE 359 1.0	Symmetry and Group Theory	c
CHE 360 1.0	Advanced Electrochemistry	c
CHE 363 1.0	Statistical Thermodynamics	c
CHE 365 1.0	Diffraction Methods in Chemistry	c
CHE 366 1.0	Organotransition Metal Chemistry	c
CHE 368 1.0	Bio-inorganic Chemistry	c
CHE 379 1.0	Chemistry of Biological compounds	c
CHE 381 2.0	Synthetic Organic Chemistry	c
CHE 382 1.0	Polynuclear Aromatic HC and Heterocyclic Compounds	c
CHE 383 1.0	Organic Reaction Mechanisms	c
CHE 375 2.0	Organic Chemistry Practicals (Semester I and II)	a
CHE 374 2.0	Inorganic Chemistry Practicals (Semester I and II)	a
CHE 376 2.0	Physical Chemistry Practicals (Semester I and II)	a

Semester II

CHE 352 1.0	Spectroscopic Methods in Inorganic Chemistry	c
CHE 353 1.0	Structural Chemistry	c
CHE 354 1.0	Inorganic Reaction Mechanisms	c
CHE 358 1.0	Advanced Organic Spectroscopy	c
CHE 361 1.0	Advanced Chemical Kinetics	c
CHE 362 1.0	Advanced Quantum Chemistry	c
CHE 367 1.0	Advanced Coordination Chemistry	c
CHE 369 1.0	Molecular Photochemistry	c
CHE 371 1.0	Biochemistry	c
CHE 377 1.0	Modern Chromatographic Techniques	c
CHE 378 1.0	Advanced Analytical Chemistry	c
CHE 384 1.0	Natural Product Chemistry	c
CHE 385 1.0	Asymmetric Organic Synthesis	c
CHE 375 2.0	Organic Chemistry Practicals (Semester I and II)	a
CHE 374 2.0	Inorganic Chemistry Practicals (Semester I and II)	a
CHE 376 2.0	Physical Chemistry Practicals (Semester I and II)	a

FOURTH YEAR

Semester 1

CHE 451 1.0	Inorganic Materials	o
CHE 456 1.0	Polymer Chemistry[#]	c
CHE 457 1.0	Molecular Spectroscopy	c
CHE 459 1.0	Advanced Chemical Thermodynamics	c
CHE 462 2.0	Food Chemistry and Technology[##]	c
CHE 465 1.0	Biophysical Chemistry	o
CHE 474 1.0	Physical Chemistry of Polymers[#]	o
CHE 481 1.0	Surface Techniques and Dynamic Surfaces	c
CHE 483 1.0	Polymer Blends and Composites	o
CHE 484 1.0	Polymer Coating and Paint Industry	o
CHE 486 1.0	Nanochemistry	o
CHE 492 1.0	Molecular Modeling and Computational Chemistry	c
CHE 493 1.0	Technological aspects in modern research	o
CHE 499 2.0	Advanced Physical Organic Chemistry	c
CHE 490 8.0	Research Projects (Semester I and II)	a

Semester II

CHE 401 1.0	New Trends in Organic Synthesis	o
CHE 454 1.0	Medicinal Chemistry	o
CHE 458 1.0	Advanced Surface Chemistry	c
CHE 460 1.0	Industrial Management	o
CHE 461 1.0	Basic Chemical Engineering	c
CHE 464 1.0	Polymer Technology[#]	o
CHE 466 1.0	Chemistry of plant products and their applications in industry	o
CHE 470 1.0	Environmental Chemistry	c
CHE 476 1.0	Solid State Chemistry	c
CHE 485 1.0	Quality Control and Assurance	o
CHE 491 1.0	Supramolecular Chemistry	o
CHE 494 1.0	Analysis of Macromolecules	o
CHE 495 1.0	Principles and Practices of Optical and Electron Microscopy	o
CHE 498 1.0	Atmospheric Chemistry	o
CHE 490 8.0	Research Projects (Semester I and II)	a

Course Type

-a-
Compulsory

-c-
core

-o-
optional

-#-
Students who have followed Polymer science and technology as a subject in the first two years are not allowed to follow this course.

-##-
Students who have followed Food Science as a subject in the first two years are not allowed to follow this course.



CSC

Computer Science

Offered by the Department of Computer Science

"Computer science deals with an integral part of modern society which drives the advances of other disciplines at an exponential rate"

B.Sc. (General) Degree Program with Computer Science
Course Code: CSC - Duration: 3 Years
Subject Combinations: Refer pages 247-248

For Whom?

Students from physical science stream who are interested in pursuing careers related to Computer Science. The intake is limited to a maximum of 120 students in an academic year.

Career opportunities

Organizations that use computers on a large scale – such as banks, insurance companies, the electronics industry, central and local government, and management in all areas of business – offer employment opportunities to graduates with computing skills. Some graduates spend their time on software development and computer systems support and remain in mostly technical environment.

Course overview

Learning Computer Science is about understanding computer systems at a deeper level. This includes both software and all its related hardware. The computers and software they run are among most complex products ever created by humans. Designing and using them effectively presents immense challenge. This course concentrates on creating links between theory and practice. It covers a wide



variety of software and hardware technologies and their applications. Students are introduced to a range of modern programming paradigms, including procedural programming, object oriented, visual and logic programming. Other disciplines such as software engineering, net centric computing and intelligent computing are also covered. The syllabus offered by the department covers a vast area of the subject and is revised regularly to include the most recent developments in the industry.

Course structure

Computer Science will constitute one third of the B.Sc.(General) degree program in allowed subject combinations. Students are required to take core course units in CSC having a minimum cumulative credit value of 27.0. These course units are designed to provide students with essential knowledge in theory, practice and skills that are required in computing industry.

Mode of instruction and assessment

Students enrolled in general degree program in Computer Science will be taught by academic staff with well-established track records. The medium of instruction is English. The course units include; lectures, assignments, individual and group projects and laboratory practical. They are assessed through continuous assessments, end-of-semester written examinations, practical examinations, presentations and reports.

B.Sc. (Special) Degree Program in Computer Science

Course Code: CSC

Duration: 4 Years

For whom

Students who follow Computer Science as a subject for B.Sc. (General) degree program are selected for the special degree.

Career opportunities

Employers recognize a special degree as proof of additional skills, knowledge and achievement. In the present job market, Computer Science graduates are better placed than many others to obtain employment. The passion pursued in the final year will enable the students to guarantee high positions in the industry.

Computer manufacturers and software houses, for example, recruit specialists to develop software solutions. Some of the current designations of Computer Science special graduates are Lecturer, Assistant Project Manager, Software engineer and Business Analysts etc.

The degree also prepares the students for further study in Master's and PhD programs and opens up the possibility to have an exciting research career, helping communities to solve complex problems.

Course overview

The Computer Science special degree is designed for those who want to mark out as high achievers by gaining advanced skills and greater depth of knowledge in Computer Science which will widen the employability and career options in the industry and academia.

At the final year students are required to carry out a research project and industrial placement scheme which exposes the students to the industrial and computing environment.

Course structure

During third year (Part I) students need to obtain minimum of 30.0 credits from Part I courses, out of which 27.0 credits from core course units and 3.0 credits from optional units. In fourth year (Part II) students are required to offer course units having a minimum cumulative credit value of 30.0 from Part II courses.

Selection criteria

The selection is based on student performances in the first two academic years. Students are required to maintain a high GPA value in Computer Science and a good overall GPA. Also they need to maintain good attendance records (80%). The students intake typically depends on the resources available during the time of selection.

Mode of instruction and assessment

Students enrolled in special degree program in Computer Science will be taught by academic staff with good track records. The medium of instructions is English. The course units include; lectures, assignments, individual and group projects and laboratory practical. They are assessed through continuous assessments, end of semester written exams, practical examinations, presentations and reports.

For further information please contact:

Mr. D.D.A. Gamini

Head/Department of Computer Science

E mail: gamini@dscs.sjp.ac.lk

B.Sc. (General) Degree Course Units

Each student should take course units having a minimum cumulative credit value of 27.0

FIRST YEAR

Semester I

CSC 106 1.5	Computer System Organization	c
CSC 107 2.0	Introduction to Computer Programming	c
CSC 108 1.5	Software Engineering I	c

Semester II

CSC 110 2.0	Objected Oriented Programming	c
CSC 111 1.0	Computer Programming - Laboratory	c
CSC 112 2.0	Software Engineering II	c

SECOND YEAR

Semester I

CSC 201 2.0	Data Structures and Algorithms I	c
CSC 203 1.5	Computer System Architecture	c
CSC 207 1.5	Knowledge Representation	c

Semester II

CSC 208 2.0	Operating Systems	c
CSC 209 2.0	Database Management Systems	c
CSC 210 1.0	Computer Graphics	c

THIRD YEAR

Semester I

CSC 311 1.5	Web Technologies	o
CSC 312 2.0	Visual Computing	c
CSC 313 1.5	Service Oriented Computing	o
CSC 314 1.5	Rapid Application Development	o
CSC 319 1.5	Machine Learning I	c

Course Type

-c-
core

-o-
optional for those doing Computer Science

Course Type

-c-
core

-o-
optional for those doing Computer Science

Semester II

CSC 309 1.5	Expert Systems	o
CSC 310 2.0	Project	o
CSC 315 1.5	Net Centric Computing	c
CSC 316 2.0	Artificial Intelligence	c
CSC 317 1.5	Human Computer Interaction	o
CSC 361 1.0	Swarm Intelligence	o
CSC 365 2.0	Software Quality Assurance	o
CSC 366 1.5	Social and Professional Issues in IT	o

B.Sc. (Special) Degree Course Units

Each student should take course units having a minimum cumulative credit value of 30.0 from both PART I and PART II

PART I

Semester I

CSC 311 1.5	Web Technologies	o
CSC 312 2.0	Visual Computing	c
CSC 313 1.5	Service Oriented Computing	c
CSC 314 1.5	Rapid Application Development	o
CSC 369 2.0	Machine Learning I	c
CSC 353 2.0	Theory of Computation	c
CSC 357 2.0	Data Structures and Algorithms II	c
CSC 362 1.5	Seminar I	c
CSC 363 1.5	Research Methodologies and Scientific Communication	c
CSC 378 1.5	Computer Systems Security	c
CSC 381 2.0	Programming and Data Analysis with R (based on STA 326 2.0)	o
CSC 391 1.5	Categorical Data Analysis (based on STA 311 1.5)	o

Semester II

CSC 309 1.5	Expert Systems	o
CSC 315 1.5	Net Centric Computing	c
CSC 316 2.0	Artificial Intelligence	c
CSC 317 1.5	Human Computer Interaction	o
CSC 352 2.0	Modeling and Simulation	o
CSC 355 2.0	Operations Research	c
CSC 361 1.0	Swarm Intelligence	o
CSC 364 1.5	Seminar II	c
CSC 365 2.0	Software Quality Assurance	c
CSC 366 1.5	Social and Professional Issues in IT	o
CSC 375 2.0	Machine Learning II	c
CSC 376 1.5	Embaded Systems and Internet of Things	o
CSC 377 2.0	Programming Languages	c
CSC 386 1.0	Introduction to Microprocessors (based on PHY 309 1.0)	o
CSC 395 1.0	Mathematical Modeling I (based on MAT 324 1.0)	o

PART II

Semester I

CSC 452 2.0	Geometric Modeling	o
CSC 453 2.0	Intelligent Systems	o
CSC 456 2.0	Multimedia and Hypermedia Technology	o
CSC 457 2.0	Distributed Systems	o
CSC 459 2.0	Fuzzy Theory	o
CSC 460 2.0	Miscellaneous Topics in Computing Science	o
CSC 461 8.0	Project (Semester I and II)	c
CSC 462 2.0	Digital Image Processing	o

Course Type

-c-
core

-o-
optional for those doing Computer Science

Course Type

-c- core

-o- optional for those doing Computer Science

CSC 463 2.0	Data Warehousing, Data Mining and Information Retrieval	o
CSC 464 2.0	Computational Biology	o
CSC 465 2.0	Robotics	o
CSC 466 2.0	Project Management for IT systems	o
CSC 467 2.0	Evolutionary Computing	o
CSC 468 2.0	Advanced Database Systems	o
CSC 469 2.0	Mobile Computing	o

Semester II

CSC 451 8.0	Industrial Training	c
CSC 461 8.0	Research Project (Semester I and II)	c



ECN

Economics

Offered by the Faculty of Applied Sciences

"Economics is the science that analyzes the production, distribution, and consumption of Goods and services"

B.Sc. (General) Degree Programme with Economics
Course Code: ECN

Duration: Three Years
Subject combinations : Refer pages 247-248

For whom?

The Economics programme is designed for mathematically competent students who follow the subject areas of statistics and mathematics and wish to experience a broader fundamental exposure in Economics or who want to become professional economists.

Course overview

Economics course units offered will provide an important opportunity for the students to gain a solid understanding in principles of economics along with applied areas related to natural resources, environment and industries.

This course of study provides a stimulating setting for the students to gain a solid understanding of economic applications useful in providing guidance for decision making under resource scarcity.

Course structure

Economics course units focus on the study of basic and advanced courses of theoretical economics such as Micro and Macro Economics and applied areas including Environmental economics, Industrial Economics, Project Planning and Analysis , Agricultural and Health Economics, and Resource Economics. From a total of 30 credits, minimum of 27 credits must be completed at the end of 3rd year to complete the degree. These include compulsory and optional course units.

The Department of Economics of the Faculty of Humanities and Social Sciences provides the expertise and support in conducting the basic and advanced courses of economics lecture series. Major part of the applied courses will be conducted by the lecturers from the Department of Forestry and Environmental Science and the Department of Food Science and Technology.

Mode of instruction on Assessment

The teaching method of Economics is a blend of theory and practice. To ensure that students are acquiring the required knowledge and competencies, end of semester examination, presentations and written reports will be held. Guest lectures and field visits are also given due importance throughout the semester.

For further information please contact:

Dr. U.A.D. Prasanthi Gunawardena
Course Coordinator
Email: prasanth@sjp.ac.lk

B.Sc. (General Degree) Course Units

Each student should take course units having a cumulative credit value of 27.0.

Total credits - Compulsory credits - 23 ; Optional credits - A minimum of 04 credits are required to be selected out of 07 credits

Course Type

-*-
compulsory course units

-**-
optional course units

FIRST YEAR

Semester I

ECN 101 3.0	Principles of Microeconomics	*
ECN 102 2.0	Managerial Economics	*

Semester I I

ECN 103 3.0	Principles of Macroeconomics	*
ECN 104 2.0	Environmental Economics	*

SECOND YEAR

Semester I

ECN 201 3.0	Intermediate Microeconomics	*
ECN 202 2.0	Industrial Economics	*

Semester II

ECN 203 3.0	Intermediate Macroeconomics	*
ECN 204 2.0	Advanced Resource Economics	*

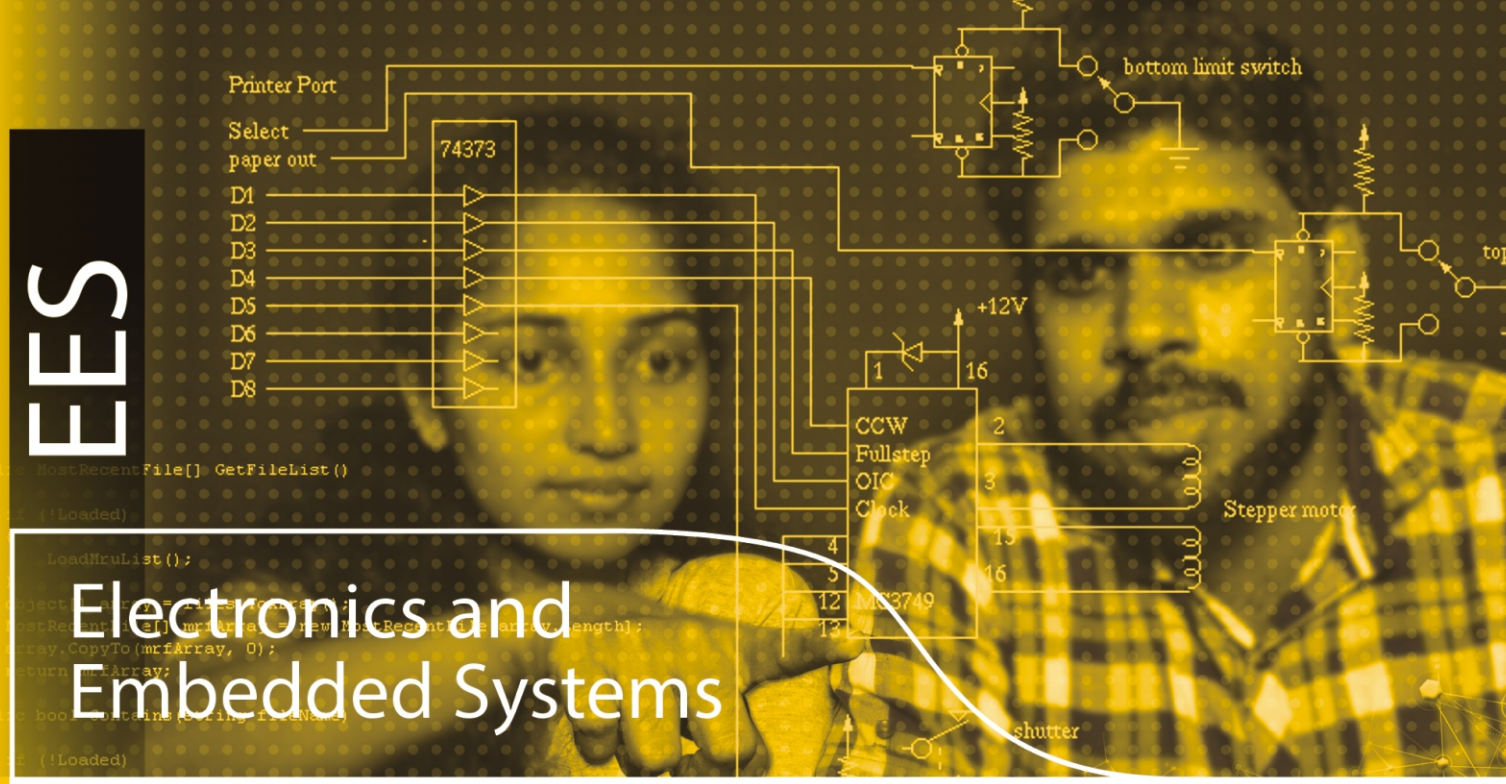
THIRD YEAR

Semester I

ECN 301 3.0	Advanced Microeconomics	*
ECN 302 2.0	Agricultural Economics	**

Semester II

ECN 303 2.0	Advanced Econometrics	**
ECN 304 2.0	Project Planning and Analysis	**
ECN 305 1.0	Health Economics	**



Offered by the Department of Physics

"The Electronic and Embedded Systems course can best be described as a successful attempt to fulfill the national needs for advancements in the field of electronics, robotics and internet of things."

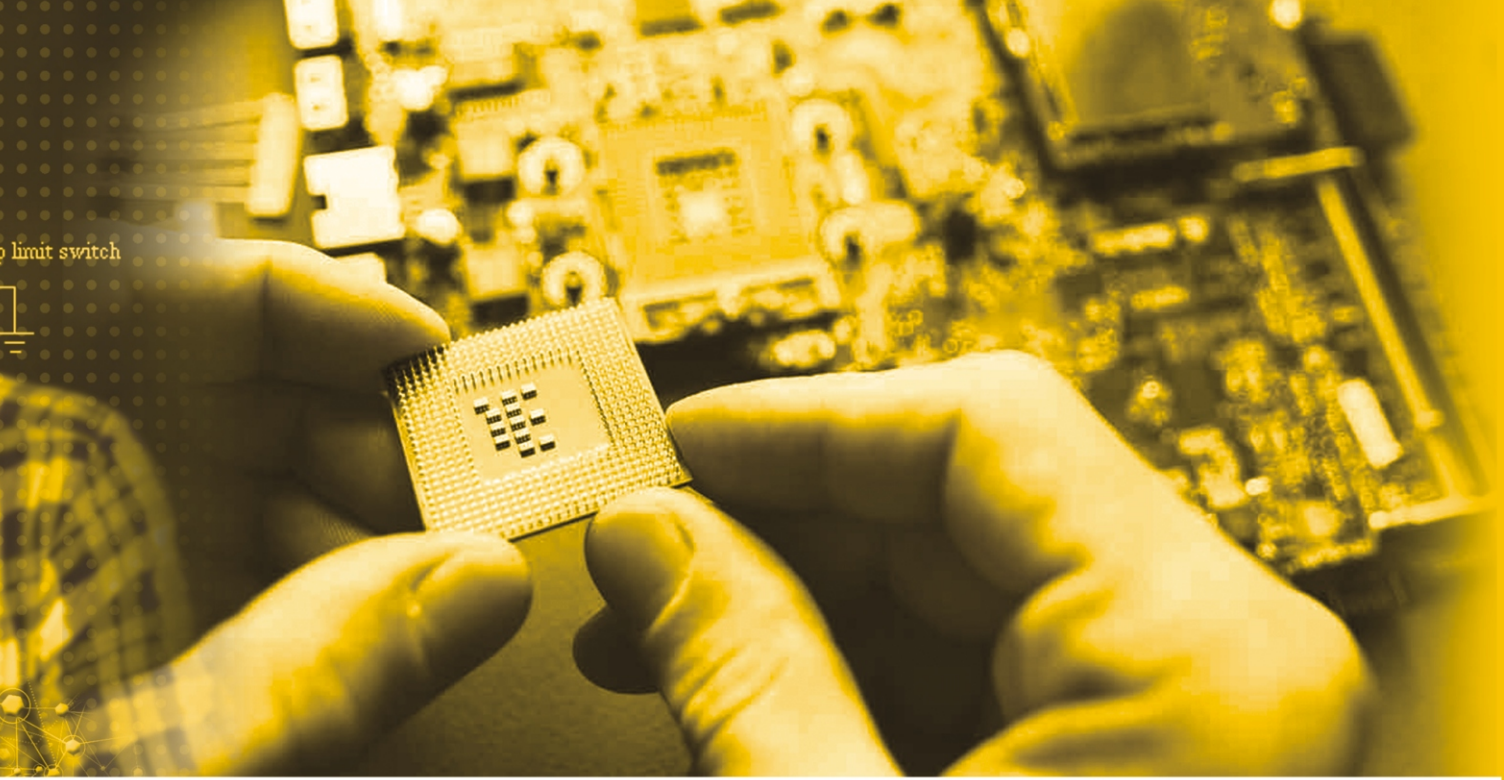
B.Sc. (General) Degree Program with Electronics and Embedded Systems
Course Code: EES; Duration: 3 Years
Subject Combinations: Please see pages 247-248

For whom?

This proposed course is geared towards physical stream students interested in pursuing carriers in Physics and Electronics and Embedded Systems. Consideration will be given to the students who are selected by the University Grant Commission (UGC). It is expected that Electronics and Embedded Systems combined with Physics and Mathematics provide an innovative combination in order to graduate with essential knowledge, specific expertise and skills related to the national needs. The intake is limited to a maximum of 20 students per academic year.

Career opportunities

The majority of students who are completing the B.Sc. General degree tend to seek job opportunities in academia as well as in industry. Therefore, a general degree program which is focused on producing graduates with more practical knowledge will certainly be of high demand. Also, with the rapid development of



technology, automation, internet of things, and robotics applications are integrated in to our lives as in telecommunication, health systems, entertainment, security, etc. Therefore, the emerging employment trends seek for graduates with knowledge in Electronics and Embedded Systems to develop automation, robotics and internet of things projects. The proposed Electronics and Embedded Systems course will be structured in a way that the students will gain knowledge in demanding fields thus opening new avenues of employment for science graduates.

Course overview

The developed curriculum of the Electronics and Embedded Systems program is structured to provide The prospective students a solid foundation of theory and practical in Physics, Electronics and Mathematics during their first two academic years. Therefore, the students to follow this undergraduate Subject should select the combination containing Physics, Mathematics, and Electronics and Embedded Systems. The third year of study is emphasized more on application oriented courses thus included course units in embedded electronics, internet-of-things (IoT), robotics, instrumentation, and automation.

Course structure

The Electronics and Embedded Systems Course is designed as a three years degree course which will focus on laboratory practical sessions while covering undergraduate level Physics and Mathematics. The students are required to take course units in Electronics and Embedded Systems with a minimum cumulative credit value of 27.0 during the three years. The course units comprise of 'compulsory', 'core', non-core', 'optional' subjects so that the students are provided with the Electronics and Embedded Systems stream while allowing some level of flexibility to pursue optional interest.

For further information please contact:
Dr. W. K. I. L.Wanniarachchi
Course coordinator,
Dept. of Physics,
University of Sri Jayewardenepura, Nugegoda.
E mail: iwanni@sjp.ac.lk

B.Sc. (General) Degree Course Units

Each student should take course units having a minimum cumulative credit value of 27.0

FIRST YEAR

Semester I

EES 101 2.0	Micro-Electronics and Devices	c
EES 102 2.0	Fundamental C programming Techniques	c
EES 103 1.0	Probability and Statistics	c

Semester II

EES 104 2.0	Python Programming for Embedded Systems	c
EES 105 1.0	Device Fabrication Technology	c
EES 106 1.0	Electrical Machines	c
EES 107 1.0	Communication Skills and Report Writing	c

SECOND YEAR

Semester I

EES 201 1.0	Sensors and Actuators	c
EES 202 1.0	Data Communication Techniques	c
EES 203 1.0	Electrical Power Systems	c
EES 204 1.0	Data Analysis and Modeling	c
EES 205 1.0	Object Oriented Programming for Embedded Systems	c

Semester II

EES 206 2.0	Advanced Analog and Digital Electronics	c
EES 207 2.0	Data Acquisition and Signal Processing	c
EES 208 1.0	Data Acquisition and Signal Processing Lab	a

THIRD YEAR

Semester I

EES 301 2.0	Microprocessors and Computer Interfacing	c
EES 302 1.0	Circuit Fault Diagnostics	c
EES 303 1.0	Embedded Systems Development Lab	a
EES 306 1.0	Introduction to Instrumentation and Measurements	o
EES 307 1.0	Embedded Systems Group Project	o
EES 308 1.0	Introduction to Programmable Logic Controllers	o

Semester II

EES 304 2.0	Introduction to Internet of Things and Robotics	c
EES 305 1.0	Internet of Things and Robotics Lab	a
EES 309 1.0	Wireless Ad-Hoc and Sensor Networks	o
ESS 310 1.0	Introduction to Digital image processing	o
EES 311 1.0	Mobile Application Development	o
EES 312 1.0	Google Applications	o

Course Type

-a-
compulsory

-c-
Core

-O-
Optional

- #-
Those who are doing Electronics and Embedded Systems as a subject must take PHY 311 1.0 Introduction to Computer Hardware course instead of PHY 309 1.0 Introduction to Microprocessors

EMF

Environmental Management & Forestry

Offered by the Department of Forestry and Environmental Science

"Environment Management involves making the environment healthier by protecting the environment and related Resources and promoting sound ecology and management practices"

B.Sc. (General) Degree Programmee with Environmental Management and Forestry

Course code: EMF - Duration: 3 Years

Subject combinations: Refer pages 247-248

For whom?

Students from both biological and physical science streams who are interested in pursuing careers related to environment or natural resource management and forestry. The intake is limited to maximum of 60 students in an academic year.

Career opportunities

With the environment becoming an essential component in decision making, there is a rising Demand for competent graduates in environment-related professions. The course in Environmental Management and Forestry will take you on to diverse and rewarding careers in government ministries, non-governmental organizations, environmental and business consultancies, public sector organizations, and manufacturing and service industries in the private sector.

Course overview

The concept of sustainable development, which aims to harmonize the economic, social and environmental dimensions of development strategy, has now become a key aspect of policy making by governments throughout the world.



as such, an in-depth knowledge in environment, natural resources and their management is likely to provide one with an added advantage in the modern competitive career market. Environment Management and Forestry course is aimed at equipping students with knowledge and skills in a range of key disciplines related to forestry and environment, along with employability skills such as communication, problem solving, team work, self-direction and leadership.

The study of Environmental Management is not just about progressing your way towards obtaining a degree. It is more importantly about providing you with a solid base in fields of forestry and environment, and enabling you to make the right choice in the best interest of the society and environment. With such a solid foundation, graduates will be able to develop and implement best practice strategies for natural resources management in the public and private sectors.

Course structure

Environmental Management and Forestry will constitute one third of the Bsc. (General) degree program in a permitted subject combination. Students are required to take course units in EMF having a minimum cumulative credit value of 27.0. These include compulsory, core, and elective course units. Compulsory and core course unite are designed to provide students with essential knowledge and skills that are required in forestry and environmental management. The industry-based assignment/traning project in the third year allow students to get hands-on experience in applying the concepts they learned in the class room while providing an invaluable opportunity to further strengthen their work-ready skills.

B.Sc. (Special) Degree in Environmental Management and Forestry
Duration: 4 Years

For whom?

The B.Sc. (Special) Degree is aimed at preparing a new breed of experts in the field of forestry and environment with insight, skills, knowledge and ability to appreciate all aspects in decision making for sustainable management of natural resources.

Course overview

The core curriculum is designed to provide students with in-depth knowledge, skills and a broader perspective of forestry and environmental management that is demanded by the industry. The final year research project helps students to sharpen their scientific reasoning, research and analytical skills, and make them prepare to take up research and academic careers. The degree is recognized by many universities in Europe, U.S. and Australia, thereby providing an ideal framework to obtain research positions and PhD studentships abroad.

Selection policy

Selection of students to follow the B.Sc. (Special) Degree in Environmental Management and Forestry is based on student's performance in the first two academic years. the intake is typically limited to a maximum of 10 students to ensure a personalized attention and guidance to each student.

Mode of instruction and assessment

Students enrolled in both General and Special Degree programs will be taught by an academic staff with an established track record, who appreciate the necessity of an integrated approach for the management and use of the world's environmental resources. The modules include lectures, tutorials, laboratory practicals, field classes and individual and group project / assignments. These are assessed through end-of-semester written examinations, practical tests, presentations and reports. There is an emphasis on analysis of real problems, with practical case studies to reinforce learning. This provides the tools required for the group and individual project.

For further information please contact:

Dr. Prasanthi Gunawardena
Head/Department of Forestry and Environmental Science
E mail : prasanth@sjp.ac.lk
Phone : 0112 804685
Fax : 0112 802937

B.Sc. (General) Degree Course Units

Each student should take course units having a minimum cumulative credit value of 27.0

FIRST YEAR

Semester I

EMF 101 1.0	Ecological Principles	c
EMF 103 1.0	Forest Mensuration and Inventory	c
EMF 106 1.0	Principles and Practice of Silviculture	c
EMF 113 1.0	Practical Module in Ecology, Forest Mensuration and Silviculture	a
EMF 115 1.0	Key Skills for Resource Managers	c

Semester II

EMF 102 1.0	Environmental Chemistry	c
EMF 108 1.0	Forest Biology	c
EMF 114 1.0	General Geology and Soil Science (previously Geology and Soil Science)	c
EMF 116 1.0	Practical Module in Environmental Chemistry and Forest Biology	a
EMF 117 1.0	Principles of Wildlife Ecology	c

SECOND YEAR

Semester I

EMF 201 1.0	Tropical Forest Ecology	c
EMF 213 1.0	Surveying, Natural Resource Mapping and GIS	c
EMF 214 1.0	Practical Module in Surveying, Mapping, GIS and Soil Science	a
EMF 220 1.0	Waste Water Management	c
EMF 221 1.0	Environmental Pollution and its Control	c

Semester II

EMF 216 2.0	Wood Science and Forest Based Industries	c
EMF 218 1.0	Tree Diversity and Systematics	c
EMF 219 1.0	Practical Module in Wood Science and Plant Systematics	a
EMF 222 1.0	Principles in Hydrology and Climatology	c

Course Type

-a-
compulsory

-c-
core

-n-
optional for those not doing Forestry

-o-
optional for those doing Forestry-

Course Type

-a-
Compulsory

-c-
core

-n-
optional for those not doing Forestry

-o-
optional for those doing Forestry-

-s-
optional for all students in the faculty; Those who are doing economics as a subject are not allowed to do this course unit.

THIRD YEAR

Semester 1

EMF 314 1.0	Forest and Environmental Policies and Laws	c
EMF 315 1.0	Environmental and Social Impact Assessment	c
EMF 316 1.0	Corporate Environmental Management	o
EMF 317 1.0	Resource and Environmental Economics	c
EMF 319 1.0	Water Resource Management	c
EMF 321 1.0	Wildlife Conservation and Management	c
EMF 323 1.0	Forest Tree Improvement	c

Semester 11

EMF 307 1.0	Forest Management	c
EMF 311 1.0	Agro Forestry and Social Forestry	c
EMF 313 1.0	Field/Factory Assignment	a
EMF 318 1.0	Forest Pathology and Entomology	o
EMF 322 1.0	Land Use Planning and Management	o
EMF 330 1.0	Ecotourism Planning and Management (Formerly EMF 363 1.0)	o
EMF 331 1.0	Project Planning and Analysis (Formerly EMF 363 1.0)	s
EMF 370 1.0	Integrated Resource Management	o

B.Sc. Special Degree Course Units

Part I

Semester 1

EMF 301 1.0	Practical Module in Pollution control, Forest Management, Forest tree Improvement, soil physics, Wildlife and Instrumentation	c
EMF 314 1.0	Forest and Environmental Policies and Laws	c
EMF 315 1.0	Environmental and Social Impact Assessment	c
EMF 316 1.0	Corporate Environmental Management	o
EMF 317 1.0	Resource and Environmental Economics	c
EMF 319 1.0	Water Resource Management	c
EMF 321 1.0	Wildlife Conversation and Management	c
EMF 323 1.0	Forest Tree Improvement	c

EMF 351 1.0	Conservation Biology	c
EMF 352 1.0	Wood Structure, Identification and Timber Grading	c
EMF 353 1.0	Environmental Microbiology	c
EMF 354 1.0	Tree Physiology	c
EMF 356 1.0	Seminars on Special Topics II	a
EMF 367 1.0	Chemistry and Industrial Utilization of Plant Products	o
EMF 366 1.0	Rural Sociology	c

Semester II

EMF 307 1.0	Forest Management	c
EMF 311 1.0	Agro Forestry and Social Forestry	c
EMF 313 1.0	Field/Factory Assignment	a
EMF 318 1.0	Forest Pathology and Entomology	o
EMF 322 1.0	Land Use Planning and Management	c
EMF 330 1.0	Ecotourism Planning and Management (Previously EMF 363 1.0)	c
EMF 331 1.0	Project Planning and Analysis (Previously EMF 364 1.0)	s
EMF 357 1.0	Research Methodology	c
EMF 358 1.0	Advanced Silviculture	c
EMF 359 1.0	Advanced Resource Economics	c
EMF 361 1.0	Indigenous Knowledge in Natural Resource Management	c
EMF 362 1.0	Green Business Development	o
EMF 365 1.0	Seminars on Special Topics II	a
EMF 367 1.0	Chemistry and Industrial Utilization of Plant Products (Based on CHE 302 1.0)	o
EMF 369 1.0	Cleaner Production and Green Technology (previously Cleaner Production and Industrial Ecology)	c
EMF 370 1.0	Integrated Resource Management	c
EMF 371 1.0	Urban Forestry	o

Course Type

-a-
compulsory

-c-
core

-n-
optional for those not doing Forestry

-o-
optional for those doing Forestry-

-s-
optional for all students in the faculty; Those who are doing economics as a subject are not allowed to do this Course unit.

Course Type

-a-
Compulsory

-c-
core

-n-
optional for those not doing Forestry

-o-
optional for those doing Forestry-

Part II

Semester I

EMF 451	1.0	An Ecosystem Approach to Forest Management	c
EMF 453	1.0	Plant Systematics	c
EMF 455	1.0	Forest Harvesting and Sawmilling	c
EMF 456	2.0	Seminars on Special Topics	a
EMF 457	8.0	Research Project	a
EMF 461	2.0	Advances in Environmental Pollution Control	c
EMF 467	1.0	Soil and Soil Conservation	c
EMF 468	1.0	Remote Sensing, GIS and Mapping	c
EMF 469	1.0	Operational Research in Environmental Management	c
EMF 474	1.0	Protected Area Management	c
EMF 477	1.0	Bioethics	o
EMF 478	1.0	Disaster Management	o
EMF 481	1.0	Ecohydrology	c

Semester II

EMF 454	2.0	Assignment on Forest Management Plan Preparation	c
EMF 457	8.0	Research Project	a
EMF 458	1.0	Wood Based Composites	c
EMF 459	1.0	Forestry for Rural Development	c
EMF 463	1.0	Environmental Epidemiology and Toxicology	c
EMF 471	1.0	Energy and Environment	o
EMF 472	1.0	Land Reclamation and Soil Remediation	c
EMF 475	1.0	Economic Instruments in Environmental Management	o
EMF 476	2.0	Seminars on Special Topics II	a
EMF 479	1.0	Special Topics in Forestry and Environmental Science	o
EMF 480	2.0	Environmental Modeling	c



FST

Food Science & Technology

Offered by the Department of Food Science and Technology

"Food Science is the study of physical, biological and chemical components of food and the concepts of food processing. Food Technology is the application of the above for preservation and safe use of food"

B.Sc. (Special) Degree Programme in Food Science and Technology
Course Code: FST

Duration: 4 years

For whom?
Biological Science students who are selected by University Grants Commission (UGC) through a special window. The intake is limited to maximum of 50 students per academic year.

Opportunities
There is a big demand for FST graduates in food ingredient manufacture, food plant equipment and packaging manufacture, food service, government administration/ food legislation/ food technology, public analysts in laboratories, environmental health department, trading standards and department, journalism/ information service, research and education institutes and associations, overseas locations (food sector), and consulting (local and international).

Course overview
The B.Sc. Degree in Food Science and Technology has been designed to enable the prospective FST graduates to be able to demonstrate excellence in their future professions through transferring the knowledge and practical skills related to all subjects and facilitating to apply both theoretical knowledge and related practical skills appropriately in different situations. It is also expected that they will develop their technical competencies in order to meet any challenging situation in the food industry.

The abilities and skills expected to transfer to the SJP FST graduates through the degree programme include intellectual skills, practical skills, research skills, generic skills, numeracy skills, communication skills (with special emphasize on scientific communication technology skills (ICT), interpersonal team work skills, self management and professional development skills.

Course structure
Students are required to take course units in FST having a cumulative credit value of 120. These include compulsory, core and elective course units. In addition, the student are also offered non-credit base course units throughout the course. Compulsory and core course units are designed to provide student with the knowledge essential in working in the field of Food Science and Food Technology of both. The In-plant training programme focusing of real world industrial exposure (in fourth year first semester) and graduate research project (in fourth year second semester) are two vital components to facilitate our undergrad in getting hands on experience and in applying the concepts they learned in the classroom into practices and research.

Mode of instruction and assessment
Student enrolled in both general and special degree programme will be taught by academic staff with well established track record. The medium of instruction is English. The course units include; lectures, assignments, individual and group project, field classes and laboratory practicals. They are assessed through end-of-semester written examinations, practical examination, presentations and reports.

B.Sc. (General) Degree Programme with Food Science and Technology
Course Code: FSC

Duration: 3 Years
Subject Combination: Refer pages 247-248

For whom?

This course is for students from the Biological Science stream who are interested in pursuing careers in Food Science. The intake is limited to a maximum of 30 students per academic year.

Career opportunities

Food Science and Technology is a fast growing and diversifying industry. Graduates offering FSC as a subject have many opportunities to apply their knowledge to solve problems associated with food packaging, shelf-life, etc.

Course overview

This course is aimed at equipping students with knowledge and skill in a range of key disciplines related to Food Science along with employability, skill such as ICT, problem solving, team work, self-management and professional development.

Course structure

Food Science will constitute one third of the B.Sc. (General) degree programme. Students are required to take course units in FSC having a minimum cumulative credit value of 30. These include compulsory, core and optional course units.

For further information please contact:

Dr. R.A.U.J. Marapana
Head/Department of Food Science and Technology
E mail: umarapana@sci.sjp.ac.lk

Course Type

-a-
compulsory

-c-
core

-*-
course units are interconnected.

B. Sc.Special Degree (Food Science and Technology)

Each student should take course units having a minimum cumulative credit value of 120

FIRST YEAR

Semester I

FST 151 1.0	Principles of Mathematics	c
FST 152 1.0	Introduction to Computer Science	c
FST 156 1.0	Principles of Management I	c
FST 178 1.0	Principles of Physics	c
FST 168 1.0	Introduction to Food Science and Technology and Nutrition	a
FST 172 1.0	Food Resources I	c
FST 193 1.0	Food Science and Technology Practicals I Identification of Major Constituents of Foods	a
FST 181 1.0	Biology of Food Crops	c
FST 173 1.0	Biology of Food Animals	c
FST 160 1.0	Principles of Organic Chemistry I (As per CHE 108 1.0)	c
FST 171 1.0	Concepts in Inorganic Chemistry I (As per CHE 110 1.0)	c
FST 162 1.0	Main group and Transition Elements (As per CHE 112 1.0)	c
FST 165 1.0	Chemical Thermodynamics (As per CHE 103 1.0)	c
Total		13

FIRST YEAR

Semester II

FST 153 1.0	Computer Application for Food Sciences 1	c
FST 157 1.0	Principles of Management II	c
FST 154 1.0	Mathematics for Food Sciences	c
FST 179 1.0	Food Physics Principles	c
FST 163 1.0	Chemistry of Living Systems	c
FST 174 1.0	Principles of Human Nutrition (Based on FST 270 1.0)	c
FST 182 1.0	Food Resources II (Based on FST 269 1.0)	c
FST 196 1.0	Food Science and Technology Practicals II - Basics of Food Quality	a
FST 183 1.0	Fundamentals of Microbiology (Based on FST 268 1.0)	c
FST 184 1.0	Science of Animal Based Food Products	c
FST 185 1.0	Science of Plant Based Food Products	c
FST 198 0.0	#Student Portfolio	c
FST 164 2.0	Introduction to Analytical and Nuclear Chemistry (As per CHE 111 2.0)	c
FST 167 1.0	Principles of Organic Chemistry II (As per CHE 109 1.0)	c

FST 166 1.0	Structure and Properties of Matter (As per CHE 106.1.0)	c
FST 195 2.0	Chemistry Practicals (Org., Inorganic, Physical, semester II) (As per CHE 107.2.0)	a
Total		17

SECOND YEAR
Semester I

FST 252 1.0	Computer Applications for Food Sciences II	c
FST 284 1.0	Statistics for Food Sciences I	c
FST 256 1.0	Management for Food Sciences	c
FST 281 2.0	Food Preservation Technology	c
FST 278 1.0	Applied Food Physics	c
FST 285 2.0	Food Microbiology (Based on FST 372 1.0)	c
FST 286 1.0	Analytical Microbiology (Based on FST 369 1.0)	c
FST 283 1.0	Food Resources III	c
FST 270 1.0	Applied Human Nutrition	c
FST 293 1.0	Food Science and Technology Practical III – Food Preservation and Microbiological Aspects	a
FST 297 0.0	#Student Portfolio	c
FST 273 1.0	Environmental Management and Water Quality Assurance	c
FST 289 1.0	Pest Management of Food Crops I (As per ZOO 338 1 0)	c
FST 262 1.0	Electrochemistry (As per CHE 204 1.0)	c
FST 271 1.0	Concepts in Inorganic Chemistry II (As per CHE 211 1.0)	c
Total		16

SECOND YEAR
Semester II

FST 254 1.0	Computer Applications for Food Sciences III	c
FST 294 1.0	Statistics for Food Sciences II	c
FST 257 1.0	Food Business Management I	c
FST 279 1.0	Unit operations in Food Processing	c
FST 291 1.0	Pest Management of Food Crops II (As per ZOO 339 1 0)	c
FST 292 1.0	Bakery Science	c
FST 296 1.0	Food Science and Technology Practicals IV - Postharvest Management and Applications of Food Chemistry	a
FST 266 1.0	Postharvest Management of Plant Commodities	c
FST 267 1.0	Postharvest Management of Animal Commodities	c
FST 268 1.0	Dietetics or (FST 269 1.0) Inland Fishery (As per AQS- 202 1.0)	c
FST 290 2.0	Food Chemistry (Based on FST 360 2.0)	c
FST 260 1.0	Chemistry of Coordination Compounds (As per CHE 202 1.0)	c
FST 264 1.0	Chemical Kinetics (As per CHE 206 1.0)	c

Course Type

-a-
compulsory

-c-
core

-*-
course units are interconnected.

Course Type

-a-
compulsory

-c-
core

-*-
course
units are
interconnected

#FST 298 0.0	Student Portfolio	c
FST 261 1.0	Organic Spectroscopy (As per CHE 203.1.0)	c
FST 295 2.0	Chemistry Practicals (Based on CHE 209.2.0)	a
Total		17

THIRD YEAR
Semester I

FST 354 1.0	Statistics for Food Sciences III	c
FST 352 1.0	Computer Applications for Food Technology and Nutrition I	c
FST 356 1.0	Food Business Management II	c
FST 378 2.0	Food Engineering	c
FST 368 2.0	Emerging Food Technologies and Biotechnology	c
FST 379 1.0	Technology and Engineering for Food Industry	c
FST 361 1.0	Food Analysis and Food Structures	c
FST 370 1.0	Food Safety and Regulations	c
FST 371 2.0	Food Crop and Animal Technology	c
FST 376 2.0	Food Quality Management	c
#FST 398 0.0	Student Portfolio	c
FST 355 1.0	Animal Feed Technology or (FST 375 1.0) Cleaner production	o
FST 377 1.0	Hospitality Management or (FST 390 1.0) Agroforestry and Social Forestry (As per FES 311 1.0)	o
FST 393 1.0	Food Science and Technology Practical V – Proximate Composition of Foods	a
Total		17

THIRD YEAR
Semester II

FST 357 1.0	Food Business Management III	c
FST 353 1.0	Computer Applications for Food Technology and Nutrition II	c
FST 358 1.0	Food Marketing	c
FST 362 1.0	Sensory Analyses	c
FST 363 1.0	Statistics for Food Sciences IV	c
FST 388 1.0	Confectionery Technology	c
FST 381 1.0	Dairy Processing and Packaging	c
FST 387 1.0	Fats and Oil Technology	c
FST 382 1.0	Fish and Meat Technology	c
FST 383 1.0	Grain Technology	c
FST 384 1.0	Fruits and Vegetables Processing Technology	c

FST 385 1.0	Root crops Herbs and Condiments Processing and Technology	c
FST 389 1.0	Beverage Technology	c
FST 394 2.0	Food Science and Technology Practical VI - Product Technology	a
FST 397 1.0	Food Packaging	c
#FST 399 00	Student Portfolio	c
FST 360 2.0	Social Mobilization	c
Total		18

FOURTH YEAR
Semester I

*FST 494 2.0	Advanced Topics in Food Technology	c
FST 491 2.0	Industrial Feasibility	c
FST 493 0.0	Research and Communication	c
FST 473 1.0	Consumer Behaviour and Food Choices (Based on FST 373 1.0)	c
*FST 492 2.0	Seminar (Related to the research to be conducted)	c
*FST 496 5.0	Industrial / Research / Field placement	a
#FST 497 0.0	Student Portfolio	c
Total		12

FOURTH YEAR
Semester II

*FST 496 8.0	Graduate Research Project	a
FST 495 0.0	Scientific Information Management and Communication	c
FST 489 2.0	Innovative Entrepreneurship	c
Total		10

* - Course units are interconnected.

Total number of Credit Units a student should offer to become eligible for the award of the B.Sc. degree in Food Science and Technology - 120

#The student portfolio (SP) is a purposeful collection of student work that exhibits students' efforts, progress and achievement in the areas of Food Science and Technology he/she learns. The SP consists of elements of both Growth and Best Work Portfolios. Students can reflect on their progress on acquiring knowledge and skills and developing attitudes that are directly and indirectly related to the FST programme which help the students to become prospective graduates at large.

Course Type

-a-
compulsory

-c-
core

-*-
course
units are
interconnected

Course Type

-a-
compulsory

-c-
core

-*-
course
units are
interconnected

B. Sc. (General) Degree Course Units

Each student should take course units having a minimum cumulative credit value of 90.0

FIRST YEAR
Semester I

FSC 121 1.0	Food Resources I
FSC 111 1.0	Principles of Management
FSC 122 2.0	Introduction to Food Crop and Animal Technology
FSC 191 1.0	Practicals - Characteristics of Major Food Constituents and Ingredients

FIRST YEAR
Semester II

FSC 112 1.0	Food Business Management I
FSC 131 1.0	Basics of Biochemistry
FSC 123 1.0	Food Resources II
FSC 141 1.0	Fundamentals of Human Nutrition
FSC 192 1.0	Practicals - Functional Properties of Food Ingredients

SECOND YEAR
Semester I

FSC 221 1.0	Food Resources III
FSC 203 1.0	Applied Food Physics
FSC 251 2.0	Food Preservation Technology
FSC 291 1.0	Practicals - Chemical Analysis of Foods

SECOND YEAR
Semester II

FSC 231 2.0	Food Chemistry
FSC 211 1.0	Food Business Management II
FSC 252 1.0	Postharvest Management
FSC 292 1.0	Practicals - Postharvest Handling and Preservation of Foods

THIRD YEAR
Semester I

FSC 361 1.0	Food Safety and Regulations
FSC 332 1.0	Food Analysis and Food Structures
FSC 363 1.0	Microbiology of Foods
FSC 353 1.0	Food Packaging
FSC 391 1.0	Practicals - Microbiology of Foods and Nutritional Status

THIRD YEAR
Semester II

FSC 362 1.0	Food Biotechnology
FSC 395 1.0	Seminar

Optional course

FSC 371 1.0	Fish & Meat Technology
FSC 372 1.0	Dairy Technology
FSC 373 1.0	Fruits and Vegetables Processing Technology
FSC 392 1.0	Pacticals - Proximate Analysis

Course Type

-a-
compulsory

-c-
core

-*-
course
units are
interconnected



ICH

Industrial Chemistry

Offered by the Department of Chemistry

"Industrial Chemistry is the link between academic research and industrial scale physical and chemical processes which transform raw materials into products that are beneficial to mankind."

B.Sc. (Hons) Degree in Industrial Chemistry

Course code: ICH

Duration: 4 years

For whom?

The main objective of the B.Sc. (Hons) degree in Industrial Chemistry program is to prepare the prospective students as industrial chemists and introduce them to the basic attitudes and skills that would be required for their work in industry.



Career opportunities

The B.Sc. (Hons) Degree in Industrial Chemistry, offered by the Department of Chemistry is aimed at training professionals in the field of chemistry to develop skills required of chemists who will be working in industry. The strong foundations laid by the program would enable the students to seek employment at industries as R&D manager, bench scientist, technical support specialist, or in quality control/quality assurance work. In addition to that, students also can acquire postgraduate qualifications from recognized universities which would lead to a career path in academia in universities and other institutions.

Course overview

The courses offered in the industrial chemistry honors degree program play an important role in the development of skills required of chemists who intended to be working in industry. In this regard, all courses are designed to bridge the industry-academia skill gap and also introduce more applied chemistry into the degree program in addition to the courses that offer fundamentals of chemistry.

Course structure

The industrial chemistry honors degree students in their third year follow advanced theoretical courses in the core subject areas: organic, inorganic, physical and analytical chemistry, while forth year students follow applied chemistry courses designed to address the needs of modern knowledge-based industries. Students in the fourth year are also required to carry out an industrial process oriented research project. The research project helps the students to apply their chemistry knowledge to industrial processes. In addition, students enhance their scientific reasoning, research and analytical skills which prepare them to become chemists who have a good understanding of both chemistry and chemical engineering concepts. At the end of the research project, a dissertation is submitted for assessment, which is evaluated after an oral presentation followed by a *viva voce* examination.

Selection

Selection of the students to follow the B.Sc. (Hons) degree in industrial chemistry is based on the student performance in the first two academic years. The intake is typically limited to a maximum of 10 students.

Mode of instruction and assessment

The modules include lectures, tutorials, laboratory practical, industrial visits and individual and group projects and assignments. They are assessed through end-of-semester written examinations, practical tests, presentations and reports. There is an emphasis of analysis of real industrial problems to reinforce learning. For the practical class, assessment will include attendance, record book and a practical exam. A minimum of 80% attendance will be an essential requirement for completing the practical component.

For further information please contact:

Dr. A. T. Cooray,
Course coordinator
Email: atcooray@sjp.ac.lk

B.Sc. (Hons) Degree Course Units

FIRST YEAR

Semester I

ICH 110 1.0	Concepts in Inorganic Chemistry I	c
ICH 108 1.0	Organic Chemistry I	c
ICH 112 1.0	Main Group and Transition Elements	c
ICH 106 1.0	Structure and Properties of Matter	c
ICH 107 2.0	Practicals (Semester I and II)	a

Semester II

ICH 111 2.0	Introduction to Analytical and Nuclear Chemistry	c
ICH 109 1.0	Organic Chemistry II	c
ICH 103 1.0	Chemical Thermodynamics	c
ICH 107 2.0	Practicals (Semester I and II)	a

SECOND YEAR

Semester I

ICH 204 1.0	Electrochemistry	c
ICH 208 1.0	Quantum Chemistry	c
ICH 205 1.0	Chemistry of Heterocyclic and Bioorganic Compounds	c
ICH 211 1.0	Concepts in Inorganic Chemistry II	c
ICH 209 2.0	Practicals (Semester I and II)	a

Semester II

ICH 207 1.0	Phase Equilibria and Surface Chemistry	c
ICH202 1.0	Chemistry of Coordination Compounds	c
ICH 203 1.0	Organic Spectroscopy	c
ICH206 1.0	Chemical Kinetics	c
ICH 209 2.0	Practicals (Semester I and II)	a

Course Type

-a-
Compulsory

-c-
core

-o-
optional

-a-
Compulsory

-c-
core

-o-
optional

THIRD YEAR

Semester I

ICH 351 1.0	Biochemistry for Industry I - Bioinformatics	c
ICH 352 1.0	Biochemistry for Industry II - Structural and Industrial Biochemistry	c
ICH 353 1.0	Biochemistry for Industry III - Industrial Biotechnology	c
ICH 354 1.0	Physical Chemistry for Industry I - Chemical Thermodynamics	c
ICH 355 1.0	Physical Chemistry for Industry II - Solid State Chemistry	c
ICH 356 1.0	Statistical Methods and Applications	c
ICH 357 1.0	Industrial Electrochemistry	c
ICH 358 2.0	Organic Chemistry for Industry I - Physical Organic Chemistry	c
ICH 359 1.0	Current Trends in Green Chemistry	c
ICH 360 1.0	Spectroscopic Methods, Instrumentation and Applications I	c
ICH 361 1.0	Industrial Impact on the Environment	c
ICH 362 1.0	Inorganic Chemistry for Industry - Catalysts and Catalyst Design	c
ICH 371 4.0	Industrial Chemistry Practical Course (Semester I and II)	a

Semester II

ICH 363 2.0	Organic chemistry for Industry II - Organic Synthesis and Applications	c
ICH 364 1.0	Spectroscopic Methods, Instrumentation and Applications - II	c
ICH 365 1.0	Spectroscopic Methods, Instrumentation and Applications - III	c
ICH 366 2.0	Analytical Chemistry for Industry I - Chromatographic Techniques	c
ICH 367 2.0	Analytical Chemistry for Industry II - Microscopic and scattering techniques	c
ICH 368 1.0	Physical Chemistry for industry III - Chemical Kinetics	c
ICH 369 2.0	Food Chemistry and Technology	c
ICH 370 2.0	Molecular Modeling and Computer Aided Drug Designing	c
ICH 371 4.0	Industrial Chemistry Practical Course (Semester I and II)	a

FOURTH YEAR

Semester I

ICH 451 1.0	Industrial Minerals I - Metallurgy	o
ICH 452 1.0	Industrial Minerals II - Gemology	o
ICH 453 1.0	Industrial Minerals III - Ceramics and Glass	o
ICH 454 1.0	Polymer Chemistry[#]	o
ICH 455 2.0	Industrial Waste Management	o
ICH 456 1.0	Rheology and Fluid Dynamics	o
ICH 457 1.0	Alternative Energy Sources and Energy Storage Devices	o
ICH 458 1.0	Quality Assurance and Accreditation	o
ICH 459 1.0	Nanotechnology and Applications in Industry	o
ICH 460 1.0	Medicinal Chemistry	o
ICH 461 1.0	Materials and Processing I - Paint and Coatings	o

Semester II

ICH 462 1.0	Materials and Processing II - Inorganic Polymeric Materials	o
ICH 463 1.0	Materials and Processing III - Engineering Plastics	o
ICH 464 1.0	Materials and Processing IV - Rubber and Latex Technology	o
ICH 465 1.0	Materials and Processing V - Fabric Preparation and Finishing	o
ICH 466 1.0	Fuel and Lubricant Technology	o
ICH 467 2.0	Fundamentals of Process Engineering	o
ICH 468 2.0	Petroleum Chemistry and Petrochemical Industry	o
ICH 469 1.0	Industrial Management and Marketing	o
ICH 470 1.0	Industrial Utilization of Medicinal and Aromatic Plants	o
ICH 471 1.0	Fundamentals of Agrochemistry and Agrochemical Industry	o
ICH 472 1.0	Polymer Blends and Composites	o
ICH 473 8.0	Industry Based Research Project and Industrial Visits (Semester I and II)	a

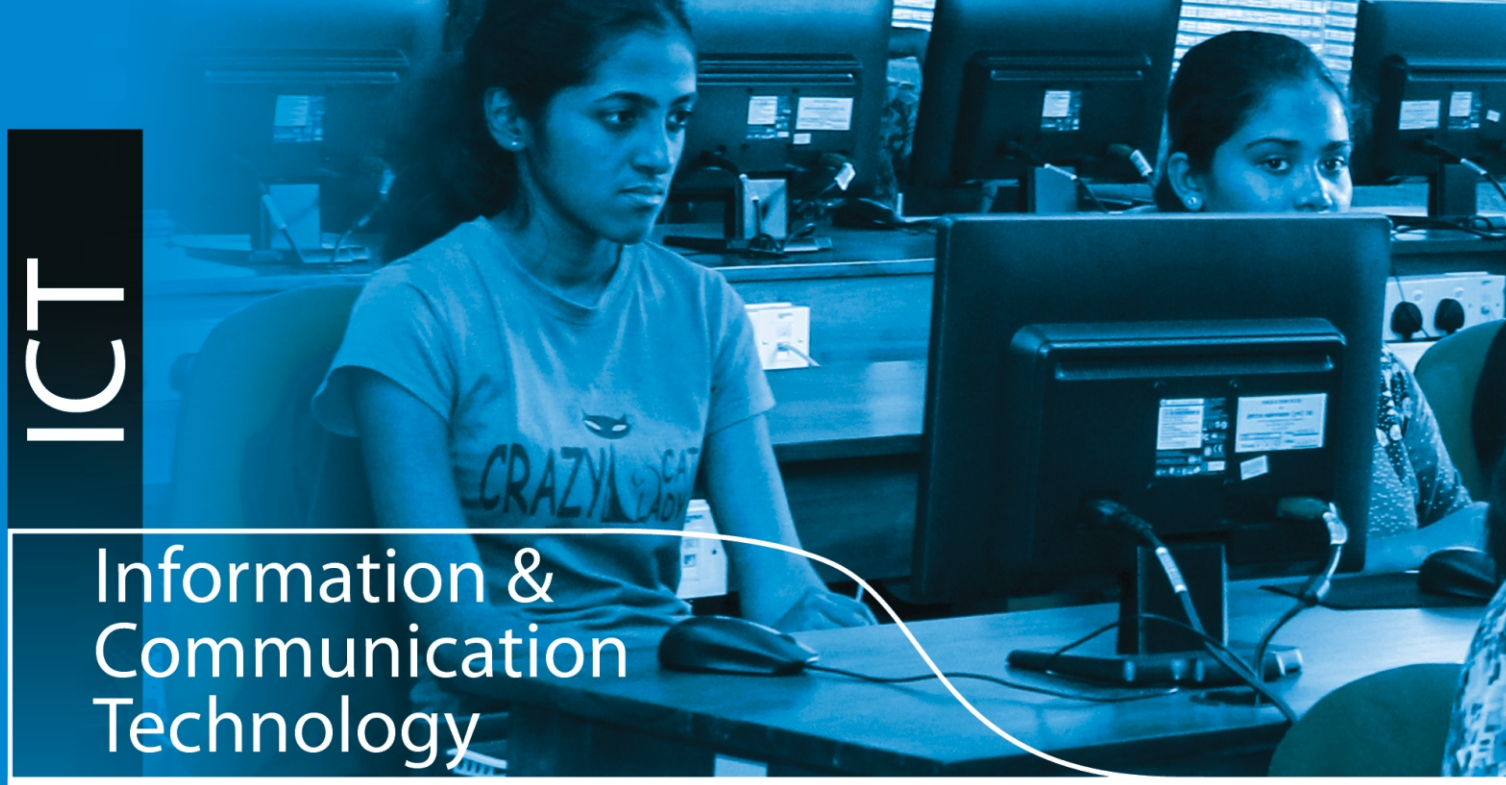
Course Type

-a-
Compulsory

-c-
core

-o-
optional

-#-
Students who have followed Polymer science and technology as a subject in the first two years are not allowed to follow this course.



ICT

Information & Communication Technology

Offered by the Department of Computer Science

"Information and Communication Technology stresses on unified communication and integrating telecommunication devices, computers and software, all of which allow users to access, store, transmit and manipulate information"

B.Sc. (General) Degree Program with Information and Communication Technology (ICT)
Course Code: ICT - Duration: 3 Years
Subject Combinations: Refer pages 247-248

For whom?

Physical Science Students who are selected by the University Grants Commission (UGC) through a special window. The intake is limited to a maximum of 50 students per academic year.

Career opportunities

The business enterprises that use computers on a large scale – such as banks, insurance companies, the electronics industry, central and local government, and management offer employment opportunities to graduates with ICT skills. Graduates spend their time on software development, computer systems support and business environment.



Course overview

Learning ICT is about understanding computer systems and applying them when seeking automated solutions. This includes both software and all its related hardware. This course concentrates on creating links between theory and practice. It covers a wide variety of software technologies and their applications. Students are introduced to a range of programming paradigms, including procedural programming, object oriented and web programming. Other disciplines such as software engineering, net centric computing and enterprise computing are also covered. The syllabus offered by the department covers a vast area of the subject and is revised regularly to include the most recent developments.

Course structure

ICT will constitute one third of the B.Sc. (General) degree program in allowed subject combinations. Students are required to take core course units in ICT having a minimum cumulative credit value of 27.0. These course units are designed to provide students with essential knowledge in theory, practice and skills that are required in ICT industry.

Mode of instruction and assessment

Students will be taught by academic staff with good track records. The medium of instructions is English. The course units include; lectures, assignments, individual/group projects and laboratory practical. They are assessed through continuous assessments, end of semester written examinations, practical examinations, presentations and reports.

For further information please contact:

Mr. D.D.A. Gamini,

Head/Department of Computer Science
E mail: gamini@dscs.sjp.ac.lk

Course Type

-c-
core

-o-
optional

B. Sc (General) Degree Course Units

Each student should take course units having a minimum cumulative credit value of 27.0

FIRST YEAR

Semester I

ICT 105 1.5	Computer Architecture	c
ICT 106 1.5	Fundamentals of Computer Programming	c
ICT 107 1.0	Computer Programming - Laboratory I	c
ICT 108 1.0	Software Engineering I	c

Semester II

ICT 129 2.0	Object Oriented Programming	c
ICT 130 1.0	Computer Programming - Laboratory II	c
ICT 131 2.0	Software Engineering II	c

SECOND YEAR

Semester I

ICT 204 2.0	Data Structures and Algorithms	c
ICT 205 1.5	Operating Systems	c
ICT 206 1.5	Database Systems and Administration	c

Semester II

ICT 229 2.0	UI & UX Design	c
ICT 230 1.5	Networking and System Administration	c
ICT 231 1.5	Visual Programming	c

THIRD YEAR

Semester I

ICT 304 1.5	Multimedia Technologies	c
ICT 305 2.0	Embedded Systems	c
ICT 306 1.5	Mobile Technologies and Application Development	o

Semester II

ICT 330 2.0	Software Architecture and Design	c
ICT 331 1.5	Software Quality Assurance	c
ICT 332 1.5	Human Computer Interaction	o
ICT 333 1.5	Data Mining and Data Warehousing	o
ICT 334 2.0	Project (Individual/Group)	o



MAN

Management Science

Offered by the Department of Mathematics

"Management Science involves developing and applying models and concepts to understand and solve managerial problems"

B.Sc General Degree Programme with Management Science
Course Code : MAN

Duration : Three Years
Subject combinations: Refer pages 247-248

For whom?
Management science study stream can be selected by both physical science and bio-science stream students who are interested in enhancing their capabilities in management and administration of business organizations.

Career opportunities
Individuals are taught how to work with a team in order to achieve some pre-defined goals and targets of the respective organizations utilizing human resources, financial resources, natural resources and technological resources. Following the course will offer graduates excellent career opportunities in different fields of management including accounting, banking, finance, international business, human resources and marketing.

Course overview
Management science course units offered in our faculty may provide an applied approach to understanding business and management and the context in which they operate. This programme further offers students a wide range of management stream subject areas whilst requiring them to carry-out researches relating to course areas to enhance their knowledge on business world. We believe that the flexibility and academic rigour of this degree will make it very attractive to students and employers which enable students to exploit most of their strengths and interests.

Course structure
The management science course units focus on the study of key disciplines, such as Management Processes, Economics, Statistics, Operations Research, Forecasting, Marketing and Organizational Behaviour. Of the total of 31 credits, a cumulative credit value of 27 is required to be completed at the end of 3rd year. This include compulsory and optional course units.

Mode of instruction and assessment
The Faculty of Management Studies and Commerce render their expertise and support to conduct the lecture series. Management Science uses higher-order assessment activities which include interactive learning sessions, tutorials, end semester examinations and individual and group assignments to better reflect what undergraduate students can really do to demonstrate their learning growth. These assessments may test cognitive processing skills of students with regard to task-based problem-solving and decision making skills.

For further information please contact:
Mr. Kapila Silva
Course Coordinator
E mail: kap@sjp.ac.lk

B.Sc. (General) Degree Course Units

Each student should take course units having a minimum cumulative credit value of 27.0

FIRST YEAR

Semester I

MAN 102 2.0	Principles of Micro Economics	c
MAN 103 1.0	Methods of Operational Research I	c
MAN 104 2.0	Management Process	c

Semester II

MAN 126 2.0	Principles of Macro Economics	c
MAN 128 1.0	Introduction to Statistics	c
MAN 129 2.0	Introduction to Entrepreneurship	c

SECOND YEAR

Semester I

MAN 201 2.0	Introduction to Human Resource Management	c
MAN 202 2.0	Methods of Operational Research II	c
MAN 203 1.0	Fundamentals of Accounting for Business	c

Semester II

MAN 226 2.0	Introduction to Organizational Behaviour	c
MAN 227 2.0	Statistical Quality Control & Industrial Statistics	c
MAN 228 1.0	Business Law	c

THIRD YEAR

Semester I

MAN 301 2.0	Fundamentals of Marketing	o
MAN 302 2.0	Forecasting	o
MAN 303 1.0	MIS and Accounting Information Systems for Managers	o

Semester II

MAN 326 1.0	Production Control	o
MAN 327 2.0	Microcomputers and their Application	o
MAN 328 2.0	Research Methodology	o
MAN 308 1.0	Intellectual Property (IP)	o

Course Type

-c-
core

-o-
optional

-e-
Elected



MAT

Mathematics

Offered by the Department of Mathematics

"Mathematics is the Queen of modern science and is an efficient source of useful concepts and tools that are used to understand reality"

B.Sc. (General) Degree with Mathematics
Course Code: (MAT)
Duration : Three Years
Subject combinations: Refer pages 247-248

For whom?

Students from physical science stream who are interested in science and technology-oriented careers with sharp logical thinking skills in Mathematics.

Career opportunities

Mathematics has now found an increasingly significant influence in many diverse fields, from management to medicine. Mathematics related professionals are in high demand worldwide in various capacities in academic institutes, research institutes and engineering and technical sectors.



Course overview

Scientific and industrial progress in recent years has made Mathematics one of the most important subjects of our time. An undergraduate degree in Mathematics will open the way to a future filled with wide opportunities for jobs and professions. Furthermore, Mathematics alone will enable a person to make a positive contribution to the society. Mathematics is, in addition to being the language of science in its own right, a way of logical thinking rather than rules and regulations.

Course structure

Mathematics offered as one of the three subjects for B.Sc. (General) degree in a permitted subject combination for physical science students. This contains compulsory and optional course units which are designed to provide required knowledge of main areas of Mathematics such as Algebra, Analysis, Calculus and so on. Further, due to the high demand for computational mathematics, the department has introduced a practical component to most of the Mathematics course units in the department with the students having access to a well-equipped computer laboratory. Also the department offers a basic Mathematics course for the biological students.

BSc (Special) Degree in Mathematics
Duration: 4 years

For whom?

This degree is aimed at students who wish to grasp the key aspects of Mathematics and who wish to study Mathematics in depth.

Career opportunities

A special degree in Mathematics enables graduates to find employment as professionals in academic institutes, research personnel, experts in engineering and technical sector, actuarial scientists and statisticians.

Course overview

The special degree offers students a great opportunity to assess the concepts of mathematics. The department has also introduced a practical component to most of the Mathematics course units with the students having access to a well-equipped computer laboratory. The special degree offers an industrial training for a fixed duration which will give students an exposure to the world of Mathematics outside the academia and also offers an opportunity to study one of the areas in Mathematics intensely as the final project under the supervision of lecturers in the department. Improvement of presentation skill of students is targeted through some of the courses.

Selection

Promising students are selected for the B.Sc. (Special) degree in Mathematics at the end of the second year, based on their performance in Mathematics courses, with an acceptable level of performance in other two subjects.

Awards

Deparment awards Dr. Sirimathi Wewala Memorial scholarship for obtaining highest performance (GPA) for Mathematics special degree at the end of the 3rd year, Dr. Sirimathi Wewala Memorial gold medal for obtaining a first class with highest performance (GPA) for a Mathematics spacial degree at the end of the 4th year and Dr. Sunethra Weerakoon gold medal for obtaining a first class pass with best performance in Mathematics at the B.Sc. (Special) degree in Mathematics.

Instruction and assessment

Please refer pages 253 - 258 for necessary information.

For further information please contact:

Mr. K.K.W.A.S. Kumara
Head/Department of Mathematics
E mail: sarath@sjp.ac.lk

B.Sc. (General) Degree Course Units

Each student should take course units having a minimum cumulative credit value of 27.0

FIRST YEAR

Semester I

MAT 111 2.0	Fundamentals of Logic and Set Theory	c
MAT 112 2.0	Differential Equations	c
MAT 113 1.0	Complex Numbers and Vectors	c
MAT 119 0.0	Mathematical Software I	c
MAT 114 1.0	Basic Mathematics	*

Semester II

MAT 121 2.0	Linear Algebra I	c
MAT 122 2.0	Calculus	c
MAT 123 1.0	Vector Calculus	c
MAT 129 0.0	Mathematical Software II	c

SECOND YEAR

Semester I

MAT 211 1.0	Linear Algebra II	c
MAT 212 2.0	Real Analysis I	c
MAT 213 2.0	Numerical Methods	c

Semester II

MAT 221 2.0	Functions of Several Variables	c
MAT 222 2.0	Partial Differential Equations	c
MAT 223 1.0	Basics of Number Theory	c

Course Type

-c-
core

-o-
Optional

-* -
optional for those who did not take Combined Mathematics as a subject in Advanced Level

- c*-
Those who are doing Computer Science as a subject are not allowed to do this course unit.

Course Type

-c-
core

-o-
Optional

-* -
optional for those who did not take Combined Mathematics as a subject in Advanced Level

- c*-
Those who are doing Computer Science as a subject are not allowed to do this course unit.

THIRD YEAR

Semester I

MAT 311 2.0	Complex Analysis	c
MAT 312 2.0	Computer Programming	c*
MAT 313 1.0	Introduction to History of Mathematics	c
MAT 314 1.0	Teaching and Learning Methodologies in Mathematics	o
MAT 315 2.0	Boolean Algebra and Switching Circuits	o

Semester II

MAT 321 2.0	Abstract Algebra	c
MAT 322 2.0	Differential Geometry	c
MAT 323 1.0	Optimization	o
MAT 324 1.0	Mathematical Modeling I	o

Special Degree Course Units

Part I

Semester I

MAT 351 3.0	Group Theory	c
MAT 352 2.0	Number Theory	c
MAT 353 3.0	Graph Theory	c
MAT 354 3.0	History of Mathematics	c
MAT 355 2.0	Boolean Algebra and Switching Circuits	c
MAT 356 2.0	Applicable Mathematics	o
MAT 357 2.0	Operational Research I	o

Semester II

MAT 375 3.0	Ring Theory	c
MAT 376.3.0	Real Analysis II	c
MAT 377 3.0	Complex Variables	c
MAT 378 2.0	Object Oriented Programming	c*
MAT 379 2.0	Industrial Training	c

Semester II

MAT 380 0.0	Seminar / Report Writing	c
MAT 381 2.0	Rotational Systems	o
MAT 382 2.0	Topology	c
MAT 383 2.0	Mathematical Modeling II	o
MAT 386 2.0	Actuarial Science	o

Part II

Semester I

MAT 451 3.0	Fields and Galois Theory	c
MAT 452 3.0	Measure Theory	c
MAT 453 3.0	Optimization	c
MAT 454 2.0	Computational Mathematics	c
MAT 499 4.0	Project	c

Semester II

MAT 476 3.0	Functional Analysis	c
MAT 477 2.0	Module Theory	c
MAT 478 2.0	Category Theory	o
MAT 479 2.0	Geometrical Transformations	o
MAT 480 2.0	Representation Theory	o
MAT 481 2.0	Data Analysis and Preparation of Reports	o
MAT 482 2.0	Statistical Modeling	o
MAT 483 2.0	Combinatorics	o
MAT 499 4.0	Project	c

Course Type

-c-
core

-o-
Optional

-* -
optional for those who did not take Combined Mathematics as a subject in Advanced Level

- c*-
Those who are doing Computer Science as a subject are not allowed to do this course unit.



MBL

Microbiology

Offered by the Department of Botany

"Microbiology is an applied science that investigates and harnesses the industrial potential of microscopic organisms for a wide-spectrum of beneficial applications in agriculture, medicine and related fields such as the environment and food industry"

B.Sc. (General) Degree Programme with Microbiology

Course code: MBL - Duration: 3 Years

Subject combinations: Refer pages 247-248

For whom?

Biological science stream students who are interested in pursuing careers in academic, technological, industrial or environmental organizations. The intake is limited to a maximum of 60 students in an academic year. Minimum number for the course is 20 in an academic year.

Career opportunities

The spectrum of jobs available for microbiology graduates include employment in fields such as, quality assurance, environmental surveillance and monitoring, food and beverage industries, research, secondary school teaching, veterinary sciences, biofertilizer industry and agriculture, crop protection and medicine and the pharmaceutical industry.

Course overview

Microbiology is a far more exciting area of science as it investigates the unseen world around us. Although it is a very broad subject, throughout much of its history microbiology focused on three areas, fermentation, food and medicine. Manipulation of genetic information of microbes for the large-scale production of beneficial products including antibiotics,



alcoholic beverages, biological catalysts and hormones, has unleashed the potential of microorganisms to transform basic substrates to invaluable yields of products, within the realms of medicine, agriculture and industrial applications.

The discipline microbiology, which was originally heavily dependent on the culture of microorganisms, has evolved with the advent of time, to incorporate molecular biology and genomics techniques for the identification and characterization of individual microorganisms from microbial assortments found within diverse ecological niches. In spite of the advances made in applied microbiology in the last two decades, the field of microbiology is largely an untapped discipline with virtually unlimited potential as many microbes are yet to be discovered and studied.

Course structure

The subject Microbiology constitutes one third of the B. Sc. (General) degree program in an allowed subject combination. All students who wish to offer microbiology will have to follow common compulsory and core course units during the first three semesters of the degree programme prior to the selection of microbiology as their chosen field of study. At the end of three years, total credit value gained by a student who has opted for general degree following a particular course should not be less than 27.0. A student can also opt for a special degree spending an additional year offering more advanced areas pertaining to respective subjects they have selected.

B.Sc. (Special) Degree Programme in Microbiology
Duration: 4 Years

Career opportunities

The career opportunities available for graduates of the Special Degree Program in Microbiology, will be centered on academia as well as practicing their trade as researchers in a diverse range of hierarchical positions undertaking in depth studies on contemporary research topics with the objectives of bridging gaps in knowledge and unraveling un-investigated areas of Applied Microbiology.

Course overview

The department offers special degree programs in Microbiology for a few students with the intention of producing graduates having an in-depth knowledge, better skills and competent in handling various aspects of the subject selected. The core curriculum of the special degree program is designed to provide advanced knowledge in the subject and simultaneously to impart hands-on experience in the world of work through an industrial training program in a government research institute or in a private sector organization for a short period of time. The final year research project assists students to improve problem solving ability, critical thinking, and time management, thereby preparing them to become professionals.

Selection

Selection of students to follow a special degree in Microbiology is based on their performance during the first two academic years. The intake is limited to a maximum of 10 students per course.

Instruction and assessment

Through the knowledge and experience of academic staff of the Department of Botany and of visiting staff, we endeavor to expose students to a range of teaching and learning activities, based on the course units identified under each of the subjects offered by the department. The modules conducted include lectures, laboratory practical classes, tutorials, field classes, individual and group assignments / projects. Majority of these modules are assessed through semester end theory examination, practical examination, presentations and reports/ theses, while a few are assessed continuously.

For further information please contact:

Dr. P. N. Dasanayake
Head/Department of Botany
E mail: nilanthiedas@sjp.ac.lk

B. Sc. (General) Degree Course Units

Each student should take course units having a minimum cumulative credit value of 27.0

FIRST YEAR

Semester 1

PBL/PBT/MBL	121 2.0	Cell Biology & Fundamentals of Plant Biochemistry	c
PBL/PBT/MBL	122 2.0	Plant Diversity & Systematics	c
PBL/PBT/MBL	131 1.0	Practical Module I	a

Semester 11

PBL/PBT/MBL	123 1.0	Principles of Ecology	c
PBL/PBT/MBL	124 1.0	Plant Development & Propagation	c
PBL/PBT/MBL	125 1.0	Plant Structure & Function	c
PBL/PBT/MBL	126 1.0	Classical Genetics	c
PBL/PBT/MBL	132 1.0	Practical Module II	a

SECOND YEAR

Semester 1

PBL/PBT/MBL	221 2.0	Bioenergetics and Plant Metabolism	c
PBL/PBT/MBL	226 1.0	Microbial Life I	c
PBL/PBT/MBL	227 1.0	Microbial Life II	c
PBL/PBT/MBL	231 1.0	Practical Module II	a

Semester I1

MBL	223 1.0	Microbial Genetics	c
MBL	224 1.0	Fundamentals of Genetic Manipulation of Microorganisms	c
MBL	228 1.0	Phytopathogenic Microorganisms I	c
MBL	229 1.0	Phytopathogenic Microorganisms II	c
MBL	232 1.0	Practical Module II	a

THIRD YEAR

Semester I

MBL	321 1.0	Soil and Agricultural Microbiology	c
MBL	322 1.0	Industrial Microbiology	c
MBL	323 1.0	Food and Dairy Microbiology	c
MBL	328 1.0	Extremophiles	c
MBL	331 1.0	Practical Module I	a

Semester I1

MBL	324 1.0	Medical Microbiology	o
MBL	325 1.0	Fermentation Technology and Downstream Processing	o
MBL	326 1.0	Industrial Management	c
MBL	327 1.0	Bioinformatics and Molecular Modeling	c
MBL	332 1.0	Practical Module II	a

Course Type

-a-
compulsory

-c-
core

-o-
optional for all those doing Plant Biotechnology

-s -
optional for all students in the faculty (Students should get the approval of the Head of the Department before commencement of lectures)

Course Type

-a- compulsory

-c- core

-o- optional for all those doing Plant Biotechnology

-s - optional for all students in the faculty (Students should get the approval of the Head of the Department before commencement of lectures)

Microbiology

THIRD YEAR **(Special Part I)**

Semester I

MBL 380 2.0	Microbial Ecology	c
MBL 381 2.0	Microbial Systematics	c
MBL 385 4.0	Seminar	c
MBL 388 1.0	Immunology	c
MBL 389 2.0	Advanced Industrial Microbiology	c
MBL 392 1.0	Genome Mapping	c

Semester I1

MBL 382 2.0	Microbes in Pest Management	c
MBL 383 1.0	Microbial Biochemistry	c
MBL 385 4.0	Seminar	c
MBL 386 1.0	Laboratory Techniques	c
MBL 387 2.0	Biostatistics and Computer Applications	c
MBL 391 1.0	Literature Survey and Assignments	c
MBL 393 1.0	Advanced Mycology	c

FOURTH YEAR **(Special Part II)**

Semester I

MBL 480 1.0	Bioprospecting	c
MBL 481 8.0	Research Project on Microbiology	c
MBL 482 2.0	Advanced Microbial Genetics	c
MBL 486 1.5	Modern Genetics	c
MBL 489 1.0	Bioethics & Biosafety	c
MBL 488 1.5	Optical Microscopy	c
MBL 491 2.0	Standardization & Quality Management	c
MBL 495 2.0	Postharvest Pathology	c

Semester I1

MBL 481 8.0	Research Project on Microbiology	c
MBL 483 2.0	Advanced Plant Pathology	c
MBL 484 2.0	Advanced Plant Virology	c
MBL 485 2.0	Microbial Enzymes in Biotechnology	c
MBL 493 2.0	Environmental Microbiology	c
MBL 494 1.0	Product Development & Marketing Management	c
MBL 496 2.0	Plant Quarantine	c



PBT

Plant Biotechnology

Offered by the Department of Botany

"Plant Biotechnology is an applied science that is centered on harnessing benefical genes from plants to produce a host of helpful functions for human well-being"

B.Sc. (General) Degree Programme with Plant Biotechnology
Course code: PBT

Duration: 3 Years
Subject combinations: Refer pages 247-248

For whom?

Biological science stream students who are interested in pursuing careers in academic, technological, industrial or environmental organizations. The intake is limited to a maximum of 60 students in an academic year. Minimum number for course is 20 in an academic year.

Career opportunities

As the country is forging ahead to be the economic hub of Asia, graduates in Biotechnology will definitely have a variety of rewarding careers in both public and private sector establishments. Qualified biotechnologists are needed across many sectors, including academic, technological, industrial and environmental organizations. In particular, the demand for biotechnology graduates is high within the fields, medicine and agriculture, where the tinkering of genes to maximize the beneficial traits of the gene products, takes precedence. In addition, with the strengthening of the 'transgenic' wave in agriculture, there will be even more opportunities for biotechnology graduates to embark on fruitful careers in the area of contemporary biotechnology.

Course overview

The rapid growth of biological knowledge is placing its prominence among other sciences. Currently there are many real-world problems that entail plants: escalating pressure for food, The need for renewable energy resources, habitat preservation are being driven by the ever growing human population. In order to overcome these problems require detailed knowledge of life's component parts at every level from molecules to ecosystems.

Biotechnology is the practical application of biological science to improve the lives of humans and quality of the environment, by exploiting the potential of biological organisms as 'factories' or 'bio-industrial units' capable of manufacturing invaluable products, including food, pharmaceuticals, nutraceuticals, vaccinations, hormones, enzymes and miscellaneous biological agents. Many of these applications are not new but through the understanding of the genetic code followed by genetic engineering, biotechnology has turned out to be an exciting and fascinating field of science. It is only through Biotechnology that it would be possible to overcome the twenty first century real-world problems.

Course structure

The subject biotechnology constitutes one third of the B. Sc. (General) degree program in an allowed subject combination. All students who wish to offer plant biotechnology will have to follow common compulsory and core course units during the first three semesters of the degree programme prior to the selection of plant biotechnology as their chosen field of study. At the end of three years, total credit value gained by a student who has opted for general degree following a particular course should not be less than 27.0. A Student can also opt for a special degree spending an additional year offering more advanced areas pertaining to respective subject they have selected.

B.Sc. (Special) Degree Programme in Plant Biotechnology
Duration: 4 Years

Career opportunities

The career opportunities available for graduates of the Special Degree Program in Plant Biotechnology, will be centered on academics as well as practicing their trade as researchers in a diverse range of hierarchical positions undertaking in depth studies on contemporary research topics with the objectives of bridging gaps in knowledge and unraveling complex areas of Applied Plant Biotechnology.

Course overview

The department offers special degree programs in Plant Biotechnology for few students with the intention of producing graduates having an in-depth knowledge, better skills and competent in handling various aspects of the subject selected. The core curriculum of the special degree program is designed to provide advanced knowledge in the subject and simultaneously to impart hands-on experience in the world of work through an industrial training program in a government research institute or in a private sector organization for a short period of time. The final year research project assists students to improve on problem solving ability, critical thinking, and time management and there-by prepare them to become professionals.

Selection

Selection of students to follow a special degree in Plant Biotechnology is based on their performance during the first two academic years. The intake is limited to a maximum of 10 students per course.

Instruction and assessment

Through the knowledge and experience of the academic staff of the Department of Botany and of visiting staff, we endeavor to expose students to a range of teaching and learning activities, based on the course units identified under each of the subjects offered by the department. The modules conducted include lectures, laboratory practical classes, tutorials, field classes, individual and group assignments / projects. Majority of these modules are assessed through semester end theory examination, practical examination, presentations and reports/ theses, while a few are assessed continuously.

For further information please contact:

Dr. P. N. Dasanayake
Head/Department of Botany
E mail: nilanthiedas@sjp.ac.lk

Course Type

-a- compulsory

-c- core

-o- optional for all those doing Plant Biotechnology

-s - optional for all students in the faculty (Students should get the approval of the Head of the Department before commencement of lectures)

B.Sc. (General) Degree Plant Biotechnology Course

FIRST YEAR

Semester 1

PBL/PBT/MBL	121 2.0	Cell Biology and Fundamentals of Plant Biochemistry	c
PBL/PBT/MBL	122 2.0	Plant Diversity and Systematics	c
PBL/PBT/MBL	131 1.0	Practical Module I	a

Semester 11

PBL/PBT/MBL	123 1.0	Principles of Ecology	c
PBL/PBT/MBL	124 1.0	Plant Development and Propagation	c
PBL/PBT/MBL	125 1.0	Plant Structure and Function	c
PBL/PBT/MBL	126 1.0	Classical Genetics	c
PBL/PBT/MBL	132 1.0	Practical Module II	a

SECOND YEAR

Semester 1

PBL/PBT/MBL	221 2.0	Bioenergetics and Plant Metabolism	c
PBL/PBT/MBL	226 1.0	Microbial Life I	c
PBL/PBT/MBL	227 1.0	Microbial Life II	c
PBL/PBT/MBL	231 1.0	Practical Module I	a

Semester 11

PBT	223 2.0	Molecular Genetics	c
PBT	224 2.0	Gene Technology	c
PBT	232 1.0	Practical Module II (Including Angiosperm Taxonomy)	a

THIRD YEAR

Semester 1

PBT	321 1.0	Crop Biotechnology	c
PBT	322 1.0	Plant Tissue Culture	c
PBT	329 1.0	Plant Pathology I	c
PBT	328 1.0	Plant Pathology II	c
PBT	331 1.0	Practical Module I	a

Semester 11

PBT	324 1.0	Medical Biotechnology	o
PBT	325 2.0	Industrial Biotechnology	o
PBT	327 1.0	Bioinformatics and Molecular Modeling	c
PBT	332 1.0	Practical Module II	a

Plant Biotechnology and Genatics

THIRD YEAR**(Special Part I)**

Semester I

PBT	380 1.0	Plant Genetic Resources Management	c
PBT	381 1.0	Protein Structure and Function	c
PBT	382 1.0	"Omics" Technology	c
PBT	383 2.0	Genome Mapping	c
PBT	384 2.0	Plant Cell Culture	c
PBT	385 4.0	Seminar	c
PBT	392 1.0	Biotechnology in Floriculture	c

Semester I1

PBT	385 4.0	Seminar	c
PBT	386 1.0	Advanced Microbial Genetics	c
PBT	387 2.0	Biostatistics and Computer Applications	c
PBT	389 1.0	Marine Biotechnology	c
PBT	390 2.0	Advanced Phytotaxonomy	c
PBT	391 1.0	Literature Survey and Assignment	c
PBT	393 1.0	Plant Synhetic Biology	o

FOURTH YEAR **(Special Part II)**

Semester 1

PBT	481 8.0	Research Project on Plant Biotechnology	c
PBT	482 2.0	Advanced Molecular Genetics	c
PBT	483 2.0	Cellular Molecular Biology	c
PBT	485 2.0	Advanced Plant Tissue Culture	c
PBT	488 2.0	Plant Breeding	c
PBT	489 1.0	Bioethics and Biosafety	c
PBT	491 2.0	Standardization & Quality Management	c

Semester I1

PBT	480 1.0	Applications of Nuclear Techniques	c
PBT	481 8.0	Research Project on Plant Biology	c
PBT	484 2.0	Intoduction to Palynology	c
PBT	486 1.0	Cell Signaling	c
PBT	490 1.0	Plant Developmental Genetics	c
PBT	493 1.0	Molecular Diagnosis of Plant Diseases	c
PBT	494 1.0	Product Development & Marketing Management	c
PBT	495 1.0	Viral Genetics	c
PBT	496 2.0	Plant Quarantine	c
PBT	497 1.0	Nano Biotechnology	o
PBT	498 1.0	Genome Engineering	o

Course Type

-a-
compulsory

-c-
core

-o-
optional for all those doing Plant Biotechnology

-s -
optional for all students in the faculty (Students should get the approval of the Head of the Department before commencement of lectures)



PBL

Plant Biology

Offered by the Department of Botany

"Plant Biology is both a fundamental and applied science dealing with the structure, function, interactions, environment, evolution and taxonomy of plants"

B.Sc. (General) Degree Programme with Plant Biology

Course code: PBL - Duration: 3 Years

Subject combinations: Refer pages 247-248

For whom?

Biological science stream students who are interested in pursuing careers in academic, technological, industrial or environmental organizations. The intake is limited to a maximum of 60 students in an academic year. Minimum number for course is 20 in an academic year.

Career opportunities

The range of employment opportunities available for plant biology graduates include, as plant biologists, taxonomists, researchers, secondary school teachers, agriculturists, quarantine and border control agents, roles in western and traditional medicine, park rangers and tour guides, and employment in conservation and biodiversity projects.

Course overview

The study of plants is vital as they are critical for sustaining life on earth, through generation of oxygen and providing food and medicine for all life forms including man to exist. Plant Biology or Botany is the science of plant life including fungi, algae and viruses. Plant Biology began with early human efforts to identify edible, medicinal and poisonous plants, making it one of the oldest branches of science, which gets updated continuously. With high levels of malnutrition and deficiency diseases in diverse regions of the world including South Asia, there is an



need to maximize the potential of food crops, to ensure that mouths are fed and deficiency diseases are eradicated from the face of the earth. In order to harness the fullest potential of plants as manufacturing units of foods, biological processes that form the foundation of the vitality of plants, should be extensively studied and the labyrinths of interlocking biological pathways elucidated, which essentially requires the aptitude and dedication of a new breed of plant biologists.

Sri Lanka is a nation rich in endemic biodiversity and there is a vast amount of untapped resources to be harnessed from our unique assortment of flora found within our island shores. In order to reap the benefits of our endemic plant biodiversity, it is essential that a pool of graduates is developed with an in depth knowledge in contemporary plant biology. Therefore, the discipline, plant biology, engineers a strong foundation for a student to impending pursue a rewarding career while securing his/her interests in the appreciation of the diversity in plant life.

Course structure

The subject plant biology constitutes one third of the B. Sc. (General) degree programme in an allowed subject combination. All students who wish to offer plant biology will have to follow common compulsory and core course units during the first three semesters of the degree programme prior to the selection of plant biology as their chosen field of study. At the end of three years, total credit value gained by a student who has opted for general degree following a particular course should not be less than 27.0. A student can also opt for a Special degree spending an additional year offering more advanced areas pertaining respective subject he/she has selected

B.Sc. (Special) Degree Programme in Plant Biology

Duration: 4 Years

Career opportunities

The career opportunities available for graduates of the Special Degree Program in Plant Biology, will be centered on academia as well as practicing their trade as researchers in a diverse range of different positions undertaking in depth studies on contemporary research topics with the objectives of bridging gaps in knowledge and opening investigated areas of fundamental Plant Biology.

Course overview

The department offers special degree programs in Plant Biology for few students with the intention of producing graduates having an in-depth knowledge, better skills and competent in handling various aspects of the subject selected. The core curriculum of the special degree program is designed to provide advanced knowledge in the subject and simultaneously to impart hands-on experience in the world of work through an internship program in a government research institute or in a private sector organization for a short period. The final year research project assists students to improve on problem solving ability, critical thinking, and time management and there by preparing them to become professionals.

Selection

Selection of students to follow a special degree in Plant Biology is based on their performance during the first two academic years. The intake is limited to a maximum of 10 students per course.

Instruction and assessment

Through the knowledge and experience of academic staff of the Department of Botany and of visiting staff, we endeavor to expose students to a range of teaching and learning activities, based on the course units identified under each of the subjects offered by the department. The modules conducted include lectures, laboratory practical classes, tutorials, field classes, individual and group assignments/projects. Majority of these modules are assessed through semester end theory examination, practical examination, presentations and reports/theses, while a few are assessed continuously.

For further information please contact:

Dr. P. N. Dasanayake
Head/Department of Botany
E mail: nilanthiedas@yahoo.com

Plant Biology

FIRST YEAR

Semester 1

PBL/PBT/MBL	121 2.0	Cell Biology and Fundamentals of Plant Biochemistry	c
PBL/PBT/MBL	122 2.0	Plant Diversity and Systematics	c
PBL/PBT/MBL	131 1.0	Practical Module I	a

Semester 11

PBL/PBT/MBL	123 1.0	Principles of Ecology	c
PBL/PBT/MBL	124 1.0	Plant Development and Propagation	c
PBL/PBT/MBL	125 1.0	Plant Structure and Function	c
PBL/PBT/MBL	126 1.0	Classical Genetics	c
PBL/PBT/MBL	132 1.0	Practical Module II	a

SECOND YEAR

Semester 1

PBL/PBT/MBL	221 2.0	Bioenergetics and Plant Metabolism	c
PBL/PBT/MBL	226 1.0	Microbial Life I	c
PBL/PBT/MBL	227 1.0	Microbial Life II	c
PBL/PBT/MBL	231 1.0	Practical Module I	a

Semester I1

PBL	223 2.0	Genetics	c
PBL	224 1.0	Plant Physiology	c
PBL	225 1.0	Fundamentals of Recombinant DNA Technology	c
PBL	232 1.0	Practical Module II (including Angiosperm Taxonomy)	a

THIRD YEAR

Semester I

PBL	322 1.0	Plant Tissue Culture	c
PBL	324 2.0	Horticulture and Landscaping	c, s
PBL	327 1.0	Plant Pathology I	c
PBL	328 1.0	Plant Pathology II	c
PBL	331 1.0	Practical Module I	a

Semester I1

PBL	321 1.0	Economic Botany	c
PBL	325 1.0	Plant Resources	o
PBL	326 1.0	Applied Microbiology	o
PBL	332 1.0	Practical Module II	a

Course Type

-a-
compulsory

-c-
core

-o-
optional for all those doing Plant Biotechnology

-s -
optional for all students in the faculty (Students should get the approval of the Head of the Department before commencement of lectures)

Course Type

-a- compulsory

-c- core

-o- optional for all those doing Plant Biotechnology

-s - optional for all students in the faculty (Students should get the approval of the Head of the Department before commencement of lectures)

Plant Biology

THIRD YEAR (Special Part I)

Semester I

PBL	380 2.0	Plant Biochemistry	c
PBL	381 2.0	Molecular Systematics	c
PBL	382 1.0	Soil and Soil Fertility	c
PBL	383 2.0	Genome Mapping	c
PBL	384 4.0	Seminar	c
PBL	392 1.0	Paleobotany and Plant Evolution	c

Semester II

PBL	384 1.0	Fundamentals of GIS	c
PBL	385 4.0	Seminar	c
PBL	386 1.0	Advanced Genetics	c
PBL	387 2.0	Biostatistics and Computer Applications	c
PBL	388 1.0	Wood Science and Technology	o
PBL	390 2.0	Advanced Phytotaxonomy	c
PBL	391 1.0	Literature Survey and Assignment	c
PBL	393 1.0	Environmental Toxicology	o

FOURTH YEAR (Special Part II)

Semester I

PBL	481 8.0	Research Project on Plant Biology	c
PBL	483 1.0	Recent Trends in Ethnobotany	c
PBL	485 2.0	Advanced Plant Tissue Culture	c
PBL	486 1.0	Plant Genetic Resources Management	c
PBL	488 2.0	Plant Breeding	c
PBL	489 1.0	Bioethics & Biosafety	c
PBL	490 2.0	Postharvest Technology	c
PBL	491 2.0	Standardization & Quality Management	c

Semester II

PBL	480 2.0	Crop Protection	c
PBL	481 8.0	Research Project on Plant Biology	c
PBL	482 2.0	Advanced Plant Pathology	c
PBL	484 2.0	Advanced Plant Virology	c
PBL	492 2.0	Advanced Applied Microbiology	c
PBL	494 1.0	Product Development & Marketing Management	c
PBL	496 2.0	Plant Quarantine	c



PHY

Physics

Offered by the Department of Physics

Physics is a creative activity of human mind. Studying Physics provides you with a delightful and a rewarding experience that will make you suitable for any future career.

B.Sc. (General) Degree Programme with Physics as a subject
Course code: PHY

Duration: 3 Years
Subject combinations: Refer pages 247-248

For whom?

The course is primarily for the students of physical science stream who are interested in studying physics and are hoping to pursue knowledge and skills to succeed in a career in science, education, industry and in management. The Department also welcomes students with a biological science background, who are seeking career opportunities where both physics and biology are involved, to read physics as a subject. They are even eligible to read for a Special Degree in Physics provided they reach the required standard.

Career opportunities

The Bachelor of Science General Degree is designed to provide you with the necessary knowledge and skills to succeed in the career of your choice. Opportunities include positions in scientific and educational services, position in industry etc. The B.Sc. Degree could open doors to these possibilities and many more.

Course overview

Physics is a natural science which encompasses a vast array of sub-fields ranging from the, Solid state and sub-atomic regimes like Nuclear and Quantum physics to the study of the universe through Relativity and Astrophysics and the everyday applications such as Electronics and Optics.

A degree in physics offers you not only the subject knowledge but also the tools to be creative and think differently. It equips you with the analytical and personal skills that are essential for personal development, for any path you decide to take in the future.

Course structure

The Bachelor of Science General Degree spans over three years. The students are required to take course units in Physics with a minimum cumulative credit value of 27.0 during the three years. The course units comprise of 'compulsory', 'core',' non-core', 'optional', subjects so that the students are provided with the core knowledge of the physics stream while allowing some level of flexibility to pursue optional interest.

B.Sc. (Special) Degree in Physics
Duration: 4 Years

For whom?
The Special Degree programme is aimed at the students who are interested in taking Physics as a career and would like to pursue an academic/research line in the future.

Course overview
The B.Sc. special degree caters to those of you who are fascinated by the beauty of physics and hope to pursue an academic and research career. However this is well-balanced by some practical courses including an industrial placement scheme which exposes the students to the industrial and scientific environment of the country.

Course structure
The students are required to take course units in Physics with a minimum cumulative credit value of 30.0 each in the third and fourth years. The course units consist of 'compulsory', 'core',' non-core', 'optional', subjects so that the students are provided with the core knowledge of the physics stream while allowing some level of flexibility to pursue optional interest.

Selection policy
Selection of students to follow the B.Sc. (special) Degree in Physics is based on student's performance in the first two academic years. The intake is typically limited to a maximum of 10 students.

Mode of instruction and assessment
Students enrolled in both General and Special Degree programs will be guided by academic staff with established track record. The modules include lectures, tutorials, laboratory practicals, individual and group projects, seminars, internship and assignments. These are assessed through end-of-semester written examinations, practical examinations, presentations and reports.

For further information please contact:
Dr. W.D.A.T. Wijeratne
Head/Department of Physics
E mail: agraw@sjp.ac.lk

Physics

Course Type

-a- compulsory

-c- core

-n- optional for those not doing Physics

-o- optional for those doing Physics

-s- optional for all students in the faculty

B.Sc. (General) Degree Course Units

Each student should take course units having a minimum cumulative credit value of 27.0

FIRST YEAR

Semester I

PHY 101 1.0	Fundamental of Electronics (Unaudited Unit)	o
PHY 102 2.0	Mathematics for Bio Science Students - Semester I & II (Unaudited Unit)	o
PHY 103 2.0	Mechanics and Properties of Matter	c
PHY 104 1.0	Electricity and Magnetism	c
PHY 105 1.0	Waves and Vibrations	c
PHY 106 2.0	Practical (Elementary) - Semester I & II	a

Semester II

PHY 102 2.0	Mathematics for Bio Science Students - Semester I & II (Unaudited Unit)	o
PHY 107 2.0	Applied Electricity and Basic Electronics	c
PHY 108 2.0	Thermodynamics	c
PHY 106 2.0	Practical (Elementary) - Semester I & II	a

SECOND YEAR

Semester I

PHY 201 2.0	Optics I	c
PHY 202 2.0	Analogue and Digital Electronics	c,n
PHY 203 1.0	Practical (Optics) - Semester I & II	a
PHY 204 1.0	Practical (Electronics) - Semester I & II	a

Semester II

PHY 205 1.0	Statistical Physics I	c
PHY 206 1.0	Mathematical Physics I	c
PHY 207 1.0	Special Theory of Relativity	c,n
PHY 208 1.0	Atomic and Nuclear Physics	c
PHY 203 1.0	Practical (Optics) - Semester I & II	a
PHY 204 1.0	Practical (Electronics) - Semester I & II	a

THIRD YEAR

Semester I

PHY 301 1.0	Electromagnetic Theory I	c
PHY 302 1.0	Quantum Mechanics I	c
PHY 303 1.0	Computational Tools of Physics	o
PHY 304 2.0	Group Project - Semester I & II	o
PHY 305 1.0	Geophysics I	o
PHY 306 1.0	Solid State Physics I	o
PHY 307 1.0	Practical (Applied) - Semester I & II	a
PHY 308 1.0	Practical (Computational) - Semester I & II	a

Semester II

PHY 309 1.0	Introduction to Microprocessors	c#
PHY 310 1.0	Space Physics	s
PHY 311 1.0	Introduction to Computer Hardware	o*#
PHY 312 1.0	Industrial Physics	s
PHY 313 1.0	Physics and Environment	s
PHY 314 1.0	Astronomy	o
PHY 315 1.0	Metrology	o
PHY 316 1.0	Paradigms of Physics and Sustainability	s
PHY 317 1.0	Reflection Seismology	o
PHY 318 1.0	Nanophysics	o
PHY 319 1.0	Physics Education	o
PHY 320 1.0	Applied Optics	o
PHY 307 1.0	Practical (Applied) - Semester I & II	a
PHY 308 1.0	Practical (Computational) - Semester I & II	a

Comments :

PHY 313 1.0: Some familiarity with Advanced Level mathematics will be essential for this course.
PHY 207 1.0: Knowledge in algebra is a perquisite for this course.

In addition to the above optional units, the students may offer any one of the B.Sc. (Special) Degree units if they have necessary prerequisite knowledge and if the time table permits. Decision with regard to the suitability of a student to follow such a unit shall be made by the lecturer in charge of that unit.

Course Type

-a-
compulsory

-c-
core

-o-
optional for those doing Physics

-s-
optional for all students in the faculty

*
Those who are doing Computer Science and Information and Communication Technology as a subject are not allowed to take this course unit.

-#-
Those who are doing Electronics & Embedded Systems as a subject must take PHY 311 1.0 Intro. to Computer Hardware instead of PHY 309 1.0 Intro. to Microprocessors

Course Type

-a-
compulsory

-c-
core

-n-
optional for those not doing Physics

-o-
optional for those doing Physics

-s-
optional for all students in the faculty

B.Sc. Special Degree Course Units

Part I

Semester I

PHY 301 1.0	Electromagnetic Theory I	c
PHY 302 1.0	Quantum Mechanics I	c
PHY 303 1.0	Computational Tools of Physics	c
PHY 305 1.0	Geophysics I	c
PHY 306 1.0	Solid State Physics I	c
PHY 310 1.0	Space Physics	s
PHY 314 1.0	Astronomy	o
PHY 317 1.0	Reflection Seismology	o
PHY 319 1.0	Physics Education	o
PHY 320 1.0	Applied Optics	o
PHY 351 2.0	Mathematical Physics II	c
PHY 352 3.0	Classical Mechanics	c
PHY 353 2.0	Optics II	o
PHY 354 2.0	Computational Physics & Networking	o
PHY 307 1.0	Practical (Applied) - Semester I & II	a
PHY 308 1.0	Practical (Computational) - Semester I & II	a
PHY 355 4.0	Practical (Advanced) - Semester I & II	a
PHY 358 2.0	Nuclear Physics	c

Semester II

PHY 309 1.0	Introduction to Microprocessors	c
PHY 315 1.0	Metrology	c
PHY 356 2.0	Solid State Physics II	c
PHY 357 2.0	Geophysics II	c
PHY 311 1.0	Introduction to Computer Hardware	o
PHY 312 1.0	Industrial Physics	s
PHY 313 1.0	Physics and Environment	s
PHY 316 1.0	Paradigms of Physics and Sustainability	s
PHY 318 1.0	Nanophysics	o
PHY 359 2.0	Telecommunication	c
PHY 360 2.0	Workshop Technology	c
PHY 307 1.0	Practical (Applied) - Semester I & II	a
PHY 308 1.0	Practical (Computational) - Semester I & II	a
PHY 355 4.0	Practical (Advanced) - Semester I & II	a

Part II

Semester I

PHY 451 3.0	Electromagnetic Theory II	c
PHY 452 2.0	Statistical Physics II	c
PHY 453 2.0	Microprocessors and Computer Interfacing	c
PHY 454 8.0	Project - Semester I & II	c
PHY 455 6.0	Internship	c

Semester II

PHY 456 3.0	Quantum Mechanics II	c
PHY 457 2.0	Particle Physics and Instrumentation	c
PHY 458 2.0	Space & Atmospheric Physics	c
PHY 454 8.0	Project - Semester I & II	c
PHY 459 2.0	Seminar	c
PHY 460 1.0	Mathematical Physics III	o

Comments:

PHY 313 1.0: Some familiarity with Advanced Level mathematics will be essential for this course.
PHY 207 1.0: Knowledge in algebra is a prerequisite for this course.
PHY 357 2.0: PHY 305 1.0 Geophysics I is a prerequisite for this course

Students are not allowed to offer both optional units PHY 353 2.0 and PHY 354 2.0 and they must select either PHY 353 2.0 or PHY 354 2.0

Course Type

-a-
compulsory

-c-
core

-n-
optional for those not doing Physics

-o-
optional for those doing Physics

-s-
optional for all students in the faculty

PCH



Polymer Chemistry

Offered by the Department of Chemistry

"Polymer chemistry holds a unique place within chemistry as it creates useful materials by changing molecular scale properties of monomers and by applying different chemical and processing techniques, cater for a wide range of applications."

B.Sc. (Hons) Degree Program in

Polymer Chemistry

Course code: PCH

Duration: 4 years

Career Opportunities

This degree is designed for students to obtain an in-depth knowledge in polymer chemistry and to thereby produce professionals for the polymer industry and academia. As there are over five thousand polymer related industries including plastics, rubber, textile, etc. in Sri Lanka, the



students who graduate with a degree in polymer chemistry have a high opportunity to enter into the employment market and to contribute to the country's economy through research and development in the field of polymer chemistry and by sharing their knowledge with the industries and helping these industries to prosper. Also, the program would open up great opportunities for student to follow postgraduate degrees through research in recognized universities and research institutes in the world.

Course overview

B.Sc. (Hons) Degree Program in polymer chemistry is designed to create competent graduates to meet the demands of polymer related industries, research institutes and postgraduate institutes. The syllabus includes fundamentals of chemistry and polymer chemistry, more specialized and most recent advanced courses in the discipline along with a large number of optional courses in terms of polymer engineering and technology and other fields to meet the current demand in the country. The program is also designed for students to develop a variety of different soft skills essential for their career success and to excel in a very competitive job market.

Course structure

First two years comprises of compulsory and core course units which would lay a foundation for them to specialize in polymer chemistry. Based on students' performance in the first two years, maximum of 10 students will be selected to follow B.Sc. (Hons) Degree Program in polymer chemistry. Courses in third and fourth years comprise of a large number of specialized core and optional courses for students to be an expert in the field of polymer chemistry. The practical course units are specially designed to cover almost all the applications in the polymer industry with hands on experience to apply theoretical concepts that they learnt along with a number of industrial/field visits for students to experience how things related to polymer chemistry are utilized in the world.Students are required to carry out a research project which would enable students to gather hands on experience on scientific research and to obtain a variety of soft skills such as analytical thinking and reasoning, problem solving, etc. through research in the fourth year. A dissertation will be submitted at the end of the research project which will be evaluated through an oral presentation and *viva voce* examination.

Mode of instruction and assessment

The courses in the syllabus are delivered as lecturers, tutorials, practicals, assessments, reports, projects, etc. The medium of instruction is English. The students are assessed through end semester examinations, practical tests, reports and presentations.

For further information please contact:

Dr. Madhubhashini Maddumaarachchi,
Course coordinator
E mail: madhubh@sjp.ac.lk

B.Sc. (Hons) Degree Course Units

FIRST YEAR

Semester I

PCH 101 2.0	Introduction to Polymers	c
PCH 113 1.0	Chemistry of Silicon Compounds	c
PCH 114 1.0	Testing of Polymers	c
PCH 111 1.0	Polymers with Special Functionalities	c

Semester II

PCH 105 2.0	Basic Chemical Engineering & Polymer Industry	c
PCH 115 1.0	Latex Technology	c
PCH 112 1.0	Dry Rubber Technology	c
PCH 107 1.0	Degradation and Stability of Polymers	c

SECOND YEAR

Semester I

PCH 220 2.0	Tyre Manufacturing Technology	c
PCH 207 1.0	Solution Properties and Thermodynamics of Polymers	c
PCH 212 1.0	Practicals	a
PCH 205 1.0	Plastic Technology	c

Semester II

PCH 217 1.0	Plastic Materials	c
PCH 213 1.0	Kinetics of Polymerization	c
PCH 214 1.0	Rubber Based Industries	c
PCH 218 1.0	Engineering Plastics	c
PCH 221 1.0	Polymer Characterization	c

Course Type

-a-
Compulsory

-c-
core

-o-
optional

-a-
Compulsory

-c-
core

-o-
optional

THIRD YEAR

Semester I

PCH 350 2.0	Synthetic Organic Chemistry	c
PCH 351 1.0	Advanced Polymer Synthesis	c
PCH 352 1.0	Fundamentals of Polymer Physics	c
PCH 353 2.0	Advanced Thermodynamics and Statistical Thermodynamics	c
PCH 354 4.0	Laboratory Practical	c
PCH 355 1.0	Polymer Rheology, Viscosity & Rubber Elasticity	c
PCH 356 1.0	Degradable Polymer Technology	o
PCH 357 2.0	Mould and Tool Designing	o
PCH 358 1.0	Polymers in Packaging Industry	o
PCH 365 1.0	Molecular Modeling and Computational Chemistry	c

Semester II

PCH 360 2.0	Advanced Organic and Inorganic Spectroscopy	c
PCH 361 2.0	Statistics and Chemometrics	c
PCH 362 2.0	Polymer Blends and Composite	c
PCH 363 1.0	Chemistry and Physics in Polymer Surfaces	c
PCH 364 2.0	Environmental Impact and Management of Polymer Waste	c
PCH 366 1.0	Polymers in Medicinal /Bio-technology Applications	o
PCH 367 1.0	Polyurethane Chemistry and Technology	o
PCH 368 2.0	Polymer Nano-technology	o
PCH 369 2.0	Polymers in Textile Industry	o

FOURTH YEAR

Semester I

PCH 450 3.0	Applications of CAD Drawing in Polymer Industry	c
PCH 451 2.0	Biological Macromolecules	c
PCH 452 1.0	Polymer Coatings and Paint Industry	c
PCH 453 1.0	Rubber Analysis	o
PCH 454 2.0	Industrial Management and Marketing	o
PCH 455 1.0	Applications of Engineering Concepts in Polymer Industry	o
PCH 456 1.0	Finite Element Analysis	o
PCH 457 2.0	Current Trends in Polymer Science	o
PCH 458 2.0	Advanced Polymer Materials	o

Semester II

PCH 459 10.0	Research Project	a
PCH 460 1.0	Quality Control and Assurance	o
PCH 461 2.0	Novel Polymer Processing Technology	o
PCH 462 1.0	Advanced Inorganic Polymers	o
PCH 463 1.0	Fabric Preparation and Finishing	o
PCH 464 2.0	Introduction to Computational Tools for Polymer Technology	o

Course Type

-a-
Compulsory

-c-
core

-o-
optional

PST



Polymer Science & Technology

Offered by the Department of Chemistry

"Polymer science is a blend of organic chemistry, physical chemistry, material physics, statistical mathematics, and inorganic chemistry. Polymer Technology is a combination of polymer science, some aspects of chemical engineering, rheology, and reactor designing for polymerization, mechanical aspects and mould designing. Its interdisciplinary nature makes it a fascinating and challengeable subject"

For whom?

Polymer Science and Technology is globally established with a wide scope in cost effective and energy saving benefits for the sustainability of the modern era. Students from physical and bio science streams who have an interest in the field of polymer science and technology are eligible. The current intake is limited to maximum of 60 students per academic year.

Opportunities

Polymer industry has become a major contributor towards national economy since the early 1930's. The function of the University of Sri Jayewardenepura in workforce development in the Polymer industry is quite dominant. With the winning combination of a strong foundation of theoretical knowledge gained through three years of course units and practical hands-on experience, students finds it easy to get established in the Sri Lankan polymer based



industries as polymer chemists, technologists, technicians and management personnel.

Course overview

The Department of Chemistry, University of Sri Jayewardenepura has developed into an active center of providing well educated and responsible young scientists in the field of Polymer Science and technology. The subject is offered in such a way to provide mastery in scientific theory, technology, initiative, and creativity in the field of Polymer Science and Technology. We are constantly striving to improve our policies and develop our curriculum, in such a way to awaken creativity while nourishing their minds with knowledge. Thus, many strategic activities such as frequent industrial seminars, industrial visits, curriculum developments, workshops, conferences and since of late, organizing an annual symposium are all part of the program.

Course structure

Chemistry, Physics and Polymer Science and Technology (PST) are the three compulsory subjects for students who seek to join in the PST program. Course units in chemistry, physics and PST of the first two years are compulsory and cover the core area of the subjects. Students in the PST stream are eligible for special degree program in chemistry, physics or Polymer Chemistry if they can meet the criterion at the end of the second year. A range of optional course units are offered with industrial training in polymer based industry for the students in the third year.

For further information please contact:

Dr. Madhubhashini Maddumaarachchi,

Course coordinator

E mail: madhubh@sjp.ac.lk

Polymer Science & Technology

Course Type

-a-
compulsory

-c-
core

-o-
Optional

Each student should take course units having a minimum cumulative credit value of 27.0

FIRST YEAR

Semester I

PST 101 2.0	Introduction to Polymers	c
PST 113 1.0	Chemistry of Silicon Compounds	c
PST 111 1.0	Polymers with Special Functionalities	c
PST 114 1.0	Testing of Polymers	c

Semester II

PST 105 2.0	Basic Chemical Engineering and Polymer Industry	c
PST 107 1.0	Degradation and Stability of Polymers	c
PST 112 1.0	Dry Rubber Technology	c
PST 115 1.0	Latex Technology	c

SECOND YEAR

Semester I

PST 205 1.0	Plastic Technology	c
PST 207 1.0	Solution Properties and Thermodynamics of Polymers	c
PST 220 2.0	Tyre Manufacturing Technology	c
PST 212 1.0	Laboratory Practicals	a

Semester II

PST 213 1.0	Kinetics of Polymerization	c
PST 217 1.0	Plastic Materials	c
PST 214 1.0	Rubber Based Industries	c
PST 218 1.0	Engineering Plastics	c
PST 221 1.0	Polymer Characterization	c

THIRD YEAR

Semester I

PST 303 1.0	Polymer Coating and Paint Industry	o
PST 307 1.0	Polymer Engineering and Mould Designing	o
PST 310 2.0	Industrial Management and Marketing	o
PST 316 1.0	Fundamentals of Polymer Physics	c
PST 317 1.0	Polymer Rheology, Viscosity and Rubber Elasticity	c
PST 305 1.0	Laboratory Practicals	a

Semester II

PST 301 1.0	Polymer Blends and Composite	o
PST 309 2.0	Industrial Project and Seminar	o
PST 314 2.0	Introduction to Waste Water Treatment Processes in Polymer Industry	o
PST 313 1.0	Introduction to Engineering Materials	o
PST 315 1.0	Environment and Polymer Industry	o



SSM

Sports Science & Management

Sports Science is a discipline that studies the application of scientific principles and techniques with the aim of improving sporting performance.

The Programme is offered by the Faculty of Applied Sciences in collaboration with Faculty of Humanities and Social Science, Faculty of Management Studies and Commerce, Faculty of Medical Sciences and Physical Education Division, University of Sri Jayewardenepura.

B.Sc. (Special) Degree in Sports Science and Management
Course Code: SSM

Duration: 4 years

For whom?
Advanced level students in the stream of Arts/ Biological Science/Physical Science/Commerce who have obtained the stipulated Z score set for Sports Science and Management by the University Grant Commission. Maximum number of students admitted to this course will be limited to fifty.

Career opportunities
Graduates in this field may be employed as physical education teachers, dieticians or nutritionists, performance analysts, sports coaches, sports therapists, fitness center managers, sports administrators, strength and conditioning specialists or retail managers of sports stores. Graduates may also be well positioned to undertake further training to become an accredited physiotherapist, exercise physiologist or clinical exercise consultant.

Course overview
The study of Sport Science incorporates areas of physiology, psychology, general anatomy, nutrition & diet, sports technology, sports medicine, forensic science in sports, sociology, and performance analysis, biomechanics, sports and financial management etc.

Course structure
The Sports Science and Management degree is a special degree with full-time coursework consisting of four academic years (eight semesters). Students need to complete 120 credits of coursework/research to qualify for award of the bachelor of Science in Sports Science & Management degree.

Mode of instruction and assessment
Assessment of course units are varied, and are comprised of a combination of coursework, presentations and research reports. Students are given the opportunity to give oral presentations as a part of formative assessment tasks and are encouraged to develop practitioner skills alongside academic skills through the use of different assessment methods.

For further information please contact:
Dr. N.M.S.Sirimuthu
Programme Coordinator
E mail : nmssirimuthu@sjp.ac.lk

B. Sc. Special Degree (Sports Science and Management**)**
Each student should take course units having a minimum cumulative credit value of 120.

FIRST YEAR
Semester I

SSM 101 2.0	Introductory Biology	o
SSM 150 2.0	Fundamentals of Human Psychology	o
SSM 102 2.0	Introduction to Physics	o
SSM 160 2.0	Introductory Course in Economics	o
SSM 103 1.0	Principles of Mathematics	c
SSM 104 1.5	Introduction to Information Technology I	c
SSM 150 2.0	General Sociology	c
SSM 161 2.0	Principles of Management	c
SSM 180 1.5	Swimming	c
SSM 182 2.0	Athletics	c

Semester II

SSM 105 1.5	Introduction to Information Technology II	c
SSM 106 2.0	Basic Biochemistry	c
SSM 107 1.0	Biomechanics	c
SSM 120 1.5	Physiology I	c
SSM 121 1.5	General Anatomy I	c
SSM 151 1.5	Aesthetic I	c
SSM 152 1.0	Career Orientation I	c
SSM 181 1.5	Volleyball	c
SSM 183 1.5	Basics of Gymnastics	c
SSM 184 1.5	Netball	c
SSM 185 1.5	Cricket	c

SECOND YEAR
Semester I

SSM 201 2.0	Human Nutrition	c
SSM 220 1.5	Physiology II	c
SSM 222 1.5	General Anatomy II	c
SSM 240 2.0	Healthy Living Styles	c
SSM 261 2.0	Leadership and Managing People in the Sports Industry	c

Course Type
-c-
core

-o-
optional

-e-
elected

Course Type

-c-
core

-o-
optional

-e-
elected

SSM 281 2.0	General Theory of Sports Training I	c
SSM 282 1.0	Badminton	c
SSM 283 1.0	Basketball	c
SSM 286 1.0	Table Tennis	c
SSM 288 1.0	Weightlifting	c

Semester II

SSM 202 2.0	Statistics and Data Analysis	c
SSM 221 1.0	SportsScience and Exercise Physioligy	c
SSM 251 1.0	Developmental Psychology	c
SSM 253 2.0	Aesthetic II	c
SSM 260 2.0	Financial Accounting	c
SSM 280 2.0	History, Laws and Ethics of Sports	c
SSM 290 2.0	General Theory of Sports Training II	c
SSM 284 1.0	Football	c
SSM 285 1.0	Elle	c
SSM 287 1.0	Hockey	c

THIRD YEAR

Semester I

SSM 320 2.0	Sports Medicine	c
SSM 340 2.0	Injury Prevention and Rehabilitation	c
SSM 350 2.0	Sports Psychology	c
SSM 360 2.0	Introduction to Marketing and Marketing Management	c
SSM 382 2.0	Athletics Rules	c
SSM 386 2.0	General Theory of Sports Training III	c
SSM 389 3.0	Judo, Taekwondo, Karate	c

Semester II

SSM 341 2.0	Performance Enhancing Methods	c
SSM 351 2.0	Sports Sociology	c
SSM 361 2.0	Introduction to Financial Management	c
SSM 381 3.0	Specialization in a Selected Sport	c
SSM 383 2.0	Track and Measurement	c
SSM 384 2.0	Teaching and Coaching Practicals	c
SSM 385 2.0	Systems of Physical Education	c

FOURTH YEAR
Semester I

SSM 402 2.0	Sports Nutrition	c
SSM 420 2.0	Forensic Science in Sports	e
SSM 441 2.0	Yoga and Relaxation Techniques	e
SSM 442 1.0	Management of Sports Injuries	e
SSM 451 2.0	Pedagogy (Teaching Methods)	e
SSM 452 1.0	Career Orientation II	e
SSM 460 2.0	Facilities Design and Management	c
SSM 461 2.0	Sports Media Marketing	c
SSM 462 2.0	Sports Budgeting and Finance	c

Semester II

SSM 401 8.0	Research Project in Sports Science and Management	c
SSM 403 2.0	Dietetics	c
SSM 463 2.0	Sports Event Management	c
SSM 481 2.0	Coaching Education	c

Course Type

-c-
core

-o-
optional

-e-
elected

STA

Statistics



Offered by the Department of Statistics

Statistics is the study of collecting, analysing, interpreting and presenting data.
"Statistical thinking will one day be as necessary for efficient citizenship as the ability to read and write"
- H. G. Wells -

B.Sc. (General) Degree Programme with Statistics

Course code: STA - Duration: 3 Years

Subject combinations: Refer pages 247-248

For whom?

Students from physical science stream who are interested in pursuing careers in Statistics or related disciplines. The intake at present is limited to a maximum of 120 students in an academic year.

Career opportunities

General Degree graduates who follow Statistics as a subject are employed as statisticians, teachers, business analysts, quality assurance managers, banking officers, planning executives, etc.

Course overview

Statistics plays a vital role in all aspects of a data-based investigations using well designed experiments and surveys to discover the patterns in data, and to determine the principal causes of important effects. It is the science of drawing reliable conclusions through data collection, analysis, interpretation and presentation under uncertainty. The theory and methods of statistics are critical in a wide variety of fields such as biology, economics, engineering, medicine, public health, psychology, marketing, education, and



insurance. Our degree program provides a solid training in the theory, methods, and applications of statistics which are necessary for both academia and industry where advanced knowledge is required. It is developed with a strong emphasis on industry-based skills, underpinned by sound scientific knowledge and understanding.

Course structure

A three year program is offered to students who choose the above subject combinations. All first and second year courses are core units. These courses provide a solid foundation in Statistics and computational skills with an introduction to different fields of applications. Third year General degree students have a range of optional courses in applied areas. In addition to the essential theoretical knowledge, Statistics undergraduates are given an ample opportunity to collect and analyze data and prepare statistical reports related to real world problems. They also gain vital experience in solving real world problems through the Statistical Consultancy Unit of the DS which offers its services to both on campus and off campus researchers. Further, students are given plenty of opportunities for practical work using industry-standard computer packages such as MINITAB, SPSS, R, Eviews, etc.

B.Sc. (Special) Degree in Statistics
Duration: 4 Years

For whom?

The special degree program is designed for students who aspire to be leaders in various functional areas in statistics such as academia, research, government and industry.

Career opportunities

Statisticians are consistently rated among the top jobs when factors such as salary, working conditions, and interest are combined. In general, statisticians can easily fit into careers in any field. The public and private sector rely on statistical information for decision making, regulation, controlling and planning. Some major areas of applications of Statistics are the production of government statistics, pharmaceutical research, industrial quality management, risk assessment in insurance (actuarial statistics), environmental monitoring and assessment, medical research, etc.

Some of our past graduates holding special degrees in Statistics are now employed as lecturers at various state universities and private educational institutes affiliated to foreign universities, while many others are employed as directors, managers, executive officers of state and private banks, group compliance and systems managers, project officers, logistic analysts, management trainees, research assistants, financial analysts, program assistants, etc. Some are pursuing higher studies abroad.

Course overview

The B.Sc. (Special) Degree in Statistics is aimed at preparing experts in the field of Statistics. Our degree provides a firm foundation in Statistics, together with relevant mathematical and computing knowledge required to pursue higher studies in Statistics related disciplines as our degree is recognized by many universities in Canada, Europe, USA, and Australia. Doctoral degree or similar postgraduate qualifications from a recognized university would lead the career path in academia in the widely expanding university system in Sri Lanka.

Course structure

The core curriculum offered under the Special Degree is an excellent preparation for careers where statistical, mathematical and computing skills are highly valued. The courses in the third year of the Statistics special degree are all core units while in the fourth year a wider choice of specialized optional courses are offered. Throughout the curriculum, special emphasis is placed on the up-to-date applications of Statistics in industry.

Statistics Special Degree students are required to undertake a comprehensive guided project which is evaluated by an oral presentation followed by a viva voce examination. In addition, students undergo a four-month, full-time, industrial training. Further, they are provided with the opportunity to solve real world problems through the Statistical Consultancy Unit enabling them to gain experience as a statistical consultant.

Selection Policy

Selection of students for the B.Sc. (Special) Degree in Statistics is based on student performance in the first two academic years. The number of students typically depends on availability of human and other resources in the department.

Mode of instruction and assessment

Students enrolled in both General and Special Degree programs will be taught by highly skilled, knowledgeable academic staff who are up to date with current applications of statistical methods. We provide most of our basic core teaching for modules through lectures while seminars and group tutorials offer the opportunity to discuss subject matter in greater detail and raise questions in a more informal setting.

Course units are assessed through mid and end-of-semester written examinations, practical tests, presentations, *viva voce* examinations, and reports.

Diversified learning activities and assessment methods such as seminar presentations, individual and group assignments, case studies, individual and group projects are used to encourage active and participatory learning. This diversification helps to improve soft skills such as oral and written communication, team work and time-management skills demanded by the employers.

For further information please contact:

Dr. Chitraka Wickramarachchi
Head/Department of Statistics
E mail: chitraka@sjp.ac.lk

Course Type

-c-
Core

-o-
optional for those following Statistics

B. Sc. (General) Degree Course Units

Each student should take course units having a minimum cumulative credit value of 27.0

FIRST YEAR

Semester I

STA 113 2.0	Descriptive Statistics	c
STA 114 2.0	Probability and Distribution Theory I	c
STA 115 1.0	Elements of Sampling	c

Semester II

STA 123 2.0	Probability and Distribution Theory II	c
STA 124 1.5	Data Analysis I	c
STA 125 1.5	Statistical Communication	c

SECOND YEAR

Semester I

STA 213 2.0	Inferential Statistics	c
STA 214 1.5	Nonparametric Statistics	c
STA 215 1.5	Sampling Techniques	c

Semester II

STA 224 2.0	Regression Analysis	c
STA 225 1.5	Design of Experiments	c
STA 226 1.5	Data Analysis II	c

THIRD YEAR

Semester I

STA 312 1.5	Time Series Analysis	c
STA 313 1.5	Statistical Decision Theory	o
STA 314 2.0	Multivariate Statistical Methods	o
STA 316 2.0	Discrete and Categorical Data Analysis	c
STA 319 2.0	Advanced Regression Analysis	o
STA 326 2.0	Programming and Data Analysis with R	o
STA 351 2.0	Research Methodology	o

Semester II

STA 315 2.0	Essential Skills in Statistics	c
STA 321 2.0	Statistical Quality Assurance	o
STA 322 2.0	Medical Statistics	o
STA 324 1.5	Operations Research	o
STA 325 2.0	Independent Study	o#
STA 330 2.0	Data Analysis and Preparation of Reports	c
STA 332 2.0	Compilation of Official Statistics	o*
STA 333 2.0	Econometric Models	o**

B.Sc (Special) Degree Course Units

Part I

Semester II

STA 312 1.5	Time Series Analysis	c
STA 313 1.5	Statistical Decision Theory	c
STA 314 2.0	Multivariate Statistical Methods	c
STA 316 2.0	Discrete and Categorical Data Analysis	c
STA 318 2.0	Advanced Distribution Theory	c
STA 319 2.0	Advanced Regression Analysis	c
STA 326 2.0	Programming and Data Analysis with R	c
STA 351 2.0	Research Methodology	c
STA 354 1.5	Machine Learning 1	o

Semester II

STA 315 2.0	Essential Skills in Statistics	c
STA 317 2.0	Advanced Design of Experiments	c
STA 321 2.0	Statistical Quality Assurance	c
STA 322 2.0	Medical Statistics	o

Course Type

-c-
Core

-o-
optional for those following Statistics

-o#-
B.Sc. (General) degree students who have followed STA 351 2.0 Research Methodology can do this course as an optional course.

-o*-
Those who are doing Econometrics as a subject are not allowed to do this course

-o**-
Those who are following B.Sc. (special) degree in Statistics are not allowed to do this course

Course Type

-c-
Core

-o-
optional for those following Statistics

STA 323 1.5	Introduction to Actuarial Statistics	o
STA 324 1.5	Operations Research	o
STA 327 2.0	Theory of Multivariate Statistics	c
STA 329 2.0	Advanced Statistical Inference	c
STA 330 2.0	Data Analysis and Preparation of Reports	c
STA 331 2.0	Stochastic Processes	c
STA 332 2.0	Compilation of Official Statistics	o
STA 355 2.0	Optimization	o

Part II

STA 471 2.0	Generalized Linear and Non Linear Models	c
STA 472 2.0	Special Topics in Statistics	o
STA 474 2.0	Statistical Consultancy	c
STA 476 2.0	Statistical Data Mining	c
STA 477 2.0	Spatial Statistics	o
STA 478 2.0	Advanced Time Series Analysis	c
STA 479 2.0	Advanced Sampling Theory	c
STA 480 2.0	Current Topics in Statistics	o
STA 481 2.0	Seminar	c
STA 483 6.0	Research Project	c
STA 484 4.0	Internship	c
STA 485 2.0	Measure Theory	o
STA 486 2.0	Survival Analysis	o
STA 487 2.0	Computational Inference	o
STA 490 2.0	Linear Mixed Models and Generalized Linear Mixed Models	c
STA 491 2.0	Bayesian Inference	o



Offered by the Department of Zoology

Zoology is a branch of biology that is centered on the study of the structure, function, evolution, interactions, nutrition, environment and taxonomy of the fauna of earth - the animal kingdom

B.Sc. (General) Degree Programme with Zoology
Course code: ZOO

Duration: 3 Years
Subject combinations: Refer pages 247-248

For whom?

Students from biological sciences streams who are interested in pursuing careers in Zoology

Career opportunities

Sri Lanka is at heart a nation with a rich endemic biodiversity. In order to harness the potential of our island nation in biodiversity, it is important that a pool of talent is developed who are equipped with specialist and applied knowledge in Zoology. Simultaneously, Sri Lanka is a nation harboring a host of tropical communicable and deficiency diseases, which mandatorily necessitates a workforce equipped with applied scientific knowledge to undertake surveillance, research and extension activities associated with the distribution of such debilitation conditions. Therefore, by the provision of skilled graduates in contemporary Zoology, the department contributes towards national development and the upliftment of communities through its alumni. The scope in Zoology is reasonably broad in its spectrum of employment opportunities with prospects of joining government ministries, private organizations, universities and education providers, hospitals, museums, secondary schools, consultancy firms as well as providing opportunity for entrepreneurship.

Course overview

The subject Zoology aims to provide a holistic learning environment in contemporary Zoology as a blend of specialist knowledge and applied laboratory and field studies, to ensure the all-round development of a student to suite the 21st century aspirations of our island nation. As a result, course units which are part of the modern learning environment imparted by the Department of Zoology include Limnology, Molecular Biology, Genetics, Nutrition, Wildlife and Conservation of Biodiversity, Microbial Ecology, Insect Pest Management, Fisheries and Aquaculture and Environmental Toxicology.

Outside of the key subject areas, students are equipped with communication and problem solving skills, team work and perseverance and leadership qualities to ensure their career readiness to secure a future within the 21st century workforce.

Course structure

The subject Zoology will contribute one third of the B.Sc. (General) degree program within the framework of a permitted subject combination. Students are required to take course units equaling or exceeding a cumulative credit value of 27.0 points. Course units are classified as compulsory, core and optional course units and the course units are designed to provide the student with specialist knowledge and skills required in contemporary Zoology.

B.Sc. (Special) Degree Programme in Zoology
Duration: 4 Years

Career opportunities

The career opportunities available for graduates of the Special Degree Program in Zoology, will be centered on academia, government ministries, consultancy firms and as well as practicing their trade as researchers at a diverse range of hierarchical positions undertaking in depth studies on contemporary research topics with the objectives of bridging gaps in knowledge and deciphering cryptic areas of fundamental Zoology.

Course overview

The B.Sc. (Special) Degree in Zoology aims to prepare a new breed of experts with marketable and transferable skills in contemporary applied Zoology. As the degree programme imparts a higher level of specialist knowledge and practical training, the Special Degree program is ideally suited for students with aspirations for graduate studies and further research training.

The core strengths of the Special Degree Programme are the coverage of specialist knowledge, both in-depth and with a wide spectrum of horizontal topics, the provision of a higher degree of practical skills which are transferable beyond the learning environment, higher levels of analytical and communication skills and in whole, a well-rounded education program suited for research endeavors or higher studies under specialist topics. The final year research project is of core significance to the Special Degree Programme which advances a student's capacity to undertake research endeavors, develops core analytical skills, expand communication, networking and language skills and to pursue careers in academia.

Selection

Selection of students to pursue a Special Degree Programme in Zoology, is based on the student's performance in the first two years of the academic programme and a limited number of students are selected based on the staff availability.

Instruction and assessment

The impartation of education to students enrolled in General and Special Degree programmes, will be conducted by an eminent group of lecturers, with proven track records in academia and research. The teaching environment within the Department of Zoology consists of lectures, laboratory practicals, field studies and project assignments which ensures the all-round development of students in specialist knowledge and practical training. The modes of assessment include end-of-semester examinations, practical tests, presentations and reports.

For further information please contact:

Prof. M.M. Pathmalal
Head/Department of Zoology
E mail: pathmalal@sjp.ac.lk

Course Type

-a-
compulsory

-c-
core

-o-
optional for all those doing Zoology

-s-
optional for all students in the faculty

-*-
Compulsory with a pass. Grade will not be Considered for the GPA.

-#-
these optional units have to be selected by students based on their research Project

B.Sc. (General) Degree Course Units

Each student should take course units having minimum cumulative credit value of 27.0

FIRST YEAR — *Total Credits = 10*

Semester I

ZOO 117 1.0	Histology	c
ZOO 118 1.0	Animal Diversity	c
ZOO 120 1.0	Laboratory and Field Work	a
ZOO 126 1.0	Evolution	c
ZOO 128 1.0	Cell Biology	c

Semester II

ZOO 121 1.0	Ecology	c
ZOO 124 1.0	Comparative Functional Antomy	c
ZOO 125 1.0	Laboratory and Field Work	a
ZOO 129 1.0	Fundamentals of Environmental Science	c
ZOO 130 1.0	Insect Biology	c

SECOND YEAR — *Total Credits = 10*

Semester I

ZOO 215 1.0	Biostatistics	*
ZOO 218 1.0	Animal Behaviour	c
ZOO 219 1.0	Parasitology	c
ZOO 220 1.0	Laboratory and Field Work	a
ZOO 230 2.0	Animal Physiology	c

Semester II

ZOO 224 1.0	Biodiversity and Conservation	c
ZOO 226 1.0	Laboratory and Field Work	a
ZOO 228 1.0	Developmental Zoology	c
ZOO 231 2.0	Genetics and Molecular Biology	c

THIRD YEAR — ***Total Credit = 20***

Semester I

ZOO 324 2.0	Surface and Ground Water Ecology (Based on ARM 301 2.0)	s
ZOO 325 1.0	Research Project	s
ZOO 326 1.0	Laboratory and field Work	a
ZOO 328 2.0	Marine Fisheries Management (Based on ARM 202 2.0)	s
ZOO 330 1.0	Environmental Toxicology	s
ZOO 338 1.0	Fundamentals of Insect Pest Management	s
ZOO 340 1.0	Wildlife Ecology	s
ZOO 342 2.0	Recombient DNA Technology	s

Semester II

ZOO 322 2.0	Aquaulture and Ornamental Fish Breeding	s
ZOO 327 2.0	Nutrition	s
ZOO 332 1.0	Environmental Physiology (Based on ARM 310 1.0)	s
ZOO 333 1.0	Laboratory and Field Work	a
ZOO 343 1.0	Fundamentals of Immunology	o
ZOO 344 1.0	Fundamentals Microbial Ecology	s
ZOO 345 1.0	Wildlife Management	s
ZOO 346 1.0	Toxicology of Insecticides	s
ZOO 347 1.0	Integrated Watershed Management (Based on ARM 311 1.0)	s

B Sc Special Degree Course Units

Part I — ***Total Credit = 30***

Semester I

ZOO 324 2.0	Surface and Ground Water Ecology (Based on ARM 301 2.0)	s
ZOO 326 2.0	Laboratory, Field and Museum Work	a
ZOO 328 2.0	Marine Fisheries Management (Based on ARM 202 2.0)	s
ZOO 330 1.0	Environmental Toxicology	s
ZOO 335 2.0	Fundamentals of GIS	s
ZOO 336 1.0	Coastal Zone Management (Based on ARM 315 1.0)	s
ZOO 337 1.0	EIA Methodologies	s
ZOO 338 1.0	Fundamentals of Insect Pest Management	s
ZOO 340 1.0	Wildlife Ecology	s
ZOO 342 2.0	Recombinant DNA Technology	s
ZOO 348 2.0	Statistical Data Analysis	*
ZOO 361 1.0	Medical Entomology	s

Course Type

-a-
compulsory

-c-
core

-o-
optional for all those doing Zoology

-s-
optional for all students in the faculty

-*-
Compulsory with a pass. Grade will not be considered for the GPA.

-#-
these optional units have to be selected by students based on their research project

Course Type

-a-
compulsory

-c-
core

-o-
optional for all those doing Zoology

-s-
optional for all students in the faculty

-*-
Compulsory with a pass. Grade will not be Considered for the GPA.

-#-
these optional units have to be selected by students based on their research project

Semester II

ZOO 322 2.0	Aquaculture and Ornamental Fish Breeding	s
ZOO 327 2.0	Nutrition	s
ZOO 332 1.0	Environmental Physiology	s
ZOO 333 2.0	Laboratory, Field and Museum work	a
ZOO 343 1.0	Fundamentals of Immunology	o
ZOO 344 1.0	Fundamentals Microbial Ecology	s
ZOO 345 1.0	Wildlife Management	s
ZOO 346 1.0	Toxicology of Insecticides	s
ZOO 347 1.0	Integrated Watershed Management (Based on ARM 311 1.0)	s
ZOO 349 2.0	Marine Coastal Ecology (Based on ARM 309 2.0)	s
ZOO 355 1.0	Hematology	s
ZOO 356 1.0	Radiation Biology	s
ZOO 362 2.0	Research Methodology	s

Part II ***Total Credit = 20***

Semester I

ZOO 400 2.0	Advanced Immunology	o,#
ZOO 401 2.0	Fisheries Management	o,#
ZOO 402 2.0	Food chemistry	o,#
ZOO 404 2.0	Advanced Ichthyology	o,#
ZOO 405 2.0	Fundamental Concepts in Agricultural Entomology	o,#
ZOO 406 2.0	Molecular Genetics	o,#
ZOO 407 2.0	Advanced Microbial Ecology	o,#
ZOO 408 2.0	Wildlife Conservation and Management	o,#
ZOO 409 2.0	Arthropod Vectors of Human Diseases	o,#
ZOO 411 3.0	Seminar I - Special Topics in Zoology	a
ZOO 412 1.0	Literature Review	a
ZOO 413 2.0	Biochemical Signaling	o,#
ZOO 430 2.0	Fresh water Pollution and Management	o,#

Semester II

ZOO 414 2.0	Mo1ecular Principles of Human Diseases	o
ZOO 421 2.0	Fish Population Dynamics	o,#
ZOO 422 2.0	Food Management	o,#
ZOO 423 2.0	Limnology- Advanced Aspects	o,#
ZOO 424 2.0	Aquaculture Engineering Principles	o,#
ZOO 425 2.0	Bio-intensive Integrated Pest Management	o,#
ZOO 426 2.0	Mo1ecular Systematics	o,#
ZOO 427 2.0	Applications of Microbial Ecology	o,#
ZOO 428 2.0	Tetrapod Biology	o,#
ZOO 429 2.0	Mosquito Biology	o,#
ZOO 431 2.0	Seminar II - Current Topics in Zoology	a
ZOO 491 8.0	Research Project (Semester I & II)	a

Course Type

-a-
compulsory

-c-
core

-o-
optional for all those doing Zoology

-s-
optional for all students in the faculty

-*-
Compulsory with a pass. Grade will not be Considered for the GPA.

-#-
these optional units have to be selected by students based on their research Project

ASP/ASB/ASC



B.Sc. (Honours) Degree in Applied Sciences (Four-year Extended Degree Programme)

"Offered by the Faculty of Applied Sciences"

The B.Sc.(Honours) Degree in Applied Sciences prepares students to be performance oriented to meet current global standards as well as to contribute to the socio-economic development of the country by combining academic excellence with practical experience.

B.Sc. (Honours) Degree in Applied Sciences

Course Code: ASC / ASP / ASB

Duration: Additional 1 year

For whom

This program is for students who have entered the Faculty of Applied Sciences of University of Sri Jayewardenepura through either Physical, Biological or Polymer Science stream and completed their general degree with a minimum GPA of 2.5 at the end of their third year B.Sc programme. It is a professional degree program, which is multidisciplinary in nature and offered by eight departments (Mathematics, Chemistry, Physics, Zoology, Botany, Forestry & Environmental Science, Computer Science and Statistics) of the faculty as a cumulative effort mainly for catering to the industrial sector in Sri Lanka. The focus of this program is to produce highly competent, quality, employable graduates who will meet the demands of the industrial sector in the relevant fields with suitable, practical knowledge who could provide immense contribution to the development of the national economy. The intake is limited to maximum of 100 students.

Career opportunities

There is a growing demand for graduates with professional qualifications to meet the current and future needs of the industrial sector in



Sri Lanka. As such, establishing this degree as a four year program with an industrial project component not only uncovers the vast amounts of job opportunities available but also allows our students to pursue higher studies in international universities by fulfilling the requirements of a four year degree. As science graduates are not restricted to a single field, this will open up a multitude of job opportunities in academia as well as in the industry. As a result, the proposed degree program will definitely be highly recognized worldwide.

Course overview

B.Sc. (Honours) Degree in Applied Sciences is a full time four year degree programme conducted in English medium which extends through the general degree program from either Physical, Biological or Polymer Science stream. The programme is assessed at SLQF 6/ NVQL 7 level in the Sri Lankan Qualification Framework (SLQF) of Ministry of Higher Education.

Each student should take course units having a minimum cumulative credit value of 30 in the fourth year after completion of 90 credits from their B.Sc General Degree Programme. There will be two semesters of fifteen weeks and students should register for 18 credits in the first semester including 10 core credits (**c**) offered by the Faculty of Applied Sciences and 8 optional credits (**o**) offered by each department based on the selection criteria obtained from the Program Management Committee (PMC). In the second semester, students should register for a total of 13 credits (**a** and **c**), where students will engage in industrial training and an industrial based project (10 compulsory credits) for 4 days of the week and have to attend the university a single day by taking 2 core credits as assigned by the PMC.

Selection criteria

At the end of the third year, students who are interested in the degree program are required to state their preferences with respect to the field of study in the application form. Additionally, applicants should have passed the compulsory English course unit examinations conducted by the Faculty during the first three semesters and earned at least an average **C** grade for Compulsory English. The students will be selected for the relevant fields solely by their GPA and the availability of resources in the respective field as decided by the PMC. Students who wish to be selected for the programme are required to maintain satisfactory attendance for courses offered by certain Departments.

Instruction and assessment

Students' performance at each course unit is assessed and graded by one or more theory based examinations, continuous assessments, assignments, reports, case studies, oral examination, etc as specified by the lecturer-in-charge in the respective course unit. Students will be informed on the method of assessment at the beginning of the semester by the course lecturer. When there are multiple examination for a course unit, marks obtained by the student for each examination is combined in order to obtain a final grade.

For further information please contact:

Dr. Pahan Godakumbura,
Program Coordinator
E mail: pahanig@sjp.ac.lk

FOURTH YEAR

The relevant course units are listed below.

Course type

a: Candidates should register and follow these compulsory course units and should obtain a minimum specified grade at the examination to qualify for the degree and/or Class.

c: Candidates should register, and follow these core course units to qualify for the degree or class.

n:These course units are chosen by candidates according to their preference, but based on the selection criteria set by the PMC. To register for this course, candidates should not have been registered for this field of the study at USJP previously.

(eg:Those who have not taken Management in B.Sc general degree program can register for ASP 434 2.0 Industrial Management)

o: These course units are chosen by candidates according to their preference in the relevant fields, but based on the selection criteria set by the PMC. This course unit may or may not have a pre-requisite in the relevant filed.

(Four-year Extended Degree Programme)

Semester 1

ASC 401 2.0	Quality Assurance and Standards	c
ASC 402 2.0	Waste Management and Cleaner Production	c
ASC 403 2.0	Entrepreneurship and Small Business Management	c
ASC 405 2.0	Research Methodology, Scientific Writing & Business English* (*Prerequisite: Average C pass for Compulsory English)	c
ASC 407 2.0	Scientific Education and Teaching Methodology	c

Optional Course Units Offered from Departments

Students must take 8 credits from the following courses offered by each department according to their interest. Students may follow some of the following course units in the fourth year if they have not followed them before. Some of the courses have prerequisites included therein.

ASP 401 2.0	Environmental and Green Chemistry	o
ASP 402 2.0	Modeling and Computational Chemistry	o
ASP 403 2.0	Soil Science and Mineral Based industries	o
ASP 404 2.0	Biological Sensors and Imaging	o
ASP 405 2.0	Chemistry of Cosmetics and Toiletries	o
ASP 411 2.0	Polymer Blends and Nano Composites	o
ASP 412 2.0	Industrially Important Polymers	o
ASP 413 2.0	CAD Designing (web based course)	o
ASP 415 2.0	Introduction to Computational Tool for Polymer Technology	o
ASP 421 2.0	Computational Mathematics*(*Prerequisite: Calculus I and II)	o
ASP 422 2.0	Mathematical Modeling II	o
ASP 423 2.0	Graph Theory with Applications	o
ASP 424 2.0	Optimization I	o
ASP 425 2.0	Financial Mathematics	o
ASP 426 2.0	Operational Research	o

Course Type

-a-
compulsory

-c-
core

-n-
chosen by candidates according to their preference, but based on the selection criteria set by the PMC. To register for this course, candidates should not have been registered for this field of study at USJP previously.

-o-
Chosen by candidates according to their preference in the relevant fields, but based on the selection criteria set by the PMC.

Course Type

-a-
compulsory

-c-
core

-n-
chosen by candidates according to their preference, but based on the selection criteria set by the PMC. To register for this course, candidates should not have been registered for this field of study at USJP previously.

-o-
Chosen by candidates according to their preference in the relevant fields, but based on the selection criteria set by the PMC.

ASP 427 2.0	Actual Science	o
ASP 428 2.0	Applicable Mathematics	o
ASP 429 2.0	Non-linear Differential Equation and Dynamical System	o
ASP 431 2.0	Operations Management	o
ASP 432 2.0	Supply Chain Management	o
ASP 433 2.0	Project Appraisal Techiques	o
ASP 434 2.0	Industrial Management	n
ASP 435 2.0	Accounting & Finance	o
ASP 441 2.0	Physics of Ceramics and Glass	o
ASP 442 2.0	Applied Geophysics	o
ASP 443 1.0	Computational Physics in Advanced Programming	o
ASP 444 1.0	Physics of Agricultural materials	n
ASP 445 1.0	Philosophy of Science	o
ASP 446 1.0	Fundamentals of Digital Signal Processing	o
ASP 447 1.0	Advanced Nanophysics	o
ASP 448 1.0	Nuclear Physics II	o
ASP 449 1.0	Digital Image Processing	o
ASP 451 1.5	Multivariate Statistical Methods I* (*Prerequisite:STA 201 1.0 Statistical Inference, STA 302 2.0 Distribution Theory II, MAT 126 2.0 Linear Algebra)	o
ASP 452 2.0	Advanced Designs of Experiments	o
ASP 453 2.0	Generalized Linear and Non-Linear Models	o
ASP 454 2.0	Programming and Data Analysis (*Prerequisite:STA 315 2.0 Programming and Data Analysis with R)	o
ASP 455 2.0	Statical Methods for Research	n
ASP 456 2.0	Categorical Data Analysis	o
ASP 461 2.0	Data Structurers and Algorithms II	a

ASP 462 2.0	Service Oriented Computing	o
ASP 463 2.0	Mobile Computing	o
ASP 464 2.0	Multimedia and Hypermedia Technology	o
ASP 465 2.0	Data Warehousing. Data Mining and Information Retrieval	o
ASP 466 2.0	Adavance Data System	o
ASP 471 2.0	Enviromental Policy	o
ASP 472 2.0	Advanced Economic Modeling	o
ASP 473 2.0	Advanced Econometrics II	o
ASP 474 2.0	International Economics	o
ASP 475 2.0	Watershed and River Basin Management	o
ASP 476 2.0	Sustainable Building Design	o
ASP 477 2.0	Sustainable Energy Management and Technology	o
ASB 406 2.0	Postharvest Technology	o
ASB 423 1.0	Bioethics and Bio safety	o
ASB 424 2.0	Advanced Plant Pathology	o
ASB 425 2.0	Plant Biochemistry	o
ASB 426 2.0	Protein structure and function	o

Semester II

ASC 404 1.0	Industrial Law and Intellectual Property	c
ASC 406 1.0	Seminar/Workshop	c
ASC 408 10.0	Inplant Training (Internship and Indusrtial Based Project)	a

Course Type

-a-
compulsory

-c-
core

-n-
chosen by candidates according to their preference, but based on the selection criteria set by the PMC. To register for this course, candidates should not have been registered for this field of study at USJP previously.

-o-
Chosen by candidates according to their preference in the relevant fields, but based on the selection criteria set by the PMC.



"Courses offered by the English Language Teaching Unit"

English Language Teaching Unit

Scientific Communication Programme

Rationale

The English proficiency course offered by the English Language Teaching Unit to the students of the Faculty of Applied Sciences is geared to assist students to deal with any language problem they might have when they follow their courses in the English medium in their faculty. The lessons planned for them in the first year first semester, will cover the skills of listening, speaking, reading and writing. It is mandatory to pass the English Proficiency Examination in order to obtain the degree followed in the university.

A placement test will be conducted during the orientation programme and the students who score 40 marks or above in the placement test will be exempted from the on-going English classes (they are considered as having passed the Compulsory English requirement.).

The on-going classes will be arranged for the students who have scored below 40 marks in the placement test and these classes are aimed at developing the language skills needed to follow their academic courses successfully.



Course Content

Accordingly, students will learn summary writing, paragraph writing, report writing and paraphrasing, to improve their writing skills. The grammar that they need to know to write effective sentences will also be taught in context, so that, at the end of the course students will know how to construct simple, compound and complex sentences and use all tenses, in the active and passive voice, successfully.

They will be taught how to take effective notes in the listening activities planned for them. While many language games and activities are planned for the improvement of their speech, they will be trained to make effective Power Point presentations as well as subject specific poster presentations.

In addition to these compulsory courses, a certificate course in English, which is optional, will be conducted for students on request.

Final evaluation for the on-going programme

I. 70 marks for the written examination
II. 30 marks for continuous assessments

Course Type

-a-
On-going Programme

-o-
Optional course

FIRST YEAR

The Placement Test

A placement test which will assess listening, writing and speaking skills of new entrants, will be conducted during the orientation programme.

The students who score 40 marks or above in the placement test will be exempted from the on-going English classes.

The on-going programme is offered for students who score below 40 marks in the placement test. These students should earn at least a C grade for Compulsory English Examination in order to qualify for the degree.

Semester I

ENG 201 2.0	English for Scientific Communication	a

Semester II

ENG 201 2.0	English for Scientific Communication	a

SECOND YEAR

Semester I

CETE 2101	Certificate Course in English I	o

Semester II

CETE 2101	Certificate Course in English II	o



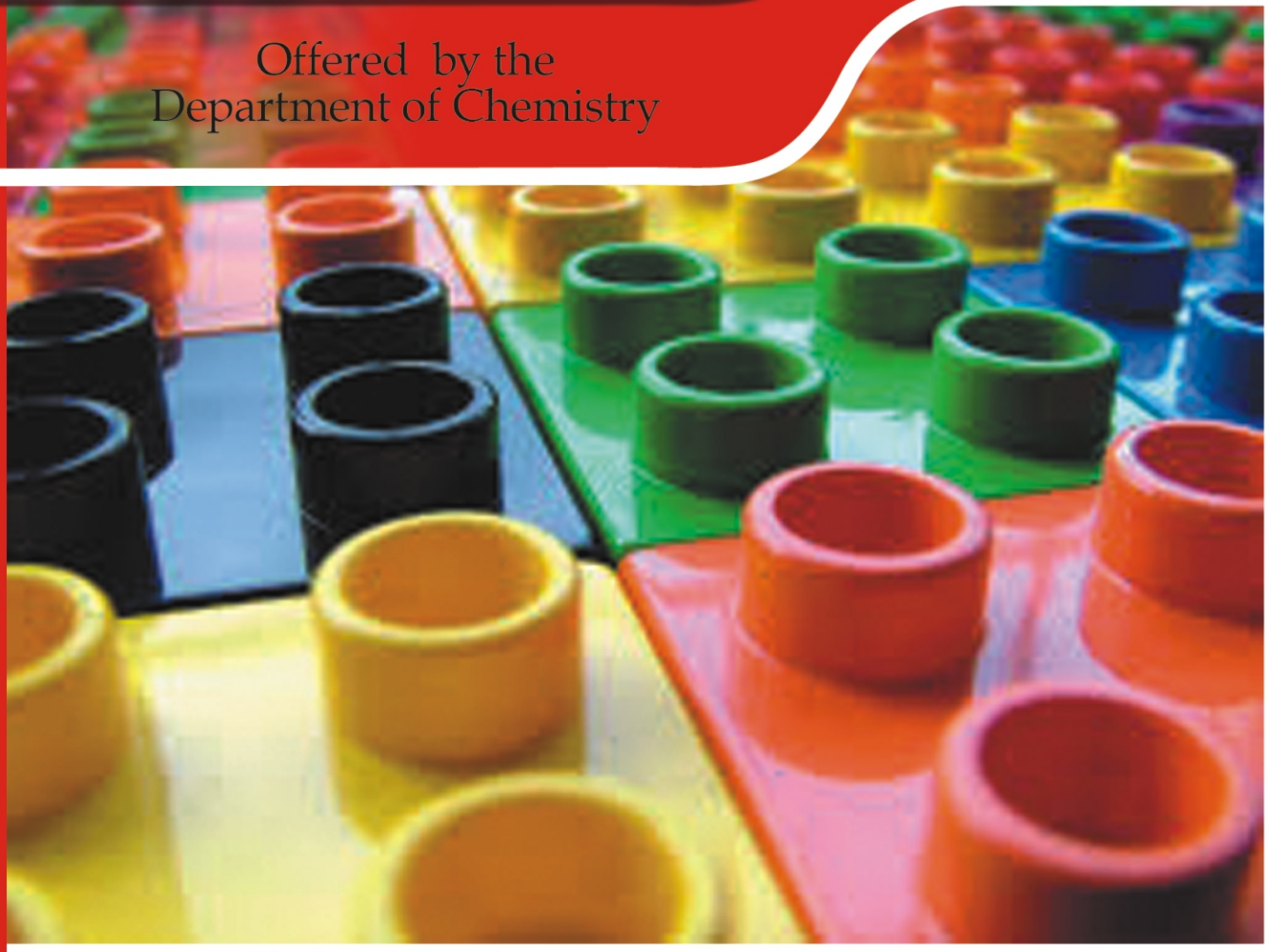




Postgraduate Courses Degree Programmes

M.Sc. Degree in Polymer Science and Technology

Offered by the Department of Chemistry



M.Sc. Degree Programme in Polymer Science and Technology

Offered by the Department of Chemistry

Why Study Polymer Science?

Today polymers have become indispensable to mankind. Rubber and plastic have become integral parts of our daily lives. There applications are everywhere, from a simple bouncing ball to rocket science, beautiful jewelries to artificial hearts. We use polymers from morning till night, eg: bed, slippers, toothbrush, cups, plates, mobile phones, cloths, car, tyres, computer to television. In general 80% materials used daily by a regular human being is made out of polymers. Simply we are living in a world of polymers, so why not study them!

History of the M.Sc. program in Polymer Science and Technology at USJP

Polymer industry has become a major contributor towards our national economy since the early 1930's. By recognizing the national need of quality education in this field of science, a Masters Degree program in Polymer Science and Technology (PST) was introduced in 1974 by the Department of Chemistry with the aid of University of Aston, United Kingdom.

Course description

Our endeavor is to develop enlightened members of the polymer society. We pursue excellence in graduate education. Therefore the program is designed to embrace topics from introductory level to high end applications of polymer science and technology. This 24 month M.Sc. program has been aimed for training much needed polymer scientists, polymer technologists, quality control officers, and plant managers for booming Sri Lankan rubber and plastics industry. Thus the course is suitable for the professional community who are engaged in PST and for graduates seeking entry to such organizations.

Careers

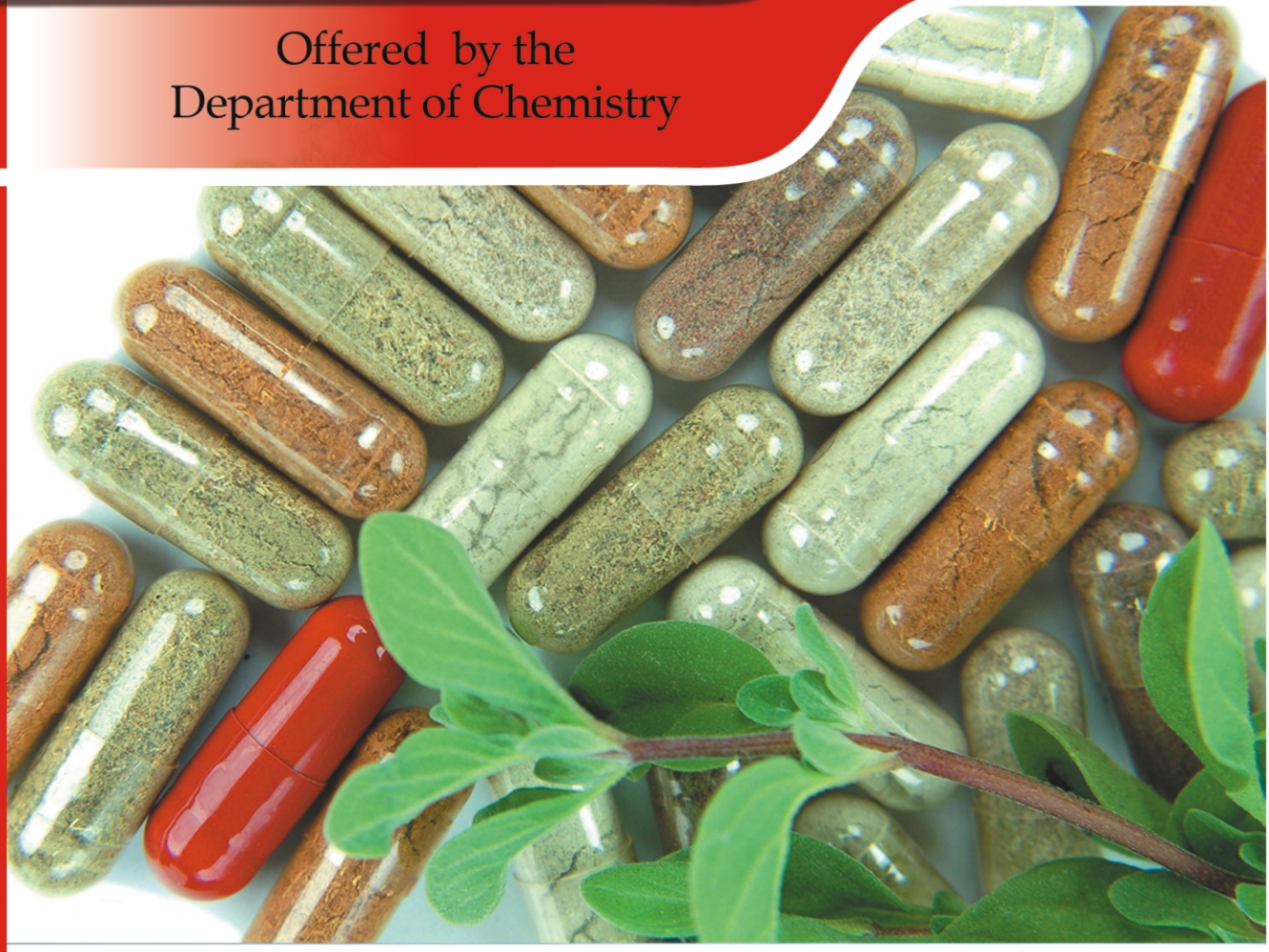
The program encompasses a broad spectrum of both theoretical and practical aspects in PST. By gaining good theoretical and practical insight students find it easy to establish themselves in the Sri Lankan polymer based industries and academia. In addition, the course curriculum contains sufficient academic depth such that it will create a golden platform for students to proceed for higher degrees at national as well as international level.

For more information contact

Dr. M. A. M. Maddumaarachchi
Coordinator/M.Sc. In Polymer Science and Technology
+94 0112758451
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Website: http://science.sjp.ac.lk/che/pg/

M.Sc. Degree in Science and Technology of Herbal Products

Offered by the Department of Chemistry



M.Sc. Degree in Science and Technology of Herbal Products

Offered by the Department of Chemistry

Introduction

Sri Lanka has a large number of medicinal and aromatic plant species and has many industries that utilize such plant materials. Sri Lanka also has its own traditional system of medicine based on the ancient system of Ayurveda. Today, there is an increased demand for herbal products such as cosmoceuticals, nutraceuticals, and herbal health care products, not only in Sri Lanka but also globally. Therefore, there is a need to provide the necessary scientific knowledge and develop human resources for the industrial utilization of medicinal and aromatic plants. This will open up a wide range of opportunities in industry, research and business development. Keeping this in mind the Department of Chemistry of the University of Sri Jayewardenepura has introduced for the first time in Sri Lanka, a full time two-year postgraduate course leading to a Masters Degree in Science and Technology of Herbal Products.

Course description

The M.Sc. program has been designed to encompass a broad spectrum of topics to provide necessary scientific knowledge and practical skills in the field of Science and Technology of Herbal Products. It is a full time, two-year program. The first academic year will comprise of lectures, laboratory work, field visits, assignments and a seminar and the second academic year will comprise of the research component and a seminar.

Careers

The M.Sc. program will help graduates seek employment in government and private sector institutions that produce herbal products utilizing medicinal and aromatic plants. This program will also open up opportunities in research at national as well as international level in areas related to Science and Technology of Herbal Products. In addition, this will provide background information for those interested in starting up their own enterprises.

For more information contact

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Coordinator/M.Sc. in Science and Technology of Herbal Products
+95112758560
Email: isurika.fernando@sjp.ac.lk
Web: http://www.sci.sjp.ac.lk/sc/che/herbal-pro-msc/

M.Sc. Degree / Postgraduate Diploma in Industrial Analytical Chemistry

Offered by the Department of Chemistry



M.Sc. Degree/Postgraduate Diploma in Industrial Analytical Chemistry Offered by the Department of Chemistry

Introduction

Chemical analysis plays a vital role in all aspects of life. There is an increasing demand for qualified analytical chemists throughout the world. By recognizing the need of qualified personnel in this field of science, a Masters Degree program as well as a Post Graduate Diploma in Industrial Analytical Chemistry has been initiated by the Department of Chemistry in 2013.

Course description

The Department of Chemistry at University of Sri Jayewardenepura is equipped with high-end analytical tools where students will get hands-on experience in achieving the correct level of accuracy in each measurement, which is the key for developing a qualified analytical chemist. The second year research component and the case studies are specifically designed to solve analytical chemistry problems in the industrial setup. The duration for the M.Sc. Degree is two years where as the duration for the Post Graduate Diploma is one year.

Entry requirements

Applicants should possess any of the following:

A B.Sc. degree from any recognized university having a minimum 30 credit units in Chemistry

Any other special qualification equivalent to a degree recognized by the UGC or considered appropriate by the University Senate

Students who are awaiting results are also eligible to apply.

Careers

This course is designed to improve the analytical chemistry skills of government and industrial employees who are engaged in chemical, pharmaceutical, bio-analytical, forensic, food and environmental fields. This also gives an opportunity for university graduates to improve their entrance potential for industrial positions as well as for further higher studies.

For more information contact

Dr. Champa D. Jayaweera
Coordinator
M.Sc. Degree/P.G Diploma in Industrial Analytical Chemistry
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Website: www.sjp.ac.lk/che/analytical

M.Sc. Degree / Post Graduate Diploma in Industrial Mathematics

Offered by the Department of Mathematics



M.Sc. Degree/Postgraduate Diploma in Industrial Mathematics
Offered by the Department of Mathematics

Introduction

Being the first Faculty of Applied Sciences of the country and realizing the potential of graduates with a strong mathematical background, we launched the first Postgraduate Diploma/M. Sc. Program in Industrial Mathematics in Sri Lanka, in 1996.

By this program it is hoped, to bring together the mathematically oriented personnel employed in various industries and the application orientated researchers within the university community, to provide means of further improving their effectiveness. It is a well-accepted fact that science and technology play a vital role in the process of development. We will concentrate on utilization of the resources of this country for the benefit of its own people.

The Growing Importance of Industrial Mathematics

Success in Industrial Mathematics is based on applying existing tools and computational techniques in addition to discovering new tools and techniques. The mathematical scientist in industry must have a broad background to be able to recognize when the model or solution procedure has already been investigated. Skills in formulation, modeling and implementation are critical in industry. Teamwork, communication skills and breadth of knowledge are also valued in industry.

Course Description

Total number of contact hours (lectures and practicals) of the M.Sc. program exceeds 400 hours. Therefore, the M.Sc. program is categorized as a full time program. Naturally, Industrial Mathematics may borrow from a variety of mathematical disciplines, such as Numerical Analysis, Computational Mathematics, Partial Differential Equations, Dynamical Systems, Control and Optimization theory, Probability and Statistics and Discrete Mathematics. The common feature running through this program is the goal of getting better understanding of industrial models and processes through mathematical ideas and computations.

Programme Eligibility

Candidates applying for the PG Diploma/ M.Sc. program in Industrial Mathematics should have a Bachelor's Degree with Mathematics as a component preferably B.Sc. (Special) Mathematics, Statistics, Computer Science, B. Sc.(Physical Science) or B. Sc. (Engineering) graduates.

Mrs. D.S. Rodrigo
Coordinator
PG Diploma/M.Sc. in Industrial Mathematics
Department of Mathematics
Phone: +94 11 2758390
Fax : +94 11 2803470

M.Sc. Degree / Post Graduate Diploma in Fisheries and Aquatic Resource Management

Offered by the Department of Zoology



M.Sc. Degree/Post Graduate Diploma in Fisheries and Aquatic Resourse Management
Offered by the Department of Zoology

Introduction

The postgraduate degree program is designed to meet the increasing need for highly skilled multi-disciplinary decision makers, entrepreneurs, biologists or biologically literate mathematicians and statisticians in order to address the management challenges of the present day aquatic resources facing. It is of equal interest to recent graduates seeking employment prospects in aquatic resources management. This is the pioneer MSc degree in the disciple in Sri Lanka which has produced hundreds of qualified resource managers working in key local and foreign institutes.

Course description

The duration for the M.Sc. Degree is two years where as the duration for the Post Graduate Diploma is one year.

Entry qualifications

First degree in Biology, Veterinary Science, Chemistry, Physical Sciences, Geology, Oceanography, Environment Science, Natural Resources, Agriculture

Any other degree with 3 years of experience in fisheries or aquatic resources sector.

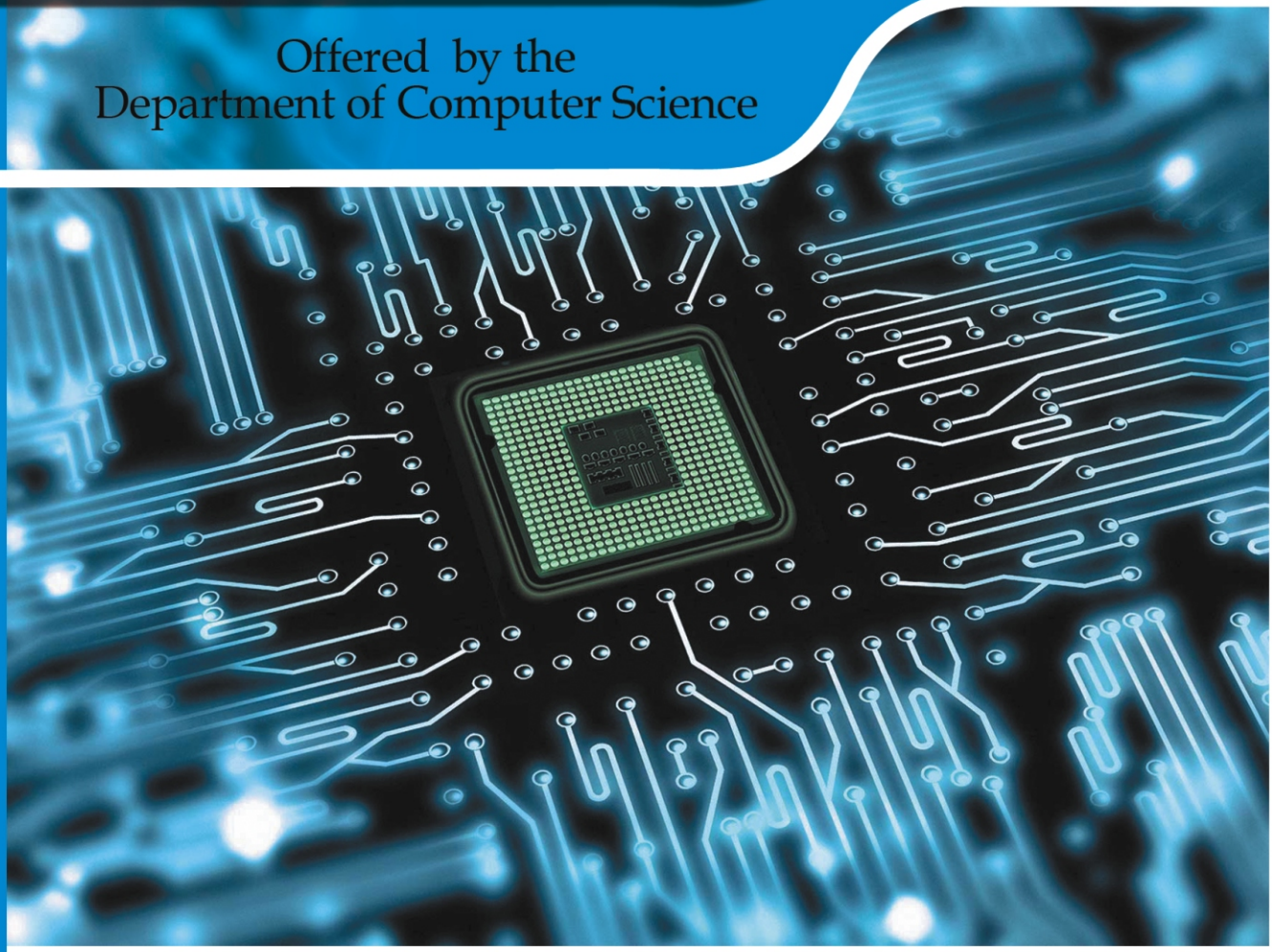
Any other special qualifications equivalent to a degree recognized by the University Grant Commission with at least 5 years of experience in the field of fisheries and aquatic resources

For more information contact

Dr Kamal Ranatunga
Coordinator/M.Sc. in Fisheries and Aquatic Resources Management
Tel: +94 112 804515 , +94 112 758165
Fax: +94 112 802914
Email: mscfish@gmail.com
Website: www.fish.lk

M.Sc. Degree / Post Graduate Diploma in Computer Science

Offered by the Department of Computer Science



M.Sc. Degree/Post Graduate Diploma in Computer Science
Offered by the Department of Computer Science

Introduction

This program has been designed for those who are interested in pursuing higher studies in the field of Computer Science. The curriculum of this program is designed to provide students with a good grasp of core contents of Computer Science which any professional in the subject is expected to know, to foster logical and analytical thought, independent study, self-motivation and communication skills, to make aware of research results and latest trends in the key areas of the subject, to provide opportunities to gain practical experience of computing, using modern hardware and software, in order to provide motivation for and deeper understanding of material taught in formal lectures, to produce graduates with sound knowledge in both theory and practice in Computer Science, including current emerging technologies and experimental learning, to prepare students to contribute to the computing profession upon graduation and to provide the necessary background required to read for a Ph.D. in Computer Science.

Eligibility

1. Bachelors degree from a recognized university or any other equivalent qualification in the field of Computer Science or ICT that would be acceptable to the Faculty of Applied Sciences and the senate of the university.
2. All lectures, practical classes and examinations are conducted in English. Therefore, the candidates must be fluent in English.

Target group

- Those who need academic qualifications in Computer Science.
- Those who are planning to start a career or already employed in a computing environment.
- Those who teach Computer Science or ICT in schools or universities or other educational institutes.

For more information contact:

Mr. D. D. A. Gamini
Coordinator/M.Sc. Programme in Computer Science
Phone: 011 2758913
E mail: gamini@dscs.sjp.ac.lk

M.Sc. Degree / Post Graduate Diploma in Forestry and Environmental Science

Offered by the Department of Forestry and Environmental Science



M.Sc. Degree/Post Graduate Diploma in Forestry and Environmental Management

Offered by the Department of Forestry and Environmental Science

Introduction

With the concept of "sustainability" percolating into virtually all key sectors of the economy, applied knowledge in environment, natural resources and their management has become a skill of demanded in the modern competitive career market. The MSc./Post Graduate Diploma in Forestry and Environmental Management offered through the Department of Forestry and Environmental Science is designed to equip you with the necessary knowledge and skills to take up diverse challenges in naturel resource management.

Be a part of the tradition...

Postgraduate education in Forestry and Environmental Sciences at the Department of Forestry and Environmental Science University of Sri Jayewardenepura has a history of more than 30 years. Since 1983, we have produced over 500 professionals with Masters qualifications, who are currently holding top managerial and executive positions in various forestry and environment related institutions, and ably contributing to the management of country's natural resources.

Course description

M.Sc. in Forestry and Environmental Management is a full time two-year course whereas Post Graduate Diploma is a one year course. The course consists of core courses, assignments and a research project. The coursework component of both M.Sc. and Post Graduate Diploma programs consists of an integrated series of lectures selected from 4 taught modules.

During the first year, both M.Sc. and Post Graduate Diploma students follow a common program that provides a comprehensive background. During the second year, M.Sc. candidates concentrate more on applied aspects as well as on the research project.

Entry requirements

B.Sc. Degree in Biological or Physical Science, Forestry and Environmental Science, Geography, Geology, Agriculture, Civil or Chemical Engineering

o r

Four year Degree in Management, Social Science, Economics, with at least 5 years of experience in a relevant field or Any other special qualification equivalent to a degree recognized by the University Grant Commission and considered appropriate by the University Senate, with at least 7 years of experience in the field.

Careers

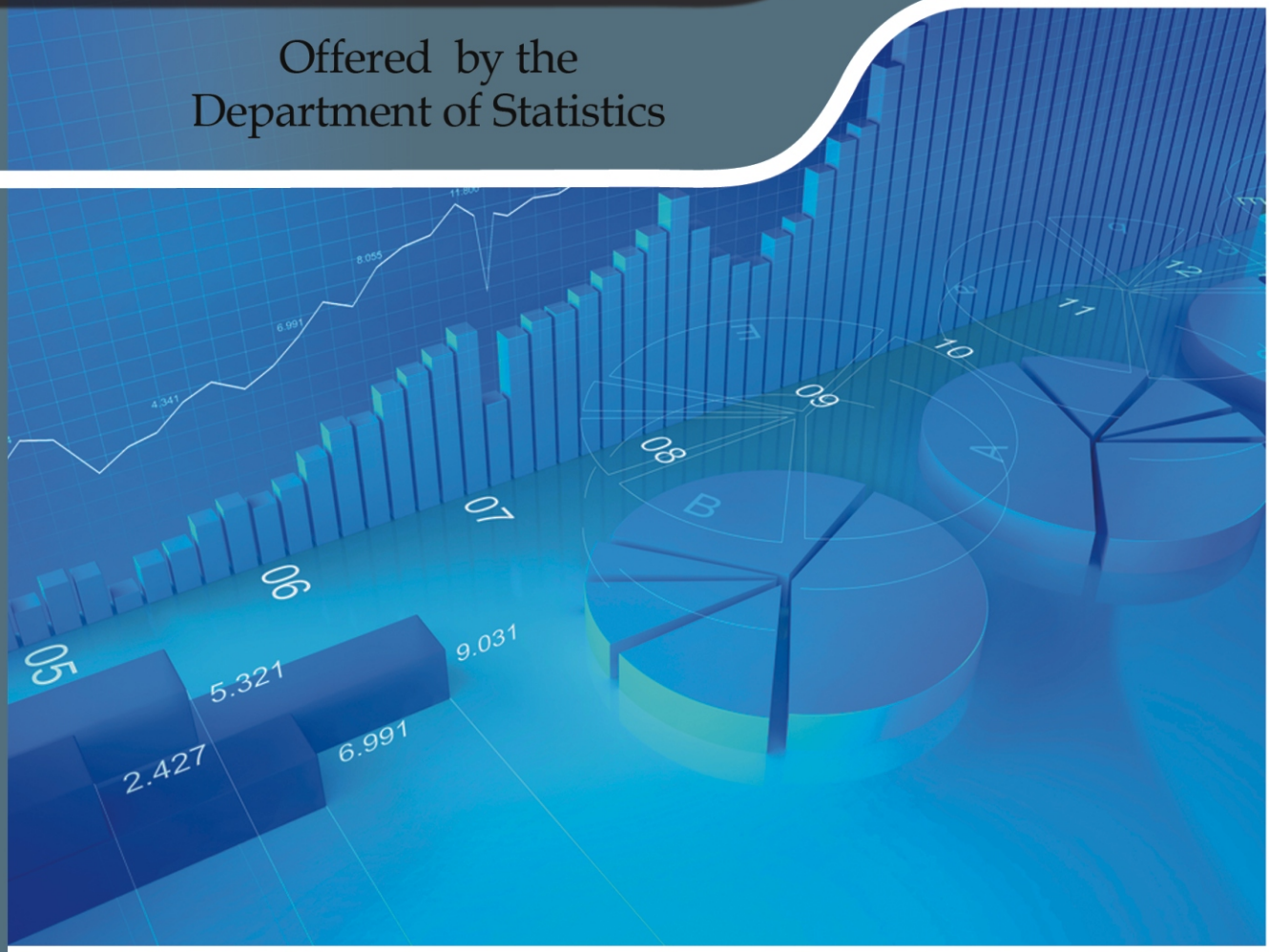
The course is designed to train professionals to undertake tasks in forest and wildlife management, water and other natural resource management, environmental pollution control and use of special tools such as environmental impact assessment, cost benefit analysis, GIS and remote sensing applications in environmental management. As such, this program will open up the pathway to diverse and rewarding careers in government ministries, non-governmental organizations, environmental and business consultancies, public sector organizations, and manufacturing and service industries in the private sector.

For more information contact:

Dr. Priyan Perera
Coordinator - M.Sc./Post Graduate Diploma in Forestry and Environmental Management
Phone (office): (+94) 112758411
Phone (mobile): (+94) 718656457
E-mail: priyan@sjp.ac.lk
Web: http://science.sjp.ac.lk/fes/courses/

Postgraduate Programmes in Applied Statistics

Offered by the Department of Statistics



Postgraduate Certificate/Postgraduate Diploma/M.Sc. by coursework/M.Sc. by coursework and research in Applied Statistics Offered by the Department of Statistics

Why study Statistics?

Statistical thinking and methods are becoming more and more prevalent in an exceptionally wide range of areas. With this postgraduate qualification in Applied Statistics, students can advance their career in almost any field, including education, science, technology, health care, government, or business. In Sri Lanka, qualified statisticians are well received by various institutions such as the Central Bank of Sri Lanka, Department of Census and Statistics and Coconut/Tea/Rubber research institutes to name but a few. The demand for trained statisticians continues to increase in the industry as well as it is becoming more dependent on predictive data and numerical reasoning.

History of the postgraduate programmes in Applied Statistics at USJP

The first ever self-financed postgraduate programme in Sri Lanka, namely the postgraduate Diploma in Statistics, was started in 1968 by the Department of Mathematics of the University of Sri Jayewardenepura. The Department of Statistics and Computer Science restructured and renamed that programme as the M.Sc. Degree/Postgraduate Diploma programme in Applied Statistics in1997. Currently, the postgraduate programmes are being restructured in order to cater for those who wish to obtain one of the following programmes in Applied Statistics: Postgraduate Certificate (SLQF 7), Postgraduate Diploma (SLQF 8), M.Sc. Degree by course work (SLQF 9), M.Sc. Degree by coursework and research (SLQF 10) and will commence following approval by the UGC.

Course Description

Postgraduate Certificate programme in Applied Statistics has been specially designed to provide professionals from various fields with a basic knowledge in Applied Statistics. The duration of the Postgraduate Certificate programme is one year.

Postgraduate Diploma/M.Sc. by coursework/M.Sc. by coursework and research programme in Applied Statistics has been designed to provide graduates from a related field with an opportunity to further develop their knowledge in Applied Statistics. The duration of the Postgraduate Diploma/M.Sc. by coursework is one year whereas the duration of M.Sc. by coursework and research is two years.

Entry qualifications

The Postgraduate Certificate programme in Applied Statistics requires a Bachelor's Degree from any field of study from a university or an equivalent institution which is recognized by University Grants Commission/University of Sri Jayewardenepura. An adequate mathematical knowledge is recommended.

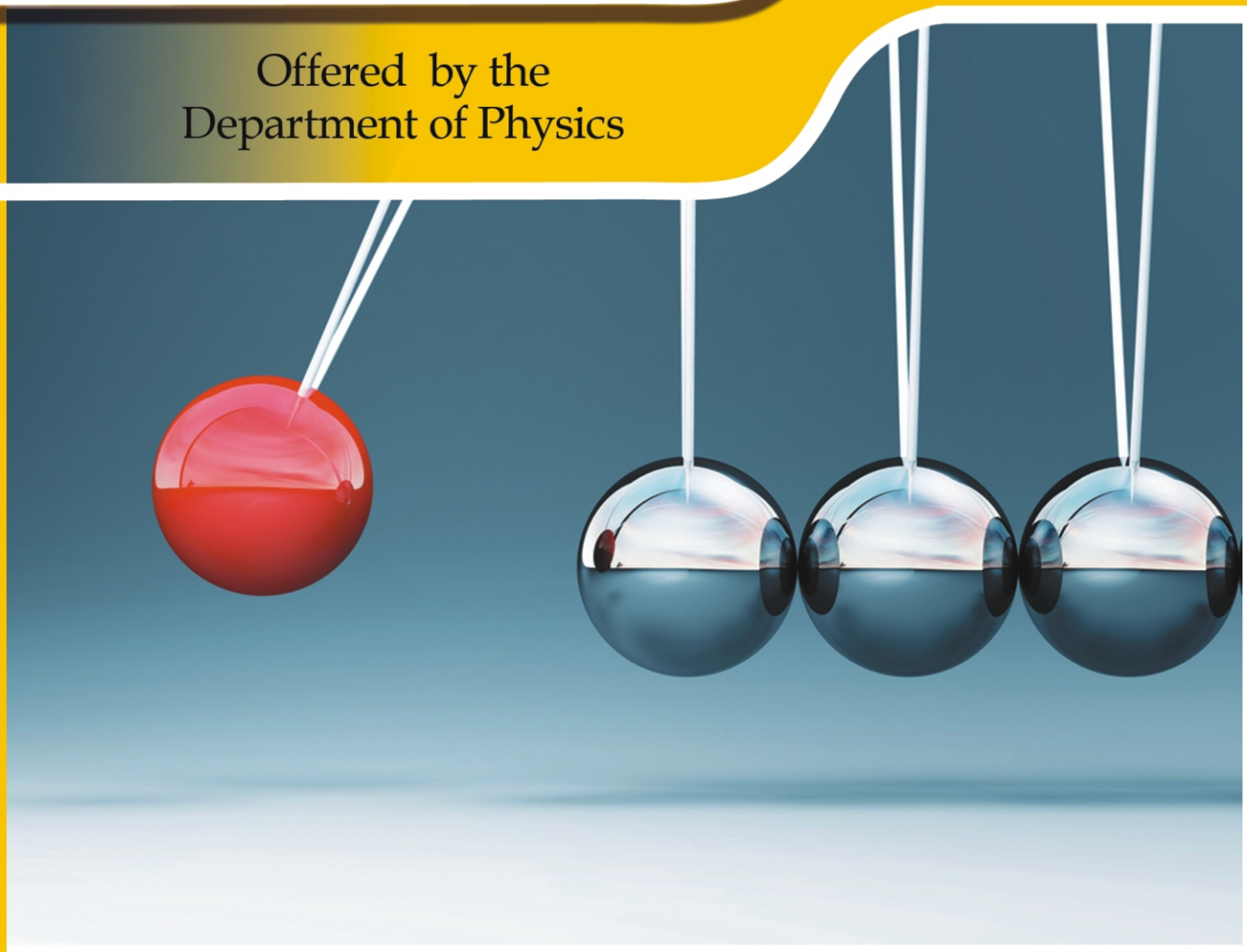
The Postgraduate Diploma/M.Sc. programme in Applied Statistics requires a Bachelor's Degree in statistics and/or mathematics or a related discipline from a university or an equivalent institution which is recognized by University Grants Commission/University of Sri Jayewardenepura.

For more information contact:

Dr. Chathuri Jayasinghe
Coordinator – Postgraduate Programmes in Applied Statistics
Phone: 0112758905
Email: chathuri@sjp.ac.lk

M.Sc. Degree in Physics Education

Offered by the Department of Physics



M.Sc. Degree in Physics Education

Offered by the Department of Physics

Introduction

Physics plays an important role in all aspects of life and is undoubtedly the route to intellectual enlightenment in relation to the physical world. In addition to its well known applications in numerous fields, Physics provides a logical and conceptual framework useful in understanding natural phenomena and processes. Exposing students to physics at early stages therefore will help them to have a proper insight into the physical world. This however cannot be achieved without the active involvement of properly trained teachers who are well versed in principles of Physics as well as those of Education. Academic discipline that covers both these aspects is referred to as Physics education. The Department of Physics wishes to address this problem and proposes to commence a Postgraduate Diploma / M.Sc. programme in Physics Education under the Board of Study of Physical Science of the Faculty of Graduate Studies to fill this lacuna.

Objectives

Objectives of the proposed postgraduate programme are to produce secondary school Physics teachers and other educators in Physics who will be

1. Having a sound knowledge of Physics based on concepts as well relevant aspects of Education.
2. Competent enough to upgrade their knowledge in new areas that will be added to the Physics curriculum from time to time,
3. Having general idea of philosophical aspects of Physics and recent developments and trends in Physics.
4. Competent in using mathematics, computers and microprocessors etc. as tools of teaching of Physics.
5. Sufficiently motivated to use the knowledge of Physics in design low cost equipment for Physics laboratory studies.
6. Sufficiently matured to identify and design projects that would develop skills and competencies in the student and supervise them.
7. Knowledgeable in modern evolution methods
8. Capable of recognizing the usefulness and limitations of Physics and appreciate its appreciates its applicability in other disciplines and everyday life.
9. Capable of developing skills and attitudes in students that will be of long term value in increasingly technological world rather than focusing on large quantities of factual material which will have only short term relevance.
10. Capable of motivating students to use the logical thinking process acquired by studying Physics in addressing other issues.

Entry qualification

Graduates of recognized universities who have offered Physics as a subject are eligible to apply. Preference will be given to those who are in the teaching profession or allied professions.

For more information contact:
Dr. (Mrs.) M.L.C. Attygalle
Coordinator - Msc in Physics Education,
Telephone: 0112758367
Email: lattgalle@sci.sjp.ac.lk

M.Sc. Degree in Food Science and Technology

Offered by the Department of Food Science and Technology



M.Sc. Programme in Food Science and Technology

Offered by the Department of Food Science and Technology

Why Study Food Science?

Food Science and Technology draws on the spectrum of biological and physical sciences, applies them to one of the essentials of life which is none other than food. Food science, not only in the academic, but in the real world sense, relies on mathematics, physics, biology, chemistry, biochemistry, microbiology, engineering, processing, nutrition, biotechnology, marketing and management. The purpose of the M.Sc. degree in Food Science and Technology is to provide the student with an advanced training in a specialization, with a particular emphasis on the acquisition of experience in the strategies and experimental methods of modern, original scientific research.

History of the MSc program in Food Science and Technology at USJP

The national need for human resource development in the field of Food Science and Technology was recognized by USJP as far back as 1969 based on this realization the first ever Post Graduate Diploma in Food Science and Technology in the country was introduced through the Department of Biological Sciences in 1968 due to the efforts of late professor A.C.J. Weerakoon, then professor of Biological Sciences. Subsequently in 1979 this programme was transferred to be managed by the Department of Chemistry. Later in the year 1992, the post Graduate Diploma was upgraded to a Master Degree in Food Science and Technology to be executed through the Department of Chemistry. On establishing the Department Of Food Science and Technology in the year 2005 this master degree programme became to be managed by the Department Of Food Science and Technology under the responsibility of the Faculty of Graduate Studies.

Course description

The course consists of course work, practical classes and a research component geared towards those already employed in the food sector as food technologists, research scientists, academics, trainers, food analysts, QC personnel, factory managers, medical/scientific persons in Nutrition, Food Policy and Food Security or for those wishing to enter a career in the food related sectors as above or enhance knowledge on scientific aspects of food resources and their management for better utilization in business opportunities. Hence the curriculum has been designed to cater to the needs different personnel involved in the food industry.

Entry qualification

Applicants should possess **one** of the following degrees from any recognized university:

B.Sc. degree with Chemistry as a subject

Degree in Agriculture, Medicine, B.V.Sc., B.A.M.S., M.B.B.S., Chem..Eng.,

An equivalent qualification from a recognized higher education institution

Recruitment procedure

Applicants are invited from the candidates who have satisfied the entry requirements. Due to large numbers of candidates applying for this course, suitable candidates are selected by an aptitude test and subsequently with an interview where mostly authenticity of certificates is examined. However, applications sponsored by state and private sector other organizations working in the target food-related areas would be given preference.

Careers

The program prepares those already employed in the food sector as food technologists, research scientists, academics, trainers, food analysts, QC personnel, factory managers, medical/scientific persons in nutrition, food policy and food security or for those wishing to enter a career in the food related sectors. The programme incorporates many different disciplines and through those, it prepares you for a career not only in the food industry, but in many areas that you probably wouldn't even think of.

For more information contact:

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Department of Botany

The mission of the department is to foster, promote and excel in teaching, learning and research in Plant Biology, Microbiology and Plant Biotechnology. Apart from imparting knowledge and developing skills of students on fundamentals of these areas, enhancement of the quality of graduates, quality of teaching and research, and expansion of services offered to industry and society at large are other objectives of the Department.

Introduction:

Plants are the life-givers on earth. As primary producers, they are the first link of all food chains; produce oxygen that we breathe in; they give mankind everything from food, timber, medicine, spices, perfumes and oils to flowers. Can we ever think of an ecosystem without plants?

These are just some reasons why Botany holds a unique position among all sciences. The knowledge of a man will not be complete without the knowledge about trees. Botany enables one to learn about phenomena like the greenhouse effect, environmental pollution, and how to create an entire plant from a cell that is not even visible to the human eye.

Apart from all these, we, Sri Lankans are lucky enough not only to possess a rich biodiversity, but also to inherit an enchanting virgin rain Forest; the Sinharaja, which makes Botany a truly special field.

Degree programmes offered by the department :

The Department of Botany offers three different courses (Plant Biology, Plant Biotechnology and Microbiology), which are designed to provide students with solid preparation to develop a range of skills in above areas of plant sciences together with employability skills such as communication, critical and creative thinking, team work and decision making.

Postgraduate Programmes

The Department offers two postgraduate research degrees; M Phil and PhD in a range of disciplines including Biotechnology, Tissue culture, Microbiology, Molecular Biology, Genetics and Plant Anatomy. It has built up an excellent research culture by having many staff members who have received awards for their innovations.

Facilities in the Department

- Molecular Biology Laboratory :
  A well equipped Biotechnology Laboratory is available for teaching several course units in Plant Biotechnology and also for the use of research students.

- Computer Laboratory:
  A computer laboratory with networking is available for teaching Biometrics, Bioinformatics, Molecular Modelling and Numerical Taxonomy.

- Plant House:
  Three plant houses are available for maintaining live specimens needed for teaching Plant Diversity, Plant Taxonomy, Plant Virology, Plant Tissue Culture etc.

- Tissue Culture Laboratory:
  A fully equipped Tissue Culture laboratory is available for teaching and research purposes.

- Botanical Garden:
  In addition to Greenhouses a botanical garden is available (with a pond) for teaching and research (field experiments/field trials) purposes.

- Herbarium:
  A herbarium comprising wet and dry specimens gives you an opportunity to study the plant diversity of the country.

- Research Laboratories:
  Research laboratories for Plant Tissue Culture, Molecular and Microbiology, Virology and Pathology are available with 24 hour access to research students under the suppuration of senior academic member of the department.

Awards

The following three awards are made available to students who perform exceptionally well in their studies.

1. Prof. Amilasith Yapa Gold Medal:
   This medal is awarded to the student who obtains the highest GPA (Grade Point Average) in B.Sc. (Special) Degree Examination in Plant Biology with a First or Second Class (Upper Division) pass.

2. Prof. H.G. Nandadasa Gold Medal:
   This medal is awarded to the student who obtains the highest GPA in B.Sc. (Special) Degree Examination in Plant Biotechnology with a First class or Second Class (Upper Division) pass.

3. Prof. S. C. Wijeyeratne Gold Medal:
   This medal is awarded to the student who obtains the highest GPA in B.Sc. (Special) Degree Examination in Microbiology with a First Class or Second Class (Upper Division) pass.

Botany and Plant Biotechnology Society

Botany and Plant Biotechnology Society, which was formed in 2006, conducts various activities such as workshops, seminars, public lectures related to current topics in popular science.

For further advice and information please contact;

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Head of the Department
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Senior Professor
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Prof. N. Salim
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Chair, Senior Professor of Botany
Research interests : Begomovirus and potyvirus infections in plants, Endophytes (Screening for medicinally important endophytes), Microbial diseases of sugarcane
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Professor
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Professor
Research interests : Plant cell and tissue culture, Secondary metabolites, Synthetic seed technology and Cryopreservation
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Research interests : Effects of plant metabolites on Caenorhabditis elegans with special emphasis on life span.
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Reading for Ph.D. (Edinburgh,UK)

Lecturer
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Mrs. P.N.N. Edirisinghe	Mr. R.P.D.S. Bandara	Mr. J.G. Shantha
Mrs. R.D.S. Ranwala	Mr. R.S. Perera	Mr. M.W.G.C.P Jayathilaka
Mr. W.A.T.S. Weerasiri	Mr. D.M. Abeyratna	Mr. R.J.K. Vini Ranatunga
Miss. W. G. D. H. Perera	Mr. K.D. Chayan Lalitha	
Mrs. P.A.M.K. Pahuruthota	Mr. M.W.C. Maduwatha	



Department of Chemistry

Chemistry, which is the study of atoms and molecules from nano to macro levels, is often referred to as the central science, and is critical to a fundamental understanding of the world around us. Chemical concepts have traditionally been central to the canonical sciences such as biology, physics, and geology and continues its role in newer disciplines (i.e:materials science, forensics, astrobiology, biotechnology, bioinformatics, pharmacology, and Atmospheric Science).

Introduction

Chemistry is a rapidly growing discipline bringing new discoveries theories, and scientific applications that ultimately benefit society. It is necessary for practicing chemists to be proficient in a wide range of chemical disciplines in order to address the important problems that lie at the interface of chemistry and closely related disciplines.

The Department of Chemistry at the University of Sri Jayewardenepura offers courses that incorporate the most recent advances in the discipline and provide our students with a strong foundation in the fundamentals of Chemistry and a choice of more specialized optional courses which cover a wide range of topics to suit their future goals. Academic programmes in Chemistry are designed to meet the needs of the country and prepare the students to seek employment with confidence.

The department of Chemistry has a highly skilled academic staff, 20 PhDs and offers an excellent research environment that includes research laboratories and a fully staffed instrumentation facility with state-of the art equipment including Atomic Absorption Spectrophotometer,UV-vis, Fluorescence Spectrophotometer, Far and Mid IR FTIR Spectrometer, Gas Chromatography Mass Spectrometry, Impact Tester, Rheometer, Luminescence Spectrometer, Near IR Analysis.

The vision of the department is to contribute to national development, scientific advancement and professional development by providing up to date training and opportunities to students to become efficient and successful professionals.

Degree programmes offered by the department

B.Sc. General degree with chemistry as a subject
B.Sc. Special degree in chemistry
B.Sc. Special degree in Industrial Chemistry
B.Sc. Special degree in Polymer Chemistry
B.Sc. in Polymer science and technology

PST Programme

Department of Chemistry offers Polymer Science and Technology as a subject in addition to the chemistry to the BSc degree program since 2004. It is focused to produce high quality graduates having sound knowledge in polymer science and polymer technology with a preliminary exposure in industrial atmosphere to endow polymer scientists, polymer chemists and polymer technologists for working with new challenges. M.Sc. in polymer science and technology was introduced with the help of University of Akron at the Department of Chemistry in 1976. The Master degree is well recognized post graduate program to the polymer industry of the country.

Polymer science and technology has exponentially expanded in a global context and global production of polymers has exceeded the production volume of steel. Polymers became a good replacement for the applications of steel, glass and ceramic since its light weight, energy serving production processes and acceptable

chemo mechanical properties. Engineering polymers, Domestic polymers, Conductivepolymers, drug delivery polymers, paints and adhesives and elastomers are some examples of the application based categories of polymers.

According to the Flory (Nobel price, 1974) modern polymer science is a blend of organic chemistry, some aspects of physical chemistry, material physics, statistical mathematics, and some aspects of inorganic chemistry. Polymer technology is a combination of polymer science, some aspects of chemical engineering, rheology, and reactor designing for polymerization, some mechanical aspects and mould designing. Its interdisciplinary nature makes it a fascinating and challengeable subject.

International symposium of Polymer Science and Technology

The Department of Chemistry initiated the first International Symposium in Polymer Science and Technology in collaboration with universities and industries in 2012.

The symposium is conducted for every other year with the aim to merge academia and polymer industry on a common platform to exchange information and novel ideas to enhance research and development and inspire and prepare the younger generation in meeting global challenges with social responsibilities.

Awards

The following awards are presented to students who perform exceptionally well in their studies.

1. Chemical Industries Colombo Ltd.

   Award 1 : This prize is awarded to the student who obtains the highest marks at the final examination in the B.Sc. Chemistry (Special) degree.

   Award 2 : For 2 students who have obtained the highest aggregate at the B.Sc. (Special) degree 3rd year ending examination.

2. G.C.N.Jayasuriya Gold Medal :

   This medal is awarded to the student who obtains overall highest marks for Chemistry subject in the B.Sc. General degree examination.

3. Prof. Tuley de Silva Gold Medal :

   This medal is awarded to the student who obtains highest overall marks at the B.Sc. Special degree.

4. L.A.C. Alles Award :

   This prize is awarded to the student who obtains either a first class or a second class upper division pass having highest marks for Food Science and Technology course units at the B.Sc. Chemistry Special Degree Examination

5. Prof. W S Fernando Gold Medal for Physical & Inorganic Chemistry:

. The award will be given to the student obtaining a 1st or 2nd Class Upper division and the highest GPA for Physical Chemistry and Inorganic Chemistry (core and compulsory courses) in the 3rd and 4th year of the B.Sc. Chemistry (Special) Degree programme.

6. B.Sc. (Special) Degree:

   Awards for best performers in areas of Organic, Inorganic, Physical and Analytical Chemistry. A certificate will be awarded to the students who obtain a GPA > 3.700 in the above areas.

Postgraduate Courses

The department has built a long tradition of excellence in research and postgraduate training. It offers research degrees (Ph.D., M.Phil.) and the following MSc. Programmes by course work.

M.Sc. in Polymer Science & Technology
M.Sc. in Industrial Utilization of Medicinal & Aromatic Plants.
M.Sc. /Postgraduate diploma in Industrial Chemistry

The Chemical Society

The Chemical society of University of Sri Jayewardenepura is one of the most active student societies in the university. Some of the activities are publication of a magazine (CRUCIBLE), organizing guest lectures, Annual Award of the G C N Jayasuriya Gold Medal at the convocation, Annual Chemistry staff vs students cricket match, annual outing, raising money for book/scholarship funds.

For further advice and information, please contact;

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Prof. P. M. Jayaweera
B.Sc. (USJP), Ph.D. (Belfast), M.I.Chem.C.

Senior Professor and Head of the Department
Research interest : Photochemistry and photophysics of labile metal complexes, Excited State studies of complexes and Spectroscopic studies of metal colloids, Sols and MELLFs, Reaction Kinetics, Surface Science of Nano Materials. Dye sensitized Nano-porous photovoltaic devices.
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Prof. S. P. Deraniyagala
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Chair, Senior Professor of Chemistry
Research interest : Determination of trace metals and non-metals in food and water. Development of colorimetric methods to determine Low Levels of metal ions and anions.
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Prof. S. S. L. W. Liyanage
B.Sc. (USJP), Ph.D. (Cardiff Wales), M.I.Chem.C., MRSC, FPRI.SL.

Professor
Research interest : Synthesis of triphosphamacrocycles, Improvement of quality of natural rubber latex, Study on degradation patterns of polymer based products, effects on nano-scale additives in Rubber compounding.
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Prof. L .Karunanayake
B.Sc. (USJP), Ph.D. (NorthLondon)

Professor
Research interest : Polyurethane nano-composites, Polymer composites and blends. Use of vegetable oils and their derivatives as an additive in the polymer industry, Use of locally available tannin materials to make polymeric resins,
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Prof. Nilwala Kottegoda
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Professor
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Prof. B. A. Perera
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Professor
Research interest : Comparison of migration behaviour of contaminants from plastic bottles to food. Cleavage of Bisnitrophenylphosphate using peptides.
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Research interest : Identification and quantification of trace level environmental contaminant using AAS, GCMS and HPLC, use of hydrogels for environmental applications, utilization of micro extraction techniques coupled with chromatographic techniques in environmental analytical chemistry.
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Research interest: Sensor development to detect small molecules/heavymetals in biological systems by coupling with protein conformational change and nanoparticles. Identification of heavymetal and other toxic chemical contamination and accumulation in water,sediment,of food and their analysis.
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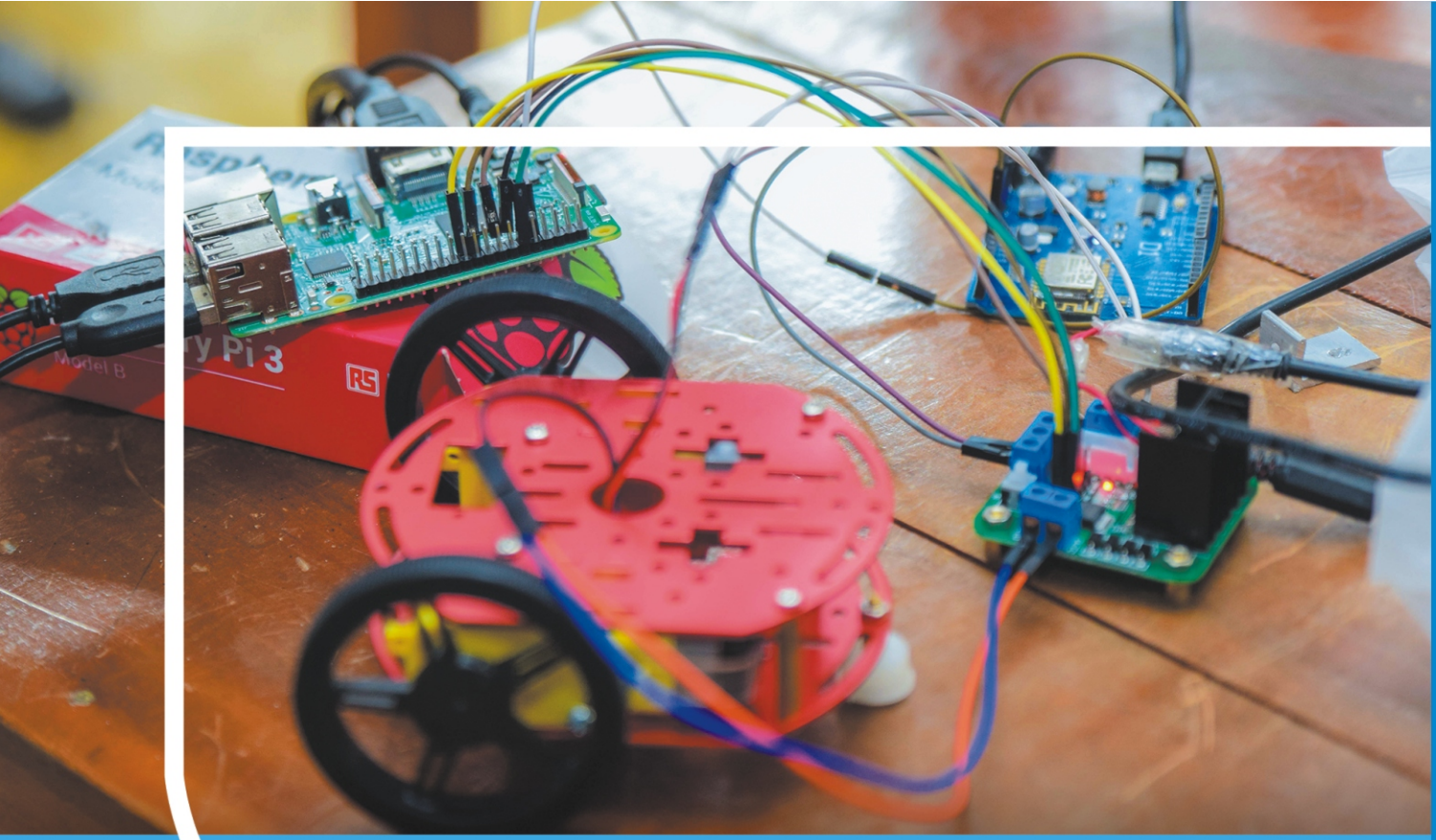


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Supporting Staff

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Mr. W.M.S.K. Weerasinghe	Mr. H.G.C. Prasanna	Mr. H.M.D.P. Kumara
Mrs. L.A.D.R. Ranjani	Mr. S.K. Abeydewa	Mr. G.G.R. Rajapaksha
Mrs. V.R.S. Dayarathna	Mr. S.A. Jayantha	Mr. H.S.S. Fernando
Miss. L.M.G. Liyanage	Mr. E.A. Nilaj	Mr. H.N.M. Perera
Mr. H.A.N.D. Rathnayake	Mr. E.H.I. Madushanka	Ms. A.H. Silva
Mr. K.D.C. Jagath	Mr. J.M.U.P. Kumara	Ms. K.A.A.D. Dissanayake



Department of Computer Science

The mission of the Department of Computer Science (DCS) is to produce high quality graduates and postgraduates in Computer Science and ICT who can contribute to the national development and to the development of the two disciplines.

Introduction

Computing is an essential part of 21st-century life, and is an exceptionally fast-moving subject that gives rise to a range of interesting and challenging problems. To solve these problems skill knowledgeable and versatile scientists who have a firm grasp of the fundamental concepts as well as in-depth knowledge of specific areas such as software engineering, multimedia media, intelligent computing, distributed systems, mobile technologies, networks, web services and the Internet are needed.

Computer Science and ICT at the University of Sri Jayewardenepura

The Department of Computer Science at the University of Sri Jayewardenepura is a large and growing department with exciting undergraduate teaching programs. A degree from us can prepare you for some of the newest, most dynamic and exciting careers around today and the careers of tomorrow. The department offers Computer Science and ICT as a subject for physical science undergraduates. By choosing to study Computer Science/ ICT with us, you will be well on your way to becoming a leader in the field of computing.

Currently there are about 450 undergraduates in four batches following general degree with Computer Science, general degree with ICT and special degree in Computer Science.

Teaching methods involve a combination of lectures, tutorials, group work and practical work. The tutorials are provided in all years of the study programs. At the first year, most practical work is carried out in supervised laboratories with academic staff on hand to offer assistance. In the more senior years, most of the practical work is carried out independently with consulting assistance available at specified times. At the University of Sri Jayewardenepura, we are dedicated to the education and development of leaders in the computing industry.

Degree programs offered by the department

B.Sc. General Degree with Computer Science as a subject

B.Sc. Special Degree in Computer Science

B.Sc. General Degree with ICT as a subject

Goals and learning outcomes of course units, course contents, methods of assessments, handouts, past question papers, details on recent research activities, postgraduate programs etc. are available at our website www.cs.sjp.ac.lk.

Awards

The following medal is awarded for the best performance in Computer Science.

Virtusa Gold Medal:

This medal is awarded to the student who obtains highest GPA with a First Class at the B.Sc. Special degree in Computer Science.

Postgraduate Studies

Computer Science is a dynamic and continually expanding subject, and DCS at SJP is committed to excellence in its teaching and research. Our postgraduate studies will enable you to explore the full breadth and depth of this dynamic discipline.

The Department of Computer Science offers postgraduate programs of study leading to the:

- Post graduate diploma/certificate in Computer Science
- Master of Computer Science
- Master of Philosophy (M.Phil.)
- Doctor of Philosophy (Ph.D.)

Post graduate diploma in Computer Science

The Postgraduate Diploma/Certificate in Computer Science is a professional qualification for graduates with a background in computing. It is particularly suitable if you are working in areas related to computing and wish to bring your expertise up to date with developments in this fast changing field. As research project is not compulsory, the postgraduate program will appeal to students wanting for postgraduate course-work qualification.

Master of Computer Science

The Master of Computer Science is a master's degree centered on course work completed over two years with or without research work. This is designed to broaden understanding and knowledge of computer science, and enhance the ability to apply this within industry or commerce. Also in addition to gaining an in-depth knowledge of state-of-the-art technologies, it also develops further the competence and ability to apply them in your own working environment.

Master of Philosophy (M.Phil.)

The Master of Philosophy is a research based degree, in which students develop research skills that will be invaluable for further work in a research environment and it aims to provide preparation appropriate for undertaking a Ph.D. program in computer science. Students are expected to make a significant contribution to knowledge in the field of study.

Ph.D. (Doctor of Philosophy)

The Ph.D. program in Computer Science is a research degree granted primarily on the presentation of a substantial research achievement which involves three to four years of original research work. A Ph.D. is generally required by those people seeking careers in a university or research laboratory.

Memberships

Currently the department has the membership for Advance Computer Science program in Oracle Academy Sri Lanka.

The Society of Computer Science

The Society of Computer Science, which was formed In 2000, is one of the Leading and most active student societies in the university. It is the only society in the university that is dedicated to Computer Science.

Goals of the Society are to promote Computer Science and ICT as a subject, conduct Workshops, Seminars, Lectures and Field tours related to Computer Science and ICT, and improve the level of knowledge on cyber technology among students and prepare them for the future challenges.

The activities conducted in 2017 include Aurora - the Annual conference on Computer Science: A conference for undergraduates and school students, Back to school session: The SCS goes back to school and help students to uplift their knowledge in areas of computer science and ICT, Guest lectures and workshops for undergraduates to improve their knowledge in trending topics in computer science and ICT, and Annual Inter-faculty Gaming Competition.

Our achievements: National Champion at Global Student Entrepreneur Awards (GSEA) 2017, 2nd Runner Up at Hackx 2016 (Inter - University Hackathon), Google Student Ambassador for year 2014, Google Anita Borg Memorial Scholarship for the year 2014.

For more information:
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Department of Food Science and Technology

The Department of Food Science and Technology offers B.Sc. (Special) degree programme in Food Science and Technology. The B.Sc. (FST) degree programme has a strong origin and background as the university started Food Science and Technology teaching through a Postgraduate Diploma programme in Food Science and Technology as early as 1969.

Strategic Intent of the Department of Food Science and Technology

To become a centre of excellence in higher learning in Food Science and Technology and Nutrition which disseminates knowledge in keeping with the development needs of the country and requirement of the region for related professionals.

Being closer to Colombo, the department has comfortably established collaborative links with major and small scale institutions of the food sector. Therefore, undergraduates have great opportunities to get themselves exposed to many food related industries for field trips, Industrial/Research/Field placement etc. In addition, the department is in position to invite experts working for the relevant private sector institutions in conducting lectures, seminars, workshops and practicals.

Intended Learning Outcomes of the course

On the completion of the degree programme successfully, students should have,

01. Wider knowledge and conceptual understanding of areas of Food Science and Technology

02. Ability to perceive the behaviour of the food sector institutions dealing with food manufacture and related services

03. Technical and intellectual skills to gather data/information and critically analyze the needs of local and international food sector

04. Learnt the way of searching new knowledge through research

05. Developed a range of transferable skills, which are useful in decision making with regard to food resource matters such as handling data/information and interpretation, computer literacy, information management, teamwork, oral and written presentation/ communication etc.

06. Built self-confidence for independence, self-motivation for life-long-learning in the relevant field and go for postgraduate studies.

07. Qualified to commence professional practice in food industry and related academic and research and development institutions.

The B.Sc. degree in Food Science and Technology has been designed to enable the prospective FST graduates to be able to demonstrate excellence in all subject related practical skills and apply both theoretical knowledge and related practical skills acquired appropriately in different situations. It is also expected that they will develop their technical competencies in order to be fitting to any challenging situation in the Food Industry. The abilities and skills expected to transfer to the prospective FST graduates through the degree programme include

Generic Skills, Numeracy skills, Communication skills (with special emphasis on scientific communication), Information and communication technology (ICT) skills, Interpersonal/teamwork skills, Self management and professional development skills.

The FST degree programme offered by the Department of Food Science and Technology has been designed to help the student in achieving the following,

01. Develop the knowledge, skills and attitudes based on a broad and multi-disciplinary approach in order to fulfill the current and emerging needs in local, regional and international food sector.

02. Develop the knowledge, skills and attitudes through theoretical, laboratory and out-door/field practical components in experiencing the real world practices in the field to establish and manage socially acceptable, economically viable and environmentally friendly food industries.

03. Identify problems and issues related to the food industry and conduct independent research in order to find the most appropriate solutions.

04. Develop ICT skills

05. Develop interpersonal, teamwork and leadership skills.

06. Develop self management and professional development skills

07. Maintain a acceptable moral conduct

Association of Food Science and Technology (AFST)

The Association of Food Science and Technology (AFST) is made of a collection of enthusiastic, skilled and dynamic undergraduates who work hard every day for the progress of the field of Food Science and Technology with a high degree of professionalism, and develop and fine tune their skills through their hard work. The AFST was established on the 11th of January, 2007 and the membership of the association is available for any undergraduate who follows the degree of Food Science and Technology at University of Sri Jayewardenepura.

Members of AFST come across many opportunities every year to increase their subject knowledge, develop contacts and gather more information about the vastly expanding and improving industry. One such event is Pro Food Pro Pack Exhibition which is the largest International Food Exhibition in Sri Lanka where our University has been able to win more than 8 awards through these years competing with other Universities and Industries. In addition there are many events organized by the AFST, such as fun match and annual trip, awareness programmes on World Food Day, Vidujaya Exhibition in 2009, Food Nights, Sankalpana in 2011, Arunella in 2012 and have also taken part in massive events like Dayata Kirula 2014.

Web address – http://www.sjp.ac.lk/sites/foodscience/

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Department of Forestry and Environmental Science

The Department offers multidisciplinary programs in Conservation, Management and Utilization of Forest and Other Natural Resources and Environmental Protection (Pollution Prevention and Waste Management).

Department of Forestry and Environmental Science

The forestry education in the University of Sri Jayewardenepura has a history of more than 25 years. Department of Forestry and Environmental Science is the only one of its kind in Sri Lanka which offers both undergraduate and postgraduate courses in Environmental Management and Forestry. Especially through its postgraduate program, the department has been able to reach wide horizons in training professionals in both government and non-government sectors who are capable of contributing effectively to the country's development process. About 520 professionals have been trained up to 2017, many of whom are employed in forestry and environmental sectors.

Mission of the Department

To assist in sustainable management of natural resources and environment through manpower and knowledge development.

Resources

Among the many facilities of the department, a fully equipped auditorium and lecture rooms with audio-visual facilities and a computer center can be highlighted. There are greenhouses for practical work. The department manages 100 acres of Forest Reserve and Field Research Center at Yagirala, which offers opportunities to study and practice Forest Management, Biodiversity and Ecotourism.

Objective of the Course

To develop decision making knowledge and skills required to manage forest resources and the natural and man-made environment

Field / Factory Assignment (Internship)

In the third year, students are placed in a selected institution for field / factory assignment (internship). This is intended to provide students with an opportunity to acquire knowledge of a "real work" environment. This program has made our graduates more employable in the previous years.

Postgraduate Degrees

The Department offers the following programs at postgraduate level.

- M.Sc. Degree in Forestry and Environmental Management
- M.Phil. and Ph.D. Degrees by research

M.Sc. Degree in Forestry and Environmental Management

The overall objective of this course, which has been offered since 1983, is to develop decision-making knowledge and skills required to manage forests and other natural environmental resources and to prevent and control environmental pollution. The target groups for this programme are those who are already employed in forestry, environment and natural resource management sectors and others who wish to pursue careers in the above sectors.

M. Phil and Ph.D. Degrees by Research

The department enrolls students for M. Phil and Ph.D. degrees by research in areas within the specialization and research interests of the staff.

Departmental Research

Research in the Department carried out by staff, special degree students and postgraduate students cover a wide range of topics relevant to Forestry and Environment Science and management. This includes research in silviculture, forest ecology, wood science and timber technology, agroforestry and social forestry, tree improvement and propagation, forest management, wildlife management, forest economics, pollution control, waste management etc.

Several collaborative research projects have been conducted with foreign universities such as University of Bangor, UK; Yale University, USA; University of Calgary, Canada, other governmental agencies, industry, national and international NGOs with a view to provide and more pragmatic and realistic approach in solving problems.

Research Centre in Forestry and Environment

The Research Centre in Forestry and Environment (RCFE) was established in 2016 with the objective of supporting pioneering research in forestry and environment by the academic staff of the Department of Forestry and Environmental Science, in collaboration with researchers from other departments of the University of Sri Jayewardenepura and leading Research institutes in Sri Lanka and other countries. The facilities available at the Centre are also used to further train the students of the Department of Forestry and Environmental Science at BSc, MSc, MPhil and PhD levels in conducting cutting-edge research.

The main objectives of the RCFE are to conduct high quality research projects aimed at solving pressing issues in forestry and environment sectors in Sri Lanka and to contribute to the national development by finding appropriate solutions through applied research. While serving the needs of the nation, these research is expected to reach global audience by having them published in premier scientific journals. The uniqueness of this centre is its ability to bring together many researchers to form multi-disciplinary teams that can undertake tasks which may not be completed by one or two individuals. Given the wide coverage of the forestry and environment sectors, such collaborations are essential to achieve innovative results useful for the progress of the country.

Other Collaborations

The department maintains close collaborations with other institutions in forestry and environment. Every year opportunities have been provided for two Range Forest Officers of the department to follow the Bsc Degree programme with Environmental Management & Forestry as a subject.

Further Training/Workshops

Apart from the regular training programs conducted by the department, short-term training workshops are also being conducted targeting relevant government and non-government officials, personnel from the industry and others on a variety of subject areas of mutual interest to both parties

Role of the Department in Natural Resource Management

The department also plays an imporant role in national development by its contribution to national and international activities. One such activity which has gained international recognition is the Annual Forestry and Environment Symposium which is being held for the 22nd consecutive time this year. The academic staff of the Department serves in national committees, conducts environmental assessments for national and international projects and provides advice to the government as well as private sector in the fields of forestry and environment. The staff also liaise closely with the forestry and environment related institutions and carries out research solely and in collaboration with other institutions in fields of great importance. The department is also heavily engaged in dissemination of knowledge among the general public and personnel in other sectors.

Center for Sustainability

The Center for Sustainability (CFS) is a body for professional environmental services, research and extension attached to the Department of Forestry and Environmental Science. A variety of services including environmental consultancy and advisory services, short courses and training programs on environmental management and sustainability are offered, especially for the corporate sector.

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Forestry and Environment Society

Forestry and Environment Society is one of the leading student societies in the university. The society organizes both intra-curricula and extra-curricula activities such as field trips, training programs in Yagirala Field Research Centre, workshops, lectures, film festivals and social service activities.

The main objective of the society is to enhance different skills of members while nourishing them with current knowledge in the field.

Awards

The following awards are made to students who perfom exceptionally well in their studies.

1. Jayantha Pathberiya Scholarship

This scholarship is awarded to the student who obtains the highest average marks for Environmental Management & Forestry in the 1st and 2nd academic years of the B.Sc. Degree.

2. Environmental Management & Forestry Gold Medal

This medal is awarded to the student who obtains a First Class Pass with the highest GPA at the B.Sc. (Environmental Management & Forestry) Special Degree.

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Department of Mathematics

Mathematics alone will enable a person to make a positive contribution to the society through logical thinking rather than rules & regulations.

Mathematics is the "Queen of Sciences".

Scientific and industrial progress in recent years have made Mathematics one of the most important subjects of our time. In modern times, being versed in the language of mathematics helps one to make progress in day to day life. More than its role as a mere language Mathematics has now found an increasingly significant influence in many diverse fields, from management to medicine. An undergraduate degree in Mathematics will open the way to a future filled with wide opportunities for jobs and professions. Mathematics related professionals such as Actuarial Scientists, Accountants, and Statisticians are quite high in demand worldwide.

Furthermore, Mathematics alone will enable a person to make a positive contribution to the society. Mathematics is, in addition to being the language of science in its own right, a way of logical thinking rather than rules and regulations.

Degree Programmes offered by the department

- General Degree
- Special Degree
- Postgraduate Diploma/M.Sc. Programs

Postgraduate Diploma/M.Sc. Programs

Being the first Faculty of Applied Science of the country and realizing the potential of graduates with a strong mathematical background, we launched the first Postgraduate Diploma/M.Sc. program in Industrial Mathematics in Sri Lanka, in 1996.

Computer Technologies and Facilities

Though the Department of Mathematics has only a handful of academics, we are fortunate to have a sound blend of both 'Pure' and 'Applied' Mathematicians. As a result, the programs and courses of the Department of Mathematics are designed to cater to students, who are either strong in abstract thinking or more applied oriented. As there is a high demand for Computational Mathematics, the department has introduced a practical component each to most of the Mathematics course units in the department with the students having access to a well-equipped computer laboratory.

There is a good collection of books on Mathematics in the main library, covering almost all sections of Mathematics. We strongly advice the students to refer these books whenever possible. Mathematics is an exciting field, which is not difficult to grasp, contrary to the view of the general public, and the lecturers in the department of Mathematics are willing, to help the students with their academic work and to guide them on other matters.

Career Opportunities in Mathematics

What can you do with a degree in Mathematics? Almost anything! As our world and economy become more and more science and technology-oriented, there is an increasing demand for people with sharp critical thinking skills in Mathematics. The Mathematics Department offers both undergraduate and postgraduate programs at the master degree level that prepare students for a wide range of careers, including employment in government and private sector, Banks, industry, teaching careers and preparation for postgraduate studies.

The Mathematics Society

It was on March 31, 2011; that the Mathematics Society was founded with the vision of fostering an awareness and Appreciation of mathematics and its connection to other disciplines and everyday life. The society representing all the mathematics students in the university, not only provides an opportunity for students to meet the lecturers and seniors to share their experiences in research and leadership qualities, but also organizes seminars for school children (especially Combined Mathematics seminars for A/L students) under the guidance of lecturers in the Department of Mathematics. All the efforts of the society directed in promoting mathematical understanding and skills, are manifested via its official web page.

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Department of Physics

"Physics is a creative activity of the human mind. Studying Physics provides you with a delightful and rewarding experience that will make you suitable for any future career".

Introduction

Physics is a dynamic discipline where new knowledge, applications and technologies are born every day. A degree in physics offers you the ability to stay ahead in the competitive world by offering you not only the subject knowledge but also the right tools to be creative and to think differently. It equips you with the analytical and personal skills that are essential for personal development, for whatever path you decide to take in the future.

The Department of Physics at the University of Sri Jayewardenepura offers courses that integrate both the foundational knowledge and the recent advances of the field, thereby ensuring students gain knowledge across the breadth of the discipline. Additionally, optional courses are offered in specialized subject areas that enable students to follow industrial aspects of physics. Not limited to the technical know-how of the field, students are also offered optional courses to help develop their soft skills such as presentation, communication and organizational skills.

Hands-on learning is offered through the various laboratories at the department. These include an Elementary Laboratory, Optics Laboratory, Electronics Laboratory, Applied Physics Laboratory, Embedded Systems and Robotics Laboratory, Computational Laboratory and Advanced Physics Laboratory. The department also has a workshop equipped with machinery and instruments.

Degrees offered by the Department

B.Sc. (General) Degree programme with Physics as a subject

B.Sc. (General) Degree programme with Applied Physics as a subject

B.Sc. (Special) Degree in Physics

Special Degree students are provided with the opportunity to apply their knowledge and gain industrial experience through an Industrial Placement scheme. Previous industrial placements include,

ITI, Atomic Energy Authority, ACCIMT,

SLSI, Petroleum Resources Development Agency and CEA.

Postgraduate Level

The Department accommodates M.Phil. and Ph.D. students. Present Postgraduate projects are centered on Geophysics, Digital Electronics and Mathematical and Computational Physics.

Awards

The most outstanding student at the B.Sc. Special Degree in Physics is awarded with the Prof. P.C.B. Fernando memorial prize each year.

The Physics Society

The sharing of knowledge is not limited to the course material. The Physics Society is an active organization which Organizes exhibitions, film Festivals and popular talks that make the student life at the Department more vibrant and exciting. The Department also organizes seminars and informal discussions on topics such as Science, Religion, Literature and Philosophy through its Popular Science Gossip Programme.

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Department of Statistics

Our aim of training undergraduates in Statistics is to provide them: a broad knowledge in the subject Statistics; technical skills and the ability for critical statistical reasoning; opportunities to participate in statistical research; preparation for higher studies and for professional careers.

Introduction

The Department of Statistics offers Statistics as a subject for B.Sc. (General) Degree and also offers a B.Sc. (Special) Degree in Statistics. Physical science undergraduates can follow Statistics for their three year general degree depending on the subject combination they are placed. Students are selected for subject combinations on the basis of their request and A/L z-scores.

The mission of the Department of Statistics is to produce high quality graduates and postgraduates in Statistics who can contribute to the national development and to the development of the discipline.

Programme Details

Aims and learning outcomes of course units, course contents, methods of assessment, handouts, past question papers, details on recent research activities and postgraduate programs etc. are available at our website http:Science.sjp.ac.lk/sta/

Awards

The following medals are awarded for best performers in Statistics.

- Professor W.S. Fernando gold medal for the best performance in Statistics in the General Degree Program
- Professor R.A. Dayananda gold medal for the best performance in Statistics Special Degree Program

Statistics for reliable decision making under uncertainty

Statistics is the scientific application of mathematical principles for collection, analysis, interpretation and presentation of any kind of data under uncertainty. Statisticians begin to contribute to scientific inquiry by applying their mathematical and statistical knowledge through the design of surveys and experiments and proceed until the final presentation of results. Statistics is an essential tool in any field where decisions are made based on data. Statisticians apply their knowledge of statistical methods to a variety of subject areas such as biology, economics, education, engineering, medicine, public health, psychology, marketing, sports etc.

Statistics at the University of Sri Jayewardenepura

Teaching Statistics at the university dates back to 1968. Until 1998, Statistics was offered by the Department of Mathematics. Later, the Department of Statistics and Computer Science was established in 1998. The present Department of Statistics was formed early 2014. The department offers Statistics as a subject for the General Degree Program as well as the Special Degree Program in Statistics. In addition, the department conducts a Postgraduate Diploma/M.Sc. program in Applied Statistics. This is an evolution of the first ever self-financed postgraduate program in Sri Lanka, the Postgraduate Diploma in Statistics, which was established in 1968.

At present, about 400 undergraduates are studying Statistics as a subject. In addition to the essential theoretical knowledge, Statistics undergraduates are given ample opportunities to collect and analyze data, and prepare statistical reports related to real world problems.

They are also given sufficient exposure to statistical software in analyzing data. Diversified learning activities and assessment methods such as individual and group assignment,

presentations, seminars, individual and group projects are used to encourage active learning. This diversification helps to improve soft skills such as communication skills and teamwork. Independent learning is encouraged at all levels.

Candidates for the Special Degree in Statistics are selected at the beginning of the third year, based on the performance in the first two years. Statistics Special Degree students are required to undertake a comprehensive guided project. In addition, they are exposed to the real world applications by means of a four -month, full-time, industrial training. They also gain vital experience in solving real world problems through the Statistical Consultancy Unit of the department which offers its services to both on campus and off campus researchers.

The Department is dedicated to providing a conductive learning environment to produce statisticians who are capable of solving practical problems and contribute to the national development using their skills.

Statistics Society

The Statistics Society of the Department of Statistics was formed in the year 2009 with the intention of promoting Statistics amongst the students Of the Faculty of Applied Sciences. Over the past few years the society has undertaken many initiatives in order to enhance the interest towards Statistics. Each year, the Statistics Society publishes a magazine, "STAT Plot". STAT Plot allows our Statistics undergraduates to voice their thoughts about Statistics. This is the place where their creativity and divergent thinking take to the pinnacle. This is where their knowledge about Statistics is heard loud and clear. The Sociaty also annually organizes a "STAT Day" which brings together a variety of individuals including undergraduates, staff and industry profesionals with a timely theme. The Annual "STAT Quiz", held as a part of the "Stat Day", is a synonym for the Clash of Statistics Geniuses. It is the perfect arena to show off their knowledge and skills, and a splendid opportunity to work as a team.

Knowing how and where your skills and knowledge can be best utilized would certainly be beneficial in the long run. What use of your knowledge can there be if you don't know how to give value for it? The Statistics Society introduces career opportunities for undergraduates.

They are given the opportunity to be exposed to their desired career paths at an early stage. And the plus point, you get to be hired by most prestigious companies in Sri Lanka!

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Department of Zoology

Department of Zoology offers three subjects namely, Zoology, Aquatic Resources Management and Biology to undergraduates of the Faculty of Applied Science.

History

Teaching of science at Vidyodaya was initiated in 1962 and teaching of Zoology as a subject was also commenced. However, Botany and Zoology Departments were amalgamated as the Department of Biology in 1966 but later again that Department was separated as Zoology and Botany in 1982 which continues up to date under the Faculty of Applied Sciences.

Present status

At present, Zoology as a subject is offered blending its applications focusing more towards the skill development of the students to suite the present day needs of the country. As a result study components stem from the Department are Fisheries and Aquaculture, Limnology, Molecular Biology, Wildlife, Microbial Ecology, Insect Pest Management , Environmental Physiology etc.

Apart from that as a combination of marine and freshwater study components Aquatic Resources Management has been introduced as a new subject providing more opportunities for the students to learn specialized areas with a multidisciplinary approach

Aquatic Resources Management

This subject provides more opportunities for the students to use their knowledge in development activities of the country in a sustainable manner. We have resources with expertise knowledge in fresh, brackish and marine components to improve the skills of the students.

As in many other developed countries this will help the students to learn interactions of watersheds with the aquatic environment through water resources management, coastal resources management, water resources modeling, conservation strategies, aquatic resources planning and management, use of Geographic Information Systems as a tool in management of aquatic resources etc

Finally this will provide an opportunity for the students to develop their skills to suite the present requirements of the country.

Biology

Although Biology was introduced about a decade ago as a subject for GCE A/L examination , there is a dearth of graduates to teach Biology in schools. To face this challenge, the Department of Zoology and the Department of Botany has introduced biology as a subject from the academic year 2012.

Mission

The mission of the Department is to promote and excel in Teaching, Learning and Research and Application in the fields of Zoology.

Undergraduate programme

The Department of Zoology, offers three subjects for undergraduates; namely, Zoology, Aquatic Resources Management and Biology. Students can select different subject combinations for their undergraduate degree programme.

Zoology, Biology and Aquatic Resources Management and students can select the following subjects combinations for their undergraduate degree programme.

- Zoology, Chemistry, Environmental Mgt. & Forestry
- Zoology, Chemistry, Physics
- Zoology, Chemistry, Plant Biology
- Zoology, Chemistry, Management Science
- Zoology, Aquatic Resources Management, Chemistry
- Aquatic Resources Management, Management Science, Chemistry
- Aquatic Resources Management, Chemistry, Environmental Mgt. & Forestry
- Aquatic Resources Management, Food Science, Chemistry
- Aquatic Resources Management, Biology, Chemistry
- Biology, Food Science, Chemistry
- Biology, Physics, ICT
- Biology, Chemistry, ICT
- Biology, Chemistry, Management Science
- Biology, Physics, Management Science

The Department offers a three year B.Sc. (General) Degree and a four year B.Sc. (Special) Degree.

Field Visits for Zoology and Aquatic Resource Management Studen

Most of our Course Units are field oriented and are designed to widen the field experience and gain skills and practical knowledge in Aquaculture, Fisheries, Limnology, Environmental Science, Wildlife Ecology and Ecology etc; The students will get the opportunity to conduct their field studies in Fisheries at Udawalawe Reservoir, Chilaw and Negombo estuaries etc. Aquaculture field studies at Dambulla and Udawalawa freshwater fisheries stations. Limnology field studies at Beira lake, Kandy lake and Bolgoda lagoon etc. Wildlife studies at Sinharaja Man & Biosphere Nature Reserve, Roomassala Coral Reef, Giritale Nature Reserve, Sigiriya Nature Reserve, Bundala Ramzar site and Anawillundawa Ramzar site. Visits will be arranged to the National Zoological Garden in cooperation with the Zoological Garden staff for the studies on Animal Diversity and Primate Evolution. These courses will be supported by means of video films and practical classes.

Industrial Training

The Department offers Industrial Training for B.Sc. Aquatic Resources Management students to provide exposure to Industries and other Research Organizations. Industrial placement include the Central Environmental Authority (CEA), Industrial Technology Institute (ITI), Medical Research Institute (MRI), Tea Research Institute (TRI), Coconut Research Institute (CRI), National Aquatic Resources Research and Development Agency (NARA), Marine Environmental Protection Authority (MEPA), National Water Supply and Drainage Board (NWSDB), Coast Conservation Department (CCD), Department of National Zoological Gardens, National Aquaculture Development Authority (NAQDA) and other Private Sector Institutes.

Post Graduate Programme

The Department offers the following programmes at Postgraduate level;

- M.Sc./PGDip in Fisheries and Aquatic Resources Management

The Masters Degree / Postgraduate Diploma Program is designed to meet the increasing need for highly skilled Managers, Biologists or Biologically literate Mathematicians and Statisticians to work in Aquatic Resources Management.

Course structure

Two years in duration for M.Sc. and one year for Postgraduate Diploma. The course is Teaching-Intensive with Practical Classes, Assignments, Field Visits and Individual Research Projects (M.Sc. only). Lectures will be conducted during weekends.

M.Phil and Ph.D. Degrees by Research

The Department registers students for M.Phil and Ph.D. Degrees by full time Research in areas within the Specialist and Research Interest of the academic staff.

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Mrs. W. D. Lakmali	Mr. Ajith Gunatunga	Mr. G. W. S. B. Weerasinghe
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Sports Science and Management Degree Programme

Maintained under Office of the Dean, Faculty of Applied Sciences, University of Sri Jayewardenepura.



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Emeritus
Prof. Tuley de Silva



Emeritus
Prof. W. S. Fernando



Emeritus
Prof. A.M. Abeysekera

Department of Computer Science and Statistics



Emeritus
Prof. R. A. Dayananda

Department of Food Science and Technology



Emeritus Prof. Arthur Bamunuarachchi

Department of Mathematics



Emeritus Prof. P. W. Epasinghe

Department of Physics



Emeritus Prof. Dammika A.Tantrigoda

Department of Zoology



Emeritus Prof. J. Jinadasa



English Language Teaching Unit

The aim of the English Language Teaching Unit (ELTU) of the University of Sri Jayewardenepura is to make English available, accessible and eventually familiar, to all students of the Faculty of Applied Sciences.

The ELTU has designed all its courses in alignment with the UTEL (University Test of English Language) benchmark and the evaluation criteria follow 4 and 5 bands.



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Career Guidance Unit

Career Guidance Unit helps undergraduates to develop their skills and abilities of self-assessment, information seeking and decision making required for coping with the needs of the complex world of work and to develop lifelong learning ambitions by providing services in Career Education, Career Guidance and Career Management.

Career Guidance Unit

The Career Guidance Unit (CGU)of the University of Sri Jayewardenepura aims to support and facilitate undergraduates to develop and enhance employability skills to be Aligned with their life goals And to assist the graduating students in their employment search and career projects through different platforms.

Objectives of CGU

- To provide a service in Career Education, Career Guidance and Career Management
- To expose undergraduates and recent graduates of the university to a variety of resources including people, data and information
- To support undergraduates in their efforts to set life goals, plan future careersand put those plans into effect
- To support students for employability skills development through various activities and programs
- To help graduating students in their job search and career projects through recruitment-related services

Services provided by CGU

- Facilitating the young person's transition from school to university by conducting awareness programs for the A/L students in the government schools
- Counseling and advising on careers
- Conducting employability skill development workshops
- Conducting CV writing and mock interview sessions
- Career-related information provision
- Networking with the industry by conducting Job Fairs
- Providing internship training for graduate job placement
- Conducting Outward Bound Training (OBT) camps for undergraduates
- Conducting entrepreneurship skill development programs
- Teaching career guidance course units based on modules introduced by UGC
- Guiding students for research, development and innovations

Certificate Course offered by CGU

HRM Course for non-HRM Students:

This 12 hr short course is conducted to teach the basic concepts of human resource management to students who are not following HRM as a subject in their degree courses in the Faculty of Humanities and Social Sciences, Faculty of Applied Sciences and Faculty of Medical Sciences.

Career Skills Development Society (CSDS)

CSDS is one of the main students' societies belonging to CGU. The CSDS, along with CGU, annually organizes diverse activities to enhance the employability skills of Undergraduates.

Touch the Peak - J'pura Annual Job Fair and Workshop Series

"Touch the Peak" is a programme that is specifically designed to provide an opportunity for undergraduates to engage with state and private sector organizations. This programme intends to develop employability skills, personality and qualities of graduates while introducing them to the world of work. The programme consists of an Annual Job Fair and a series of workshops on Leadership & Communication Skills, CV Writing, Employer Expectation & Interview Facing, Personal Grooming & Etiquette, HR Forum & CV Clinic and Mock interviews. All the recently passed out graduates are registered for this workshop.

Voyage Workshop Series

Voyage workshop series is based on developing positive values and attitudes along with the career skills of the university students. These workshops will be conducted by renowned motivational speakers and psychological counselors.

Shadow of Success

Shadow of Success is a workshops series that feature noteworthy personalities of the country who have thrived as professionals in their respective fields, gaining much respect and admiration. This programme aims to provide a sense of direction to our students, guiding them in making advantageous career choices with more conviction.

JESA - J'pura Employability Skills Awards

Introduced in 2015, J'pura Employability Skills Awards (JESA) focuses on recognizing the accomplishments of skillful undergraduates who have occupied the university space to reach beyond the expected; thus, capitalizing on their youthful years as an undergraduate. It thereby evaluates contestants under five avenues: Leadership, Creativity, Communication, Team Work and Innovation and a student from each of the six Faculties will be recognized as the "BESA - Best Employability Skills Achiever", together with 3 Silver Medalists.

OBT Camp

CSDS also organizes OBT camps that help to improve skills of participants while building unity. The most prominent benefits of this kind of training is team bonding and self-confidence building of individuals. These activities help to sharpen and fine-tune the behavioral skills and qualities of individuals and also develop mutual trust and understanding among members of a group. This training helps to generate fresh ideas and better attitudes while boosting the team spirit, thereby ultimately supporting the undergraduates to achieve their life objectives.

Donate Happiness Cancer Hospital Project

"Donate Happiness" project is conducted help the children residing in Cancer Hospital, Maharagama. This program is organized annually at this hospital, providing every child a valuable gift. This programme also intends to develop social responsibility skills among the members of CSDS.

Arunella Career Guidance Program for School Children

The "Arunella" program is conducted to introduce career guidance to the schools and to guide Advanced Level students to plan their future. This program was inaugurated in 2014 and was successful inmaking students aware about the career planning after the A/L examination and being qualified graduates in the future.

CSDS FLAIR Creative and Performing Arts Circle

"Flair", the talent forum, is a club which was formed with the objective of acquiring and showcasing skills and fine tuning diverse talents of

undergraduates. With a series of workshops to improve these capabilities and skills, the end of the year is marked with a competition carrying the motive of appreciating and encouraging the members to pursue their talents. Students who are interested in improving or discovering their skills can join the club and gain its benefits, while engaging in the activities conducted by the CGU.

Gavel Club

The educational meetings held in the Gavel Club encourage members to improve their speaking skills through each session of the meeting. The meetings also enable students to inspire, persuade and entertain others and inreturn to be inspired, persuaded and entertained by the other members throughout the sessions. The educational meetings are held every Tuesday and Thursday, from 04.30 pm - 06.30 pm. The Gavel Club also organizes several notable events.

Vorbitor - Intra University Best Speaker Competition

"Vorbitor" is an Intra-University Best Speaker Competition organized by the Gavel Club of University of Sri Jayewardenepura. It provides a platform for undergraduates to showcase their talents. Being one of the main events conducted by the Club, it provides a platform for students within the University to showcase their talents irrespective of the year of study or the faculty. The Club highly motivates and encourages undergraduates to partake in this event which provides an invaluable opportunity to improve their public speaking and communication skills.

Speech Master Inter-University Best Speaker Competition

Also organized by the Gavel Club is the Speech Master Inter University Best Speaker Competition, which is considered the biggest university-level best speaker competition across the whole island. Speech Master, from its inception, has been emulating to great heights, discovering the new dimensions of public speaking abilities. The event builds a platform for youth to showcase their talents and focuses on developing public speaking and leadership skills required to raise their voices to become future leaders.

Tharanaya -

The CSR project of the Gavel Club, consists of a one-day program for an under-privileged school within the Colombo suburbs, which includes sessions of team building, motivation and soft skills development and an on-going project in which, students from the Department of English visit the school every Saturday to help improve students' English knowledge.

For further information please contact:

Dr. (Mrs.) M. G. G. Tharanganie
Director/Career Guidance Unit
Phone: +94112801088
E mail: careers@sjp.ac.lk
Web: career.sjp.ac.lk

Type **follow cgusjp** and send to **40404**to register for the official twitter alert service of CGU to get news about events, workshops and job/internship opportunities



The Library

The mission of the library is to provide access to the library and information services in an efficient, effective and useful manner to support teaching, learning and research activities of the intellectual community by making resource materials available, and by assisting users to be acquainted with skills in locating information deemed necessary in the modern information age.

The Library

Profile

The Library plays an important role in university education supporting the three main pillars of the university: teaching, learning and research. There is a collection of more than two hundred thousand books, hundreds of journals and a few electronic databases in the library mainly to cater the seven main faculties.

The staff headed by the librarian Dr (Mrs) N. D. Wijayasundara ensures that the Library is updated and fully equipped to serve your needs.

There are four branch libraries under the main library; Medical, Bio Science, Engineering and Technology. Medical Library is located in the 3rd floor of the main library building with a separate entrance. This collection is specially developed for the users of the Faculty of Medical Sciences. The Biological Sciences library is located at the Department of Zoology, Faculty of Applied Sciences. Books on Botany, Zoology and Forestry are kept in this branch Library. Engineering and Technology libraries are located in their faculty premises.

Organization of the Collection

Monographs are classified under subjects using an international standard, Dewey Decimal Classification (DDC) system and catalogued using Anglo American Cataloguing Rules (AACR II). All books in the library can be browsed using the Online Public Access Catalogue (OPAC).This is available via the library home page (www.sjp.lib.ac.lk).

For collection organizing purposes, books are categorized as follows:

PR (Red R) : Permanent Reference – Not allowed for borrowing

SR (Green R) : Scheduled Reference – Overnight reference

Lending – Can be borrowed for a period of two weeks

Periodicals Division

Serial publications including journals and magazines are kept in the Periodicals Division. Library consists of print journals as well as electronic journals and databases. Scholarly journals including international journals and local journals cover many of the subject disciplines. Current issues are displayed on display racks according to the journal titles in alphabetical order. Bound volumes are also stored according to the title of the serial in alphabetical order.

Availability of journal issues can be checked using Visible Index at Periodicals Division or through computer catalogue (OPAC).

Serials are only for reference. These are not for lending.

Readers can get photocopies of required articles through the Photocopy Service Centre by paying the required amount of money.

	Normal Hours	During Examination period
Week days	8.00 am – 6.00 pm	5.00 am – 10.00 pm
Week ends	8.00 am – 6.00 pm	8.00 am – 6.00 pm
Poya days and other public holidays	-	8.00 am – 6.00 pm

Depending on the situational requirements opening hours of the library may change with prior notification

Electronic resources

Library has acquired a number of electronic resources such as e books, e journals and bibliographic and full text databases covering almost all the subject disciplines.All these databases and other free sources are listed under e-resources in the library website (www.sjp.lib.ac.lk). For some databases user name and password are needed while others can be accessed within the university premises. Remote access is restricted to those who have email facilities in the SJP domain. Some available databases are JSTOR, Emerald, Oxford University Press, Taylor and Francis, Wiley Online and Researc4Life.

Interactive Study Area

All registered library users can get online access to electronic databases, journals and internet facilities within the multimedia center, during week-days from 8.00 am to 6.00 pm. There are about 40 terminals in this centre.

Ceylon Room

The objective of maintaining Ceylon Room is to maintain books written about Sri Lanka. Apart from those, Sri Lankan Government publications such as acts, bills, administrative reports, bank reports, and publications of government corporations, boards and authorities, manuscripts are available in the Ceylon Room. Postgraduate theses submitted to the University of Sri Jayewardenepura and theses submitted by academic staff members to other Universities / Higher education institutions are also housed in the Ceylon Room.

All the collection in the Ceylon Room is on Permanent Reference basis and not allowed to borrow.

English Learning Zone (ELZ)

ELZ is maintained for learning English language within the library. Basic grammar books and short story books are stored here.

How to use the Library:

Registration of new students, issuing of library clearance certificates and other reader services are handled through the inquiry counter located at the left side of the ground floor near the main entrance.

Bringing personal books, periodicals, news-papers, cameras, food and drinks into the library is strictly prohibited. Personal belongings of library users should be kept in the cloak room upon obtaining a token.

Library Registration and Obtaining Library User Accounts

All registered students of the University are entitled to get the membership of the library. Library membership can be obtained by submitting a duly filled application to the reader services counter together with student identity card or record book issued by the university.

Once a filled application is submitted, a library user account is created and you will be informed through your e-mail. The total responsibility of personal user accounts lies with the user and the library will no longer be responsible for any complaints made after activating individual user

accounts. Users are responsible for the passwords of their accounts. Users must report any abuse or anonymous issuing of library materials on their accounts within 7 days of such misuse.

Undergraduates can borrow 04 books at a time (01 - SR-Scheduled Reference; 03 - Lending books) The account holder is responsible for any book issued (checked out) to their account.

Library facilities are terminated at completion of studentship or termination of studentship at the university. Such students should return all borrowed library books to the library.

Issuing of Library Books

Books needed to be borrowed should be given to the officer at the main counter along with the student identity card or student record book. The due date is stamped on the date slip of the book and those books are subjected to the inspection of library security staff before taking out of the library. Books borrowed should be returned to the relevant counters on or before the due date.

The Loan period for Lending books is two weeks and for Scheduled Reference books it is one day, scheduled Reference books should be returned before 10.00 a.m. on the following day.

User Education

The Library conducts orientation programs for all new students. Library resources and their use is explained at this program. Specialized programs on Information Literacy and hands-on practical sessions on electronic resources are conducted to student groups at the request of academic departments.

Inter-Library Loan (ILL) Service

Library conducts a service to provide materials from other network of libraries if a particular item is not available in our library. Library users are able to request this service by submitting a completed request form available in the library website to the library or emailing it to 'illusjp@sjp.ac.lk'.

General Rules on Library Use

Library users should produce the identity card issued by the university to prove their identification upon request by any library staff member.

Library users should not attempt to reserve seats in reading halls by placing books or other personal materials on tables or chairs. All personal materials should be taken when leaving the reading hall.

Library users should not attempt to reshelf books once they are taken out from book-shelves. They should be kept on tables instead. Books on shelves should not be purposely disordered.

Silence should be strictly adhered to within the library. Group discussions and meetings are not allowed within the library. Use of mobile phones and partaking food within the library are not allowed. Library is considered as a non-smoking area.

Library users are welcome to contact the Librarian or Academic Staff Members of the library for further assistance and clarifications in regard to library materials and their access. The whole library staff is committed to assist you always.



Office of the Dean

The Faculty of Applied Sciences (FAS) is headed by the Dean. The office of Dean co-ordinates all academic and administrative activities of the Faculty. Each academic department runs under the supervision of the Head of the Department who then reports to the Dean of the faculty.

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A Senior Assistant Registrar or Assistant Registrar is appointed to assist all administrative work in the faculty including all matters regarding the non-academic staff, registration of students, examination work and secretarial work of the faculty.

Main task of the office is to provide the administrative mechanism required for coordinating the departments and degree programmes. Also it is responsible for programme scheduling, coordinating, academic advising and maintaining students records.

The record room which is a part of the office, takes care of marks processing and programming and coordinating the examination processes.

The Assistant Bursar attached to the Faculty of Applied Sciences helps the smooth functioning of the finance and supplies activities under the delegated authority.



Dr. Meththika Vithanage
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Miss. D. S. M. Ranasinghe

Assistant Registrar



Mr. K. J. M. Nandana

Senior Assistant Bursar



Mr. T. Wimalakeerthi

Computer Instructor
(Record Room)



Mr. D.A Amila Deepal

Computer Instructor
(Record Room)

Mrs. Damayanthi Wijewardana	Miss. M. M. P. Mayadunne	Miss. W. M. G. S. Weerasinghe
Mrs. K.A.R.P. Rathnapala	Mrs. Nilakshi Sudharika	Mr. Lal Perera
Mr. G. Anuradha	Miss. Y. H. N. Dahami	Mr. L.M. Perera
Mrs. Damayanthi Perera	Ms. S. N. G. Lakshika	Mr. J. M. J. C. Jayasinghe
Mr. D. T. Weerasinghe	Ms. K. A. D. L. Kathriarachchi	Mr. W. D. I. Madhubhashana



Instrument Centre

Maintained under Office of the Dean, Faculty of Applied Sciences, University of Sri Jayewardenepura, the Instrument Centre was initiated to house state of the art, modern equipment under qualified and trained personnel and to make them available to users of all departments.

Academic Staff



Dr. Asitha T. Cooray
B.Sc. (USJP, Sri Lanka), Ph.D. (NMT, USA)

Senior Lecturer and Coordinator of the Instrument Centre
Research interest: Analytical Chemistry, Aquatic Chemistry, Environmental Chemistry and Impact of climate change on water resources
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Dr. Thusitha N. B. Etampawala
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Dr. Dakshika Wanniarachchi
B.Sc. (Peradeniya), Ph.D. (Wayne State University, USA)

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Research interest: Development of an automated device to monitor fermentation stage in black tea manufacturing process, Development of ceramic filter materials for removal of heavy metals, organic matter and dyes from water
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Scientific Assistants

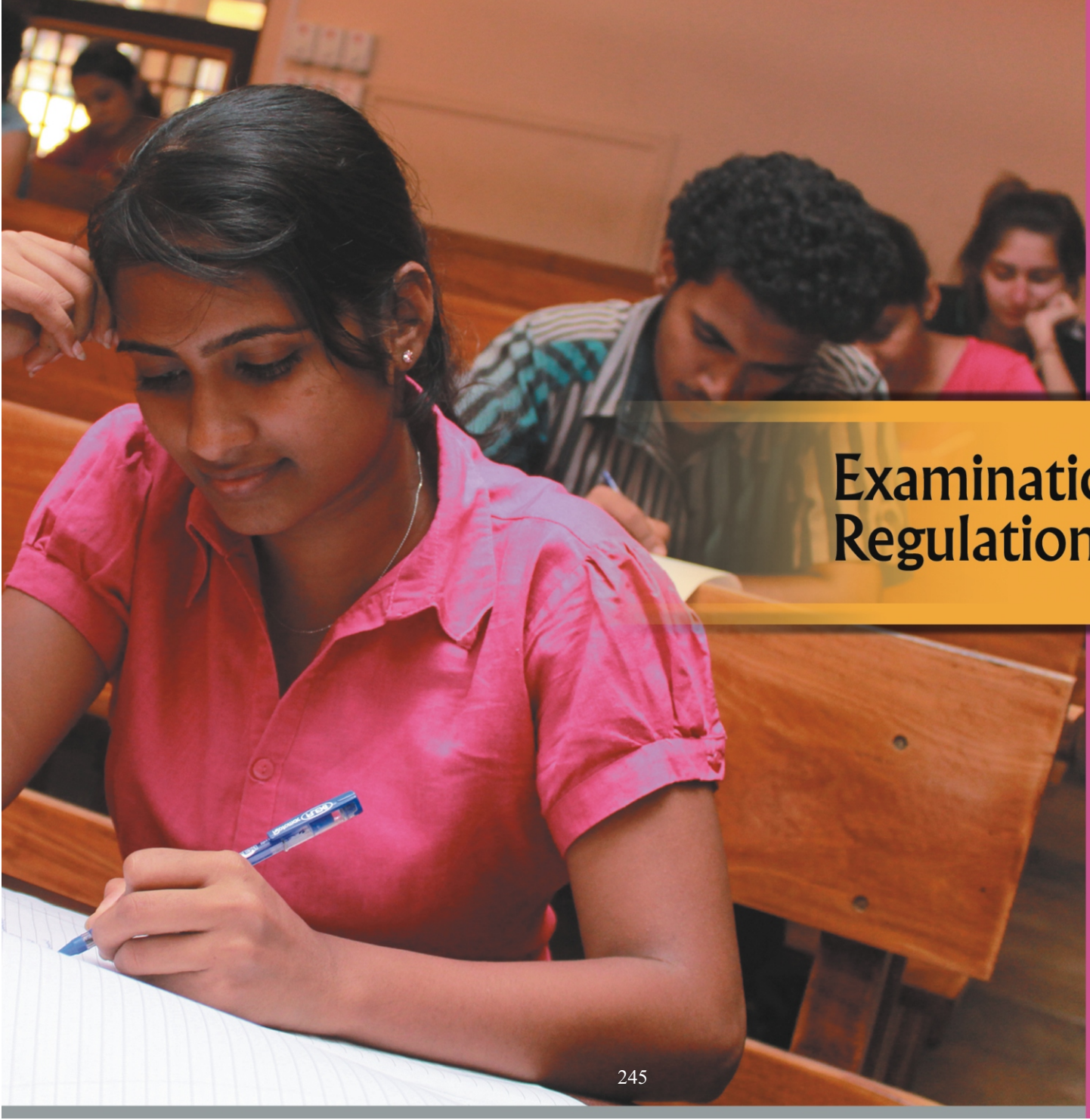


Mrs. R. M. Munasinghe
B.Sc. (Hons) (Chem, Pera, SL) Reading for M.Sc.(Colombo).

Scientific Assistant
Email - 7rajika@gmail.com

Supporting Staff

Mrs. D. I. Wijemanna



Examination Regulations

Effective Period

1 The following courses and examination regulations will be effective for students entering the Faculty of Applied Sciences in the year 2016 to follow B.Sc. Degree programmes.

Academic year and Semesters

2 Each academic year will consist of two semesters and each semester will have a period of 15 weeks of teaching.

Course Subjects

3 The Faculty conducts B.Sc. Degree level courses in the following subjects.

- Applied Mathematics (AMT)
- Aquatic Resource Management (ARM)
- Biology (BIO)
- Chemistry (CHE)
- Computer Science (CSC)
- Economics (ECN)
- Electronics and Embedded Systems (EES)
- Environmental Mangement and Forestry (EMF)
- Food Science and Technology (FST)
- Industrial Chemistry (ICH)
- Information and Communication Technology (ICT)
- Management Science (MAN)
- Mathematics (MAT)
- Microbiology (MBL)
- Plant Biology (PBL)
- Plant Biotechnology (PBT)
- Physics (PHY)
- Polymer Chemistry (PCH)
- Polymer Science and Technology (PST)
- Zoology (ZOO)

Degree Programmes

4 The Faculty conducts the following B.Sc. Degree courses based on the subjects given in section 3

- B.Sc. General Degree - Three years
- B.Sc. Special Degree - Four Years
- B.Sc. Special Degree in Food Science and Technology - Four years
- B.Sc. Special Degree in Sports Science and Management - Four years
- B.Sc. Honours Degree in Applied Sciences - Four years

In the first year, all students (except those following B. Sc. in Food Science and Technology and Sports Science and Management) should register for a B.Sc. General Degree programme selecting a combination of three subjects as given below.

Students who wish to select one of the following course subjects offered by the Department of Botany (PBT, PBL or MBL) have to follow the course as a common course until the first semester of the second year. However a student who wishes to change a course subject offered by the Department of Botany can do so at the beginning of the second semester of the second year.

Students who have entered through the Biological Science stream of G.C.E. Advanced Level can select one of the combinations given below.

Code	Combinations available for **Biological Science** students
B01	Chemistry, Zoology, Physics
B02	Chemistry, Zoology, PBT/PBL/MBL
B03	Chemistry, Zoology, Environmental Management and Forestry
B04	Chemistry, PBT/PBL/MBL, Environmental Management and Forestry
B05	Chemistry, Zoology, Aquatic Resource Management
B07	Chemistry, Management Science, PBT/PBL/MBL
B08	Chemistry, Zoology, Management Science
B09	Chemistry, Food Science, Biology
B12	Chemistry, Management Science, Aquatic Resource Management
B13	Chemistry, Biology, Management Science

PBT - Plant Biotechnology; PBL - Plant Biology; MBL - Microbiology

Students who have entered through the Physical Science stream of G. C. E. Advanced Level can select one of the following combinations.

Code	Combinations available for **Physical Science** students
P01	Mathematics, Chemistry, Physics
P02	Mathematics, Chemistry, Statistics
P03	Mathematics, Physics, Statistics
P04	Mathematics, Chemistry, Management Science
P05	Mathematics, Physics, Management Science
P06	Mathematics, Computer Science, Statistics
P07	Mathematics, Computer Science, Physics
P08	Mathematics, Statistics, Economics
P12	Mathematics, Applied Mathematics, Computer Science
P13	Mathematics, Physics, Electronics and Embedded Systems
P14	Mathematics, Management Science, Applied Mathematics

The following subject combinations are available for students entering from either Biological Science stream or Physical Science stream.

Code	Combinations available for **Biological Science/Physical Science** students
C01	Chemistry, Management Science, Environmental Management and Forestry
C02	Chemistry, Physics, Polymer Science and Technology

Students who have entered through the Physical Science stream of G. C. E. Advanced Level following Combined Mathematics, Physics and ICT at G. C. E. Advanced Level examination must select one of the following combinations.

Code.	Combinations available for students who have sat for **Combined Mathematics, Physics** and **ICT**
I01	Mathematics, Physics, Information and Communication Technology
I02	Mathematics, Physics, Electronics and Embedded Systems

Changing Subject Combinations

6 A definite number of students are selected for each of the above combinations by the Faculty Board, depending on the number of applicants, facilities available in relevant departments, choice of the applicants and their performance at the G.C.E. Advanced Level examination. Students can change their subject combination only during the first two weeks of the first academic year. Those who wish to change the combination should make an application to the Dean within the first two weeks of the academic year and obtain the approval. The Dean will approve such changes only after considering all such applications.

B.Sc. Special Degree Programmes

7

The Faculty conducts B.Sc. Special Degree programmes in the following subjects.

- Applied Mathematics
- Aquatic Resource Management
- Biology
- Chemistry
- Computer Science
- Environmental Management and Forestry
- Food Science and Technology
- Industrial Chemistry
- Mathematics
- Microbiology
- Plant Biology
- Plant Biotechnology
- Physics
- Polymer Chemistry
- Sports Science and Management
- Statistics
- Zoology

Candidates for Special Degree programmes are selected at the end of the second year. Selection of candidates is based on the academic performance of the applicants during the first two years. In order to follow a special degree programme in any subject, students should take a minimum of 20 credits for the respective subject and should obtain a minimum GPA of 3.30 for the relevant subject and a minimum GPA of 2.00 for the other two subjects. However, the number of selected students will vary based on facilities available in respective departments.

B.Sc. Special Degree Programmes in Food Science and Technology and Sports Science and Management

8

Students for the programmes B.Sc. (Special) Degree programme in Food Science and Technology and B.Sc. (Special) Degree programme in Sports Science and Management are selected by the University Grants Commission directly. The Faculty will not admit any other student for these programmes and students who enter the University for these courses will not be allowed to register for any other programmes.

B.Sc. Special Degree Programme in Human Biology

9

A limited number of students are selected, at the end of the first year from the biological science students, for the B.Sc. special degree programme in Human Biology conducted by the Faculty of Medical Sciences. Candidates for this will be selected by the Faculty of Medical Sciences, based on the academic performance of the applicants during the first year.

Course Units

10 Courses conducted by each Department comprise of / consist of independent units. Course units conducted by each department are given at the beginning of this document. A course unit may consist of one or more of the following components: lectures, practical classes, seminars, a project assignment and field classes.

Credit Values of Course Units

11 Each course unit has a defined credit value ranging from 1.0 to 10.0 which is always a multiple of 0.5. The credit value is an indicator of the size and value of the unit. For example a course unit of 1.0 credit consists approximately of 15 lecture hours or 45 practical hours. A course unit of 2.0 credits consists of approximately 30 lecture hours or 90 practical hours. A 6-hour field class is approximately equivalent to a single one hour lecture.

Name and Symbol of a Course Unit

12 Each course unit has a symbol and a name. The symbol indicates the subject of the unit, the year, whether it is a general degree unit or a special degree unit, its serial number and the credit value.
Serial numbers 1-49 are used for general degree units and numbers 51-99 are used for special degree units.

Example 1

PBL 122 2.0 Plant Systematics.

PBL	1	22	2.0	Plant Systematics.
Subject	year	serial number	credit value	name

Example 2

CHE 358 1.0 Advanced Organic Spectroscopy. This is a third year chemistry course unit conducted for Special Degree students with a credit value of 1.0.

Types of Course Units

13 **Course units are classified as follows.**

1. Compulsory Course Units - Course units for which candidates following the relevant subject should obtain a minimum specified grade at the examination to qualify for the Degree or a Class (in the Degree). Examples: Practical course units, Research projects for Special Degree candidates.

2. Core Course Units - Course units, which are essential components of a subject. All candidates studying the relevant subject must follow the Core Course Units and candidates who do not appear for an examination of a Core Course Unit will be given an absent (ab) grade as given in section 19.

3.Optional Courses Units - These course units are chosen by candidates according to their preference in order to complete the degree course. Candidates can choose to follow these units in any study year.

4. Non credit Compulsory Course Units- Course units which should be followed by all candidates in order to obtain a minimum specified grade at the examination, however, not counted in calculation of GPA as given in section 21. Example: English.

5. Noncredit Optional Course Units - Course units which can be followed by a candidate based on choice, however, not counted in calculation of GPA as given in section 21.

Course Units for B.Sc.General Degree Course

14 In order to complete the General Degree programme all candidates should register for course units with a minimum total credit value of 90.0 and a maximum total credit value of 99.0. The total credit value of the course units, for one main subject for the duration of three years should not be less than 27.0 and should not be more than 36.0.

A candidate can choose to register for a limited number of course units from any other subject apart from the three main subject combinations of his program to fulfill the above conditions.

When the total credits of the course units a candidate is registered for is less than 90.0 the total is taken as 90.0 in order to calculate the GPA of the candidate, as given in section 21.

Course Units for B.Sc. Special Degree Programmes

15 In order to complete a Special Degree programme, candidates should register for course units with a minimum total credit value of 120.0 and a maximum of 126.0. This should include course units of 60.0 credits specified by the relevant department in the third and fourth years. The cumulative credit value of all the course units of the special subject registered by a candidate, during the four years should be at least 80.0.

For some subjects, some of the course units taught in the second year may be prerequisites for a Special Degree program. Candidates who hope to follow Special Degree programs should, therefore, obtain guidance from the respective Heads of Departments at the beginning of the second year.

When the total credits valve of the course units for which a candidate is registered is less than 120.0, the total is taken as 120.0 in order to calculate the GPA of the candidate, as given in section 21.

Course Units for B.Sc. (Special) Degree Programme in Food Science and Technology and

16.a In the first two years, course units in B.Sc. Special Degree programme in Food Science & Technology will be selected from those offered by the Departments of Chemistry, Botany and Food Science and Technology, while in the third and fourth years, all the units will be conducted by the Department of Food Science and Technology. When registering for a 4 year course in Food Science and Technology, a student should select course units that will have a cumulative credit value of at least 80.0. All candidates are also required to complete a research project of 15 credits in the second semester of the fourth year.

Course Units for B.Sc. (Special) Degree Programme in Sports Science and Management

16.b The Special Degree in Sports Science and Management will consist of specialized courses spanning four academic years (eight semesters). Students should complete 120 credits of coursework/ research to qualify for award of the Bachelor Science in Sports Science and Management degree. The programme is a collaboration of the Faculty of Applied Sciences, Faculty of Humanities and Social Science, Faculty of Management Studies and Commerce, Faculty of Medical Sciences, Physical Education unit, University of Sri Jayawardenepura and Gampaha Wickramarachchi Ayurveda Institute.

Course Units for B.Sc. (Honourss) Degree in Applied Sciences

16.c In order to complete the B.Sc. (Hons) Degree in Applied Sciences, candidates should register for course units having a minimum cumulative credit vale of 30 in the fourth year after completion of 90 credits from their B.Sc. General Degree Programme. In their fourth year, the candidates must register for course units from the following subjects: ICT, PST, Management Science, Economics, Biology, PBT, Mathematics, Statistics, Chemistry, Physics, Computer Sciences, EMF, ARM and Zoology. All candidates are also required to undergo Inplant Training (Internship/Industrial research project; 10 compulsory credits) in the second semester of the fourth year.

Registration for Course Units, Examinations and Admission card

17 All candidates should submit an application for registration giving details of the course unit examinations he/she intends to sit for during the semester, to the Registrar through the Dean, at the end of the fourth week of the semester or before any date prescribed by the Faculty. An admission card, giving the course units for which the candidate is allowed to sit for, is issued to each applicant by the Registrar before the due examinations. The candidate should submit the admission card at all examinations to the supervisor, invigilator or the examiner and obtain his/her signature to certify that he/she sat for the examination. The admission card should be kept by the candidate and after the examinations should be presented to the Dean's office.

Methods of Assessment

18 A candidate's performance at each course unit is assessed and graded by one or more written examinations, practical examinations, oral examinations, reports, presentations etc. All assessments shall be carefully structured to align with the intended learning outcomes of the courses. The assessment structure is modified when required, to facilitate the achievement of intended learning outcomes of each course. When there are multiple assessment methods for a course unit, marks obtained for each assessment is combined to obtain the final grade for the course. The assessment structure and the grading mechanism for each course shall be communicated to students at the beginning of the course.

Grades and Grade Point Values

19 Grades given at course unit examinations and Grade Point Values attributed to each grade are given below.

Grades and Grade Point Values											
A+	A	A-	B+	B	B-	C+	C	C-	D+	D	E
4.00	4.00	3.70	3.30	3.00	2.70	2.30	2.00	1.70	1.30	1.00	0.00

Grade	Grade Point Values	Implication
A+	4.00	Outstanding
A	4.00	Excellent
A-	3.70	Very good - excellent
B+	3.30	Very good
B	3.00	Good
B-	2.70	Fair - good
C+	2.30	Fair
C	2.00	Satisfactory
C-	1.70	Weak - satisfactory
D+	1.30	Weak
D	1.00	Bad - weak
E	0.00	Bad
ab	0.00	absent
M	0.00	absent on medical reasons

Passing Course Unit Examination

20 A candidate who scores a grade C or better is considered to have passed the relevant examination.

Grade Point Average (GPA)

21 Grades obtained by each candidate at course unit examinations are evaluated according to the following equation in order to calculate his/her Grade Point Average. This value will be rounded to a single decimal point.

$$GPA = \sum \frac{\text{Grade Point scored for the Course Unit} \times \text{Credit Value of the Course Unit}}{\text{Cumulative Credit Value of all Course Units followed}}$$

Compulsory and Core Units

22 It is essential to follow the compulsory & core course units selected by students according to their subject combination.

Compulsory Practical Units

23 Candidates should obtain at least a D+ grade for each of the compulsory practical course units he/she follows in order to qualify for a degree. Those students who obtain a lower D grade for the practical course unit during their third year of study, will be given an opportunity to repeat the practical exam in the same year. A student must obtain at least a D+ grade for each practical course unit as a compulsory requirement to qualify for the degree. The special option will not be given to theoretical courses.

Compulsory English

24 All candidates should sit for the compulsory English Course unit examinations conducted by the Faculty in the first three semesters. Candidates should obtain at least an average C grade in order to qualify for the degree.

Research Projects in Special Degree Courses

25 Special Degree candidates should obtain at least a D grade for the Research Project unit in order to qualify for a Special Degree and should obtain at least a C grade for the Research Project unit in order to qualify for a First or Second Class Honours in the Special Degree.

Cut-off levels of GPA for Awarding Classes / Passes

26

Degree Programme	Grade Point Average (GPA) for Awarding Classes / Passes			
	Pass	Second Lower	Second Upper	First
All Degrees	2.00	3.00	3.30	3.70

Qualifying for B.Sc. General Degree

27.a

A candidate requires a Grade Point Average of not less than 2.00 for a minimum of 90 credits, with 27 minimum credits per subject, to qualify for a B.Sc. General Degree.

Qualifying for B.Sc. Special Degree

27.b

A candidate should obtain C grades or higher for course units of the Special subject with a cumulative credit value of at least 50% of the total credit value of the Special subject course units to qualify for a Special/Honours Degree.

Second Class Lower Division Honours

28

A candidate requires a Grade Point Average of not less than 3.00 to qualify for Second Class Lower Division Honours in the B.Sc. Degree.

A Special Degree candidate should obtain a B⁻ grade or higher for course units of the special subject with a cumulative credit value of at least 50% of the total credit value of the special subject course units in order to qualify for Second Class Lower Division Honours.

Second Class Upper Division Honours

29

A candidate requires a Grade Point Average of not less than 3.30 to qualify for Second Class Upper Division Honours in the B.Sc. Degree.

A Special Degree candidate should obtain a B⁻ grades or higher for course units of the special subject with a cumulative credit value of at least 50% of the total credit value of the special subject units in order to qualify for a Second Class Upper Division Honours.

First Class Honours

30 A candidate requires the Grade Point Average of not less than 3.70 to qualify for a First Class Honors in B.Sc. Degree.

A Special Degree candidate should obtain an A⁻ grade or higher for the course units of the special subject with a cumulative credit value of at least 50% of the total credit value of the special subject units in order to qualify for First Class Honors.

Option of reverting to the B.Sc. (General) Degree

31 A student for a B.Sc.(Special) Degree (except those who read for the B.Sc. Special Degree in Food Science & Technology and B.Sc. (Special) Degree in Sports Science and Management) may request the award of the B.Sc. (General) Degree foregoing the B.Sc. (Special) Degree, at the end of the third year of their studies.

The results of the B.Sc. (General) Degree shall be determined solely on the basis of the course units followed in the first three academic years. The candidate should have followed course units with a minimum credit value of 90 irrespective of subject areas.

The candidate should complete the minimum requirements of B.Sc. (General) Degree to be considered. The candidate may quality for a class according to his final results.

Obtaining a Higher Diploma in Applied Sciences

32 Candidates who fail to satisfy the criteria to obtain the B.Sc. Degree within five academic years will be eligible for an SLQF Level 04 Higher Diploma. A student must meet the following criteria to qualify for the Higher Diploma in Applied Sciences.

1) Complete a minimum of 60 credits out of which a minimum of 40 core credits including compulsory units from first and second year courses, and a minimum of 10 credits from third year courses, at the completion of 90 credits
2) Maintain a Grade Point Average of not less than 2.0 for the course units worth 60 credits selected by the student under conditions specified above
3) Obtain a D+ grade or higher for the compulsory courses during first and second years
4) Should be registered for first three years and have followed courses

Repeat Examinations

33 If a candidate fails or scores a C grade in a course unit examination, he/she can sit for the same course unit examination, in three further occasions only as a repeat candidate. In a case where the Department does not conduct the same course unit again or if the candidate wants to, he/she can sit for a different course unit examination instead, with the approval of the Head of the relevant Department. However, such a candidate will be considered as a repeat candidate. The highest grade given to a repeat candidate is C+.

Continuous assessments and research projects do not have repeat examinations and therefore the initial marks obtained by a candidate for such assessments are taken as the final mark for those assessments.

Postponement of Examination on Medical reasons

34 If a candidate fails to sit for an examination based on medical reasons, and a medical certificate given by the candidate is approved by the Faculty Board, he/she should sit for the next examination which will be recorded as the first attempt. (Refer student hand book for more details.)

Fees for Repeat Examinations

35 Repeat candidates repeating 1st and 2nd year course units should pay a repeat examination fee of Rs.100/- per course unit, subject to a maximum of Rs.500/- per semester, at the time of application for repeat examinations.

Repeat candidates repeating 3rd and 4th year course units, should pay a repeat examination fee of Rs.100/- per course unit, subject to a maximum of Rs.700/- per semester, at the time of application for repeat examinations.

Results of the Semester Examinations

36 The examination results will be released on a semester basis via the faculty website after the grades have been finalized by the respective examiners, and can be accessed at **pes.sjp.ac.lk**. In addition, the Head of the relevant Department will inform the results of course unit examinations by notice at the Department level.

Final Results of the Degree Programs

37 Final decisions on the results of examinations and the award of degrees will be taken by the Annual Examiners Board, subject to confirmation by the Senate and the Council. After confirmation by the Senate and the Council, the degrees will be awarded at the Annual Convocation.

Examination Offences and Penalties

38 All candidates should abide by the regulations given in the Examination by-law No.2 of 1986. Candidates who disobey the regulations will be penalized as stated therein. Details on this are given in the Students Hand Book.

Degree Transcripts

39 In addition to the Degree Certificate, the Registrar will issue a Transcript to graduates at the Annual Convocation. A transcript contains the following information: Course unit examinations for which the candidate has registered; Grades obtained by the candidate for examination of those course units; Grade Point Average; Degree results and the Class; Grade Points of respective grades and implications of grades; Date of validity of the degree. Additional copies of Transcripts can be obtained from the Examinations Division of the University by paying the relevant fee.

Language Policy

40 The medium of the degree programmes of the Faculty of Applied Sciences is English. However in order to facilitate easy comprehension of lectures in Chemistry, Zoology, Physics, Mathematics and statistics, lectures will be conducted in English medium supplemented with Sinhala explanations during the first year. Those subjects from second year and all other subjects from first year will be conducted entirely in English medium from second year onwards. Papers will be set only in English and the candidates will have the choice of answering in Sinhala or in English in the first year.

Period of Internal Studentship

41 Student registered in the B.Sc. (General) Degree Programme should complete the said programme within six academic years, commencing from the initial year of registration. For all Special Degree Programmes, the above requirement is seven years, commencing from the initial year of registration.

If any student fails to complete the relevant degree programmes in the time frame given above, they may not qualify to obtain the degree. However, they may be eligible to obtain a Higher Diploma in Applied Sciences if the criteria specified in **Section 32** are satisfied.

Changes of Courses and Examination Regulations

42 The Faculty Board of Applied Sciences has the right to change any statement given above subject to approval of the Senate.

43

Students are strongly advised to obtain guidance from academic counsellors prior to registration for courses / course units. Academic counselors of each subject are as follows.

Department	Departmental Counsellors
Botany	Dr. Dimuthu S. Manamgoda Mrs. G. G. S. Wajira Nandanee
Chemistry	Dr. C. D. Jayaweera Dr. C. Padumadasa
Food Science & Technology	Dr. (Mrs.) I .Wicramasinghe Dr. J. M. J. K. Jayasinghe
Forestry & Environmental Science	Prof. (Mrs.) Nilanthi Bandara Dr. G. G. T. Chandrathilake
Mathematics	Dr. R. Sanjeewa Dr. Jayantha Lanel
Physics	Dr. W. K. I. L. Wanniarachchi Dr. (Mrs.) M. L. C. Attygalle
Computer Science	Dr. Ananda Edirisuriya Dr. G. R. S. De Silva
Zoology	Dr. D. C. T. Dissanayake Dr. F. S. Idroos

Subject Coordinators

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Subject	Subject Coordinators
Biology / Molecular Biology	Prof. B. G. D. N. K. De Silva Dept. of Zoology
	Dr. D. H. H. Munasinghe Dept. of Botany
Economics	Dr. (Mrs) U.A.D.P. Gunawardena Dept. of Forestry & Env. Science
Electronics and Embedded Systems	Dr. W.K.I.L. Wanniarachchi Dept. of Physics
Industrial Chemistry	Dr. A. T. Cooray Dept. of Chemistry
Informationand and Communications Technology	Dr. Ananda Edirisooriya Dept. of Comp. Science
Management Science	Mr. G.J.K. Silva Dept. of Mathematics
Polymer Science & Technology	Dr. Madhubhashini Maddumaarachchi Dept. of Chemistry
Polymer Chemistry	Dr. Madhubhashini Maddumaarachchi Dept. of Chemistry
Sports Science and Management	Dr. N. M. S. Sirimuthu Dept. of Chemistry

Student Counsellors Committee (SAC)

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To obtain advice on students welfare activities such as attendance, medical certificates, hostels and canteens, scholarship & bursaries the following student counsellors committee has been appointed by the faculty board under the approval of the senate.

Prof. L. Karunanayake	(Dept. of Chemistry)
Dr. Rinukshi Wimalasekara	(Dept. of Botany)
Dr. C. D. Jayaweera	(Dept. of Chemistry)
Dr. N. P. L. N. Palliyaguru	(Dept. of Chemistry)
Dr. T. G. I. Fernando	(Dept. of Computer Sc.)
Dr. J. M. J. K. Jayasinghe	(Dept. of Food Sc. & Tech.)
Dr. Daham Jayawardana	(Dept. of Forestry & Env. Sc.)
Dr. Menaka Liyanage	(Dept. of Mathematics)
Dr. N. C. Ganegoda	(Dept. of Mathematics)
Dr. N. G. S. Shantha	(Dept. of Physics)
Dr. M. L. C. Attygalle	(Dept. of Physics)
Mr. P. Dias	(Dept. of Statistics)
Dr. D. C. T. Dissanayake	(Dept. of Zoology)
Dr. S. Weerasinghe	(Sports Sc. & Mgt. Prg.)
Dr. S. Hettiarachchi	(Chief Medical Officer)

Students should find the following information very useful:

The help line for students	072 6885344
Director of student welfare	Prof. Hemantha Kottawatta 0112758330
Proctor	Mr. A.R.P.C. Udayakumara
Deputy Proctors / FAS	Dr. R. R. M. K. P. Ranatunga Dr. Priyan Perera Dr. N. M. S. Sirimuthu Dr. G. R. S. De Silva
University Medical Officer	0112803199, 0112758499

Scholarships / Medals offered by the faculty

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Dr. Sirimathie Wewala Scholarship	Awarded to the Mathematics special degree student who obtains the highest GPA in the first three years of the B.Sc. (Special) Degree for Mathematics.
S. V. Wickremasinghe Scholarship	Awarded to the student who obtain highest GPA in the first year among the students with economic difficulties.
Applied Science 78 Group Scholarship	Awarded to the student who obtains highest GPA in the first year.
Jayantha Pathberia Scholarship	This scholarship is awarded to the student who obtains the highest GPA for Forestry and Environmental Science subject in the 1st and 2nd academic years of the B.Sc. Degree.
Professor Tuly de Silva Gold Medal	Awarded to the student who obtains highest GPA at the B.Sc. Chemistry (Special) degree examination.
Professor G.C.N. Jayasuriya Gold Medal	Awarded to the student who obtains overall highest GPA for Chemistry subject in the B.Sc. general degree examination.
Dr. Sirimathie Wewala Gold Medal	Awarded to the student who obtains a First Class Pass with the highest GPA at the B.Sc.(Special) Degree in Mathematics.
Professor R. A. Dayananda Gold Medal	Awarded to the student who obtains a First Class Pass with the highest GPA at the B.Sc. (Special) Degree in Statistics.

Professor W. S. Fernando Gold Medal	(i) Awarded to the student who obtains highest GPA physical and Inorganic chemistry at the B.Sc. (Special) Degree inChemistry. (ii) Awarded to a General Degree student with highest GPA in Statistics.
Professor P. C. B. Fernando Gold Medal	Awarded to the student who obtains a First Class Honours with the highest GPA for all Physics course units at the B. Sc. (Special) Degree examination in Physics.
Professor H. G. Nandadasa Gold Medal	Awarded to the student who obtains a First Class or Second upperPass with highest marks in B.Sc. (Special) Degree in Plant Biotechnology.
Professor Piyasiri Amilasith Yapa Gold Medal	Awarded to the student who obtains a First Class Pass with highest marks in B.Sc. (Special) Degree in Plant Biology.
Forestry and Environmental Scienc Gold Medal	Awarded to the student who obtains a First Class Pass with highest GPA in B.Sc. (Special) Degree in Forestry and Environmental Science.
Chemical Industries Colombo Ltd. Prize	Award 1 : This prize is awarded to the student who obtains the highest GPA of the final examination in the B.Sc. Chemistry (special) degree. Award 2 : For 2 students who have obtained the highest GPA at the B.Sc. (Special) degree 3rd year ending examination

L. A. C. Alles Award	Awarded to the student who obtains highest qualifications for the Food Science and Technology subject in the B.Sc. (Special) degree in Chemistry.
Prof. Winstan Eric Ratnayake Memorial	Award Awarded to the student who obtains a First Class Pass with highest GPA in B.Sc. (Special) Degreein Zoology.
Virtusa Academic Merit Prize	Awarded to the student who obtains a First Class Pass with highest GPA in B.Sc.(Special Degreein Computer Science.
Polymer Science & Technology M.Sc. Alumni Gold Medal	Awarded to the student who obtains the highest GPA with a Second Class Upper pass and the highest number of 'A' grades for the Polymer Science & Technology subject in the Bachelor of Science Degree.
Dr. Sunethra Weerakoon Gold Medal	Awarded to the student who obtains a first class pass with best performance in Mathematics at the B.Sc.(Special) Degree in Mathematics.
Sports Science and Management Gold Medal	Awarded to the student who obtains a First Class pass with thehighest GPA and the highest number of 'A' grades in B.Sc.(Special) Degree in Sports Science and Management.
Prof. S. Chandrani Wijeyarathn Gold Medal	Awarded to the student who obtains a First Class or Second Upper pass with the highest GPA in B.Sc.(Special) Degree in Microbiology.





"Sisi Arundathee - 2017" at BMICH





"Sip Sayura - 2017" at Hunuwala Dharmaraja Maha Vidyalaya



"Sahurda Yathra - 2017" at
Talawa Maha Vidyalaya, Kariyamaditta



"Sahurda Yathra - 2017" at
Talawa Maha Vidyalaya, Kariyamaditta



The Alumni Association of the Faculty of Applied Sciences University of Sri Jayewardenepura







The Alumni Association of the Faculty of Applied Sciences
University of Sri Jayewardenepura

The Alumni Association of the Faculty of Applied Sciences, University of Sri Jayewardenepura was established on 16 March 2013 to foster a lifelong connection between the university and Alumni. The mission of the Alumni is to guide the university to achieve academic excellence by strengthening the ties between its communities.

The objectives of the association are:

- *To encourage, foster and promote close relations between the Faculty and its alumni and among the alumni themselves,*
- *To promote, in the alumni body, an interest in the affairs and well-being of the Faculty,*
- *To provide and disseminate information regarding the Faculty, its graduates, staff and students, to the alumni,*
- *To initiate and develop programs for the benefit of the alumni,*
- *To assist and support the efforts of the Faculty in obtaining funds for its development,*
- *To serve as a forum through which alumni may support and advance the pursuit of academic excellence at the Faculty,*
- *To guide and assist alumni who have recently completed their courses of study at the Faculty to obtain employment and engage in productive pursuits useful to society,*
- *To pursue any other activity consistent with the above objectives*

Office Bearers of the Association for 2013-2015

The President: Prof. Wimaladarma Abeywickrama

The Vice-Presidents:

Dr. Prasansa Kalukottege
Dr. Kamal Ranatunge
Mrs. Shimali Lokuge

General Secretary: Mr. Nimal Athukorala

Assistant Secretaries

Dr. Pahan Godakumbura
Mrs. Deepika Nethsinghe

Treasurer: Prof. Hiran Amarasekera

Assistant Treasurer: Mrs. Rasika De Silva

For more information, please visit: **http://science.sjp.ac.lk/alumni/**

FACULTY OF APPLIED SCIENCES
MASTER PLAN

