1 Eastern University, Sri Lanka

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1.1 History

The Batticaloa University College was established on 1st August 1981 to fill a long felt need for the development of a Higher Educational Institution in the Eastern Province, Sri Lanka. This College began with two faculties: Faculty of Science and Faculty of Agriculture. Both these faculties were affiliated to the University of Peradeniya. In 1986 this University College was elevated to the status of a University under the name of Eastern University, Sri Lanka (EUSL).

The Eastern University, Sri Lanka was established on 1st October 1986 by a University order dated 26th September 1986 issued under section 2 of the Universities Act No. 16 of 1978. In 1988 two new faculties, Faculty of Commerce and Management and Faculty of Cultural Studies were established.

The Faculty of Cultural studies was then expanded and renamed as Faculty of Arts and Culture in 1991. The Faculty of Health-Care Sciences was established in 2006. Faculty of Technology was established in 2017. A campus of Eastern University functions at Trincomalee with the Faculty of Applied Science, Faculty of Communication & Business Studies, and a unit of Siddha Medicine. Swami Vipulananda College of Music and Dance at Kallady, Batticaloa is attached to the Eastern University and renamed as Swami Vipulananda Institute of Aesthetic Studies (SVIAS) where Degree Programmes in Music, Dance and Performing Arts are conducted.

1.2 Location

The Eastern University, Sri Lanka is located in the village of Vantharumoolai, 17 km to north from Batticaloa and about the same distance to south from Valaichchenai.

The University lies on both sides of the Batticaloa-Colombo main road. The Senate block, Faculty of Agriculture, Faculty of Technology, some buildings

belonging to Faculty of Science, Faculty of Arts & Culture, Staff Development Centre, and farm lie on the land-side of the road. The new Science Block, Faculty of Agriculture, Faculty of Technology, some buildings belonging to Faculty of Arts & Culture and Faculty of Commerce & Management, library, students' hostels, staff quarters, sports center, medical center, English Language Teaching Unit, Centre for Information and Communication Technology, and the playground lie on the sea-side of the road. The Swami Vipulanada Institute of Atethices Studies (SVIAS), Faculty of Health-Care Sciences and Centre for External Degrees and Extension Courses are located at Batticaloa. The Trincomalee Campus is in Koneshapuri, Trincomalee. You can get a glimpse of the Eastern University, Sri Lanka by maps attached.

1.3 Vision

Centre of excellence for higher learning in Sri Lanka

1.4 Mission

To facilitate learning, research, and dissemination of knowledge to produce competent graduate through conducive environment with industry-community collaboration to serve socio-economic and cultural needs of the community

1.5 The Crest

The crest of the Eastern University, Sri Lanka is shown below.

The crest of the University, shown above, has the symbols of a half of sun and an open book at its centre. Around the center, name of the University

appears in three languages English, Tamil, and Sinhala. The half sun symbolizes arise of light of wisdom. The crest therefore symbolizes the growth of wisdom along with culture. The motto is "PER ARDUA AD SCIENTIAM": Knowledge Through Hard Work.

1.6 Authorities of the University

The Authorities of a University shall be the following:

(i) the Council;
(ii) the Senate;
(iii) the Campus Board(s);
(iv) the Faculty Boards.

The Council of a University shall be the executive body and governing authority of the University and shall consist of the Vice-Chancellor, Deputy Vice-Chancellor, Rectors of campuses, Deans of the faculties, two nominees from the Senate, and external members nominated by the University Grants Commission. The Chairperson of the Council shall be the Vice-Chancellor.

The Senate is the academic authority of the University and shall consist of the Vice-Chancellor, Deputy Vice-Chancellor, Rectors, Directors of Institutes, Deans of the faculties, Heads of academic departments, all Senior Professors/Professors of the University, Librarian and two nominees from each Faculty Board. The Chairperson of the Senate shall be the Vice-Chancellor.

The Campus Boards is responsible for the internal administration of the Campus. The Chairperson of the Campus Board is the Rector.

The Faculty Board is the academic authority of the faculty and shall consist of the Dean, all permanent Senior Professors, Professors, Associate Professors, Senior Lecturers and Lecturers, two members elected by the permanent Lecturers(Probationary), two members of the permanent staff imparting instructions in the Faculty, two student representatives, and three persons not being members of the staff of the University elected by the Faculty Board from among persons of eminence in the areas of study relevant to the Faculty. Dean shall preside at all meetings of the Faculty Board.

1.7 Chancellor and Officers of the University

Chancellor

The President shall nominate the Chancellor of each University. The Chancellor shall be the Head of the University, hold office for a period of five years reckoned from the date of his nomination, and shall, preside at any Convocation of the University. **Prof. M. Selvarajah** is the present Chancellor.

Vice Chancellor

The Vice Chancellor shall be a full-time officer, appointed for a term of three years, who is the chief executive, academic and accounting Officer. He shall be an ex officio member and Chairman of both the Council and the Senate. The present Vice Chancellor is **Prof. V. Kanagasingam.**

Rector, Trincomalee Campus

The Rector of a Campus shall be appointed by the Vice-Chancellor of the University to which such Campus is attached. He shall, unless he vacates office earlier, hold office for a period of three years reckoned from the date of his appointment and shall, unless removed from office, be eligible for re-appointment for a further period of three years immediately succeeding the aforesaid period. The Rector shall be a full-time officer of the Campus, academic and administrative Head of the Campus, Chairman of the Campus Board. The Rector shall be responsible for the maintenance of discipline within the Campus. The present Rector is **Prof (Mrs). C. G. Devadasan**.

Director, Swami Vipulananda Institute of Aesthetic Studies (SVIAS)

The Director shall, unless he/she vacates office earlier, hold office for a period of three years reckoned from the date of his/her appointment and shall, unless removed from office, be eligible for re-appointment for a further period of three years immediately succeeding the aforesaid period. The Director shall be a full-time officer responsible for academic and administration of the institute. The present Director is **Prof. (Mrs.) F. B. Kennedy.**

Deans of Faculties

Dean of a Faculty shall be a full-time officer and the academic and administrative Head of that Faculty. The Dean shall be elected by the Faculty Board from among the Heads of the Departments of Study comprising such Faculty. The Dean shall hold office for a period of three years. Where owing to leave of absence, illness or other cause, the Dean of a Faculty is temporarily unable to perform the duties of his office for a period not exceeding three months, the Vice-Chancellor shall appoint another Head of a Department of that Faculty to act in the post of Dean, for such period.
The academics at present holding the office are as follows:
Prof. J. Kennedy, Dean/Faculty of Graduate Studies
Prof. (Mrs). Punitha Premanandarajah, Dean/Faculty of Agriculture
Prof. T. Sathaananthan, Dean/Faculty of Health Care Sciences
Snr. Prof. P. Vinobaba, Dean/Faculty of Science
Dr.V. Gunapalasingam, Dean/Faculty of Arts & Culture
Prof. N. Rajeshwaran Dean/Faculty of Commerce and Management
Prof. T. Mathiventhan, Dean/ Faculty of Technology
Mr. S. Loheeswaran, Dean/Faculty of Applied Science, Trincomalee Campus
Mr. T. Baskarn, Dean /Faculty of Communication & Business Studies, Trincomalee Campus
Dr. V. Anavarathan, Dean/Faculty of Siddha Medicine, Trincomalee Campus

Registrar

The Registrar of a University shall be appointed by the Council. He shall be a full-time officer of that University and shall exercise, perform and discharge such powers, duties and functions as may be conferred or imposed on or assigned to him by this Act or by any appropriate Instrument. The Registrar shall be responsible for the custody of the records and the property of the University, the ex officio secretary of the Council and the Senate and the Assistant Accounting Officer of the University. The Registrar shall, subject to the direction and control of the Vice-Chancellor, be responsible for the general administration of the University and the disciplinary control of its non-academic staff. **Mr. A. Pahirathan** is the present Registrar of EUSL.

Bursar

The Bursar of a University shall be appointed by the Council upon the recommendation of a Selection Committee. He shall be a full-time officer of that University and shall exercise, perform and discharge such powers, duties and functions as may be conferred or imposed on or assigned to him by this Act or by any appropriate Instrument. The Bursar shall, subject to the direction and control of the Registrar, be responsible for the administration of the finances of the University, and maintain its accounts in such form and manner as may be prescribed by Rules. He shall have the custody of the funds of the University. **Mr. M. M. M. Fareez** is the present Bursar of EUSL.

Librarian

The Librarian of a University shall be appointed by the Council upon the recommendation of a Selection Committee. He shall be a full-time officer of the library and shall exercise, perform and discharge such powers, duties and functions as may be conferred or imposed on or assigned to him by this Act or by any appropriate Instrument.
The Librarian shall, subject to the direction and control of the Vice-Chancellor, be responsible for the administration of the library or libraries of the University. At present **Dr. W. J. Jeyaraj** is serving as Librarian.

1.8 Students Affairs Department (SAD)

The SAD facilitates all students' matters except academic activities. It functions under the guidance of the Director, Students' Support Services and Welfare, supported through an effective students' counseling system headed by the Senior Students' Counselor and a proctoral system headed by Proctor.

1.8.1 Students' Counseling

The Senior Student Counselor and the student counselors provide assistance and guidance to students on matters relating to outside their academic activity. The students can seek the assistance and guidance from the student counselors on following matters:
(i) adapting to the new campus life and environment;

(ii) advice in relation to accommodation, financial assistance (Mahapola, Bursaries, etc.); and
(iii) any personal problems students face.

1.8.2 Financial Assistance

The Mahapola scholarship programme and the Bursary scheme are the two major sources that provide financial assistance to the University students. Further information regarding this may be obtained from the SAD.

1.8.3 Student Identity

All registered students will be given an Identity Card and a Student Record Book. The students are advised to produce his/ her Identity Card when requested by any officials of the University and while attending to officials matters in the University. Therefore students should have their Identity Cards with them at all times. The records are maintained by the Assistant Registrar/Faculty of Science, in the Student Record Books.

1.9 Academic Affairs Department

This Department comes with the overall supervision of the Registrar and conducting all Examinations of the Faculties and Convening meetings and the key responsibilities of the Department is attending and follow up work of Research & Publication Committee, University Higher Degree Committee, Convocation Committee, Curriculum Evaluation Committee, and activities of the General Convocation and coordinating the Senate as per existing rules and regulations.

1.10 Senior Assistant Registrars (SAR)/ Assistant Registrars (AR)

(i) DR / Academic Affairs : Mrs. N. Nirumithan
(ii) SAR / Establishment (Academic) : Mr. A. Sujendran
(iii) DR / Establishment (Non-Academic) : Mr. V. Navirathan
(iv) DR/ General Services : Mr. V.Navirathan
(v) AR / CEDEC : Mr.V.Pragash
(vi) SAR/ Student Affairs : Mr. M. F. M. Marsook

1.11 Learning Environment

Library

The Library Network of the Eastern University, Sri Lanka comprises the Main Library which caters the faculties of Agriculture, Arts & Culture, Commerce & Management and Science, one branch library for the Faculty of Health Care Sciences, Trincomalee Campus Library for the Faculties of Communication & Business Studies and Applied Sciences and the Institute Library of Swami Vipulanandha Institute of Aesthetics Studies for the Faculty of Music.

There is a diverse collection of information resources in the EUSL libraries, especially in terms of the breadth and depth of coverage. The collection is multi-disciplinary, encompassing a variety of subjects related to the established faculties and a full range of services is provided in each of four libraries including loans, inter library loan, reference and advisory services.

The main library is opens at 8.00 am and closes at 8.00 p.m. on week days and at 4.30 p.m. in weekends. Students can access the e-resources through http://lib.esn.ac.lk/.

Center for Information and Communication Technology (CICT)

CICT provides adequate opportunities for students to acquire ICT skills and also provides ICT related technical assistance to the University. It conducts various foundation / supplementary courses in ICT for internal and external students of all the faculties. CICT provides computer laboratory facilities for courses conducted by all faculties in the main campus, and also provides students' access for computer usage (internet browsing, LMS, library resources through http://lib.esn.ac.lk/ , etc.) by opening the centre from 8.00 AM to 6.00 PM. The CICT also conducts certificate and diploma courses during weekends and vacation periods. The present Director of CICT is **Mr. M. Sakuntharaj.**

Department of English Language Teaching (DELT)

The DELT serves all the faculties at the University and provide students with guidance in learning and use of English as a Second Language (ESL) in their academic work. The DELT is sensitive to the needs of undergraduates who enter the University with varying levels of proficiency in English, and provide them adequate training to improve their English proficiency to enable them to follow the courses and read the literature in English in their chosen disciplines.

It is set up for the specific purpose of teaching English to the with a view to improving their knowledge of English to enable them to follow the courses and read the literature in English in their chosen disciplines. The present Head of DELT is **Mrs.Vijitha Thivakaran**.

Career Guidance Unit (CGU)

Career Guidance Unit (CGU) was established in 2004 under the guidelines of University Grants Commission (UGC) in order to have a unique role to play as a mediator between the University and the world of work, while integrating the career guidance activities with the curricular. CGU organizes and facilitates adequate training for students on 'soft skills'/ 'life skills'; it is addressed through the core curriculum as well as through tailor-made programmes. The present Director of CGU is **Prof. S. Arasaratnam.**

Physical Education Unit (PEU)

All sports activities are managed by the PEU, which is guided by the Sports Advisory Boards. The students are advised to make the best use of the facilities and participate in sport activities.

PEU has been set up with the vision to socialize a law- abiding and socially productive graduate, with the ability of effective leadership qualities and fair decision making, who is physically and mentally well balance and mission of producing an active and healthy generation with theoretically knowledge and practical activities of physical education. **Mr.S.Thibaharan** is the present Director of PEU.

Religious Entities

A Hindu Kovil, a mosque, a church, and a Buddhist temple are located in the University premises (religious Court) for religious activities.

Gender Equity and Equality (GEE) Cell

EUSL is committed to the promotion of Gender Equity and Equality (GEE) and women's empowerment where all students, academic, administrative and support staff, female and male, enjoy equal opportunities, human rights, and free from all forms of discrimination and harassment. As such members of the University community have the responsibility of ensuring that it is free from gender inequity and Sexual and Gender Based Violence (SGBV).
Thus EUSL policy on GEE is designed to promote equality between women and men; to eliminate unlawful discrimination and harassment; and to provide an inclusive working, learning and social environment in which the rights and dignity of all its staff and students are respected to assist them in reaching their full potential.

1.12 Guidance

Each student will be assigned with a senior member of the Faculty who will be the Course Advisor. He/she will be available to the student to discuss academic and personal matters and provides appropriate assistance and guidance. Students are requested to make use of this facility and discuss any problems they may face with the Course Advisors during their entire University career.

1.13 Facilities

Hostels

Hostels are available in Vantharumoolai and Palacholai for students. A warden is in-charge of each hostel and in addition there are residential and part time sub-wardens to attend to hostel matters of students. The students are advised to meet the wardens and the sub-wardens in all matters related to activities of students in the hostels.

Canteens

There are canteens which cater mainly to the needs of students, where students may obtain food and tea at reasonable prices. Canteens are open from 7.30 a.m. to 7.00 p.m. during the working days.

Health Service

A University health service is available to staff and students of the University to receive immediate medical assistance. University Medical Officer will in-charge for the services including certifying the medical certificate.

Student Centre

The Student Centre provides a common meeting place for students and staff. Besides canteen facilities, the centre has a spacious common room for entertainment.

Post Office

The post office for the use of staff and students of the University is situated within the University premises. It is open from 8.00 a.m. to 4.00 p.m.

Banks

Branches of the People's Bank and Bank of Ceylon operate with Auto Teller Machines (ATM) service within the University premises. University accounts are maintained at these branches which also handle all transactions. The students can receive their Mahapola and Bursary Scholarships installments through these banks.

2 Faculty of Science

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2.1 Introduction

The Faculty of Science was set up when the Batticaloa University College was established on 1st August 1981. The Faculty consists of six Departments, namely, Department of Botany, Department of Chemistry, Department of Computing, Department of Mathematics, Department of Physics and Department of Zoology. The Department of Botany and Department of Zoology have a good collection of locally available and imported specimens in the Herbarium (Botany) and Museum (Zoology) to make the teaching more meaningful and fruitful. The faculty comprises with a strong academic community with good research output. The Faculty offers Botany, Chemistry, Computer Science, Mathematics, Physics and Zoology as Principal subjects for the degree programmes.

Infrastructures

The Faculty of Science building complex is situated in the East side of the University which is partly completed. Zoology, Chemistry, Computing and Mathematics departments function in this new building, while the Botany and Physics departments are still situated in the old faculty buildings located in West side of the University. The proposed Science complex with five blocks for each department will be built in near future with all modern facilities.

2.2 Administrative Officers

Dean of the Faculty

Senior Professor P. Vinobaba
BScHons (Jaffna), PhD (Stirling-UK), CBiol (UK), MIBiol (U.K)

Heads of Departments

The Head of a Department of Study shall be a Professor, Associate Professor, Senior Lecturer or Lecturer appointed by the Council upon the recommendation of the Vice-Chancellor. The Head of a Department shall hold office for a period of three years. Provided that, where the Head of a Department of Study has not been appointed by the Council, the Vice-Chancellor may appoint a Head of Department for a period not exceeding one month.

Head / Department of Botany

Mrs. U. Mathiventhan

BScHons(EUSL), MPhil(EUSL)

Head / Department of Chemistry

Dr. R. Joy Ebenezer

BScHons(EUSL), PhD (Aberdeen, UK)

Head / Department of Computing

Mr. S. Sotheeswaran
BScHons (UJA), MPhil (UJA)

Head / Department of Mathematics

Mrs. T. Pio Jude Navinthan
BScHons (EUSL), MPhil (PGIS, UPDN)

Head / Department of Physics

Dr. (Mrs.) Queenie Y. Soundararaja
BScHons (EUSL), M.Phil (UPDN), PhD (UOB, UK)

Head / Department of Zoology

Dr. (Mrs.) M. Vinobaba
BScHons (Jaffna) DPhil. (Sussex-UK)

Assistant Registrar/ Faculty of Science

Mrs.R.Archsana
BSc. Ag. Tech. Mgt. (UPDN), MBA (SJP - PIM) & ACMA (UK)

Assistant Bursar/ Faculty of Science

Ms. Thilini Madhusha Masachchi
HNDA, CBA, MAAT

2.3 Faculty Board of Science

Faculty board of Science, Eastern University, Sri Lanka is the academic authority of the Faculty of Science. The major functions of the Faculty Board are concerned with the overall regulations of teaching, course structure, examinations and research within the Faculty subject to the control of the Senate of the University. The Faculty Board is basically a support agency of the Senate and its academic role is very important as most of the

recommendations of the Senate are based on reports originating from the Faculty Board.

A Faculty Board headed by a Dean shall consist of the following persons: the professors, associate professors, senior lecturers, lecturers, two representatives among probationary lectures, two students' representatives and three external members appointed by the Faculty.

The Faculty Board

Ex-officio members

Snr. Prof. P. Vinobaba	Dean /Science
Dr. (Mrs.) M. Vinobaba	Head /Zoology
Mrs. U. Mathiventhan	Head /Botany
Dr. (Mrs.) Q. Y. Soundrararajah	Head /Physics
Mrs. T. Pio Jude Navinthan	Head/Mathematics
Dr. R.Joy Ebenezer	Head /Chemistry
Mr. S. Sotheeswaran	Head/Computing

Professors

Snr. Prof. S. Thirukkanesh
Snr. Prof. A. G. Johnpillai
Prof. F. C. Ragel
Prof. P. Peratheepan
Prof. M. Sithambaresan
Prof. S. Arasaretnam
Prof. (Mrs.) C. G. Devadason
Prof. T. Mathiventhan
Prof. P. R. Fernando

Associate Professors

Dr. (Mrs.) C. Mahendranathan

Senior Lecturers

Dr. S. Sathananthan
Mr. G. Parthiban
Dr. P. Elango
Mr. P. Paramathevan
Dr. (Mrs) S. Sathaananthan
Mrs. U. Mathiventhan

Mrs. J. Sriranganesan Mr. K. A. N. K. Karunarathna
Dr. A. J. M. Harris
Mrs. S. Thavareesan
Dr. B. S. W. Karunarathna
Dr. R. M. T. B. Ranathunge

Lecturers (Probationary)
Ms. H.G.D.P.Ubeysekra
Mr. S. Thanusanth

Student Representatives
Mr. W.M.IP.Wijesundara
Ms. J.A.D.N.R.Pramodani

Appointed Members
Mr. V. Panchalingam
Mr. Rukshan Calistus Cross
Mr. S.Jeyakumar

Secretary to the Board
Mrs.R.Archsana

2.4 Chairperson/ Curriculum Development Committee

Prof. P. Peratheepan

2.5 Chairperson/ Research and Development Committee

Prof. P. Peratheepan

2.6 Chairperson/ Board of Study of Sciences

Snr. Prof. S. Thirukkanesh

2.7 Chairpeson/ Borad of Study of Science (CEDEC)

Dr. (Mrs) S. Sathaananthan

2.8 Coordinators of Faculty of Science

Prof. M. Sithambaraesan: Faculty Quality Assurance Cell; and Motivation for self development and adaptability (CPD 100) course

Prof. S. Arasaretnam: Postgraduate Degree (by Research), and Career Skills and Professionalism (SP2051) course
Mr. P. Paramathevan: MSc. in Science Education, Senior Treasurer
Mr. G. Parthiban: MSc. in Environmental Science
Dr. P. Elango: Community Outreach Science Unit
Mrs. J. Sriranganesan: Diploma in Laboratory Technology
Dr (Mrs) S. Sathananthan: External Degree Programme
Mr. S. Sotheeswaran: Faculty Coordinator for Faculty Website
Prof. P. R. Fernando: Gender Equity and Equality
Dr (Mrs) S. Sathananthan: Supplimentary Courses
Dr. (Mrs) B. S. W. Karunarathna: Ethnic Cohesion and Social Harmony (SLV100), and Management Information System (MIS)
Mrs. S. Thavareesan: Enhancement Courses and Language Courses
Mr. T. Vinothraj: Career Guidance Advisor

2.7 Programmes of Study

2.7.1 Internal Degree Programme

The Faculty of Science conducts courses leading to BSc Degree and BSc Honours Degree in Physical and Biological Science streams. The semester system has been implemented in the Faculty since year 2000 and the evaluation has been based on the Grade Point Average (GPA). The present outcome based curriculum focuses on molding wholesome graduates, which is portrayed by the Graduate Profile of the Faculty. English continues to be the medium of instruction in the Faculty since the inception in 1981.

The Faculty of Science, Eastern University, Sri Lanka, is making a unified attempt to improve the quality and relevance of study programmes with continuous engagement with stakeholders.

2.7.2 Postgraduate Degree Programme

The following postgraduate degree programmes are offered by the Faculty of Graduate Studies. The Board of Study of Sciences offers taught masters degrees with research component: MSc in Science Education and MSc in Environmental Science, for which application are invited by open advertisements.

The Board of Study of Sciences also offers research degree programmes: Degree of Master of Philosophy (MPhil) and Doctor of Philosophy (PhD). The fields of study in which students will be registered for these programmes depend on the availability of supervision and facilities in the particular field; details are available in the faculty web site as well as in the Prospectors for Research Degrees.

2.7.3 Extension Programmes

Diploma in Laboratory Technology

Faculty conducts a diploma programme in Laboratory Technology through Center for External Degree and Extension Courses (CEDEC) which of 18 months duration. Applications are invited by open advertisements.

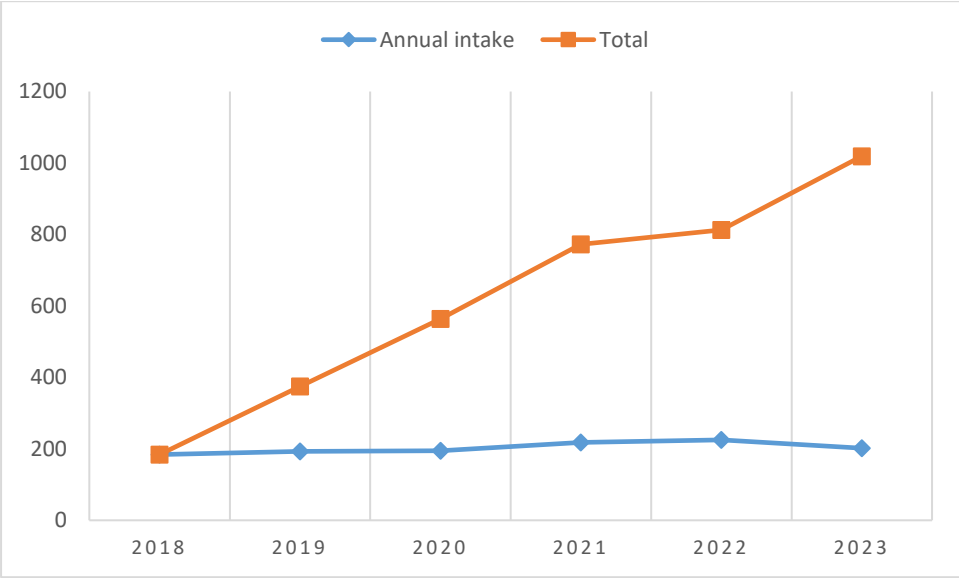
2.8 Academic Staff Strength

The following chart exhibits the strength of academic staff of the Faculty.

Academic Strength-Highest Qualification (2024)							
Status	**Department**						**Total**
Qualification	**Botany**	**Chemistry**	**Computing**	**Mathematics**	**Physics**	**Zoology**	
PhD	3	5	-	4	4	5	**21**
MPhil	1	1	2	4	-	1	**9**
MSc	2	-	2	1	-	-	**5**
BSc	1	1	-	-	3	1	**6**
Grade							
Senior Professor	-	-	-	2	-	1	**3**
Professor	1	2	-	-	3	1	**7**
Associate Professor	1	-	-	-	1	-	**2**
Senior Lecturer Gr(I)	2	1	1	5	-	1	**10**
Senior Lecturer Gr(II)	-	1	1	1	-	3	**06**
Lecturer (Prob)	3	1	2	1	3	1	**11**

2.9 Student Population

The following chart exhibits the growth of student population during few years.



There has been a steady rise in student population after the war situation ended and has reached a saturation due to limited infrastructure, resources and staff cadre.

2.10 Faculty Journal

The Faculty of Science publishes Journal of Science (JSc) twice a year with open access policy (https://jsc.sljol.info/) and uniquely addresses the regional and national interest in a broad spectrum of pure and applied sciences. JSc is indexed by CrossRef and Google Scholar and JSc is available for harvesting via OAI-PMH and LOCKSS to create a distributed archiving system among participating libraries and permits to create permanent archives of the journal for purpose of preservation and restoration. The present Editor-in-Chief is **Dr. M. Koneswaran**.

2.11 Community Outreach Science Unit (COSU)

Community Outreach Science Unit (COSU) of the Faculty of Science extends its educational services to the community.

2.12 Newsletter

The Faculty of Science News (FOSnews) publishes a newsletter in every six months. The present Editor is **Dr. J. M. Harris**.

2.13 Students' Magazine

The Faculty student union publishes annually a student magazine named as Blossom. The articles by the students decorate this magazine. The present Senior Treasurer is **Mr. P. Paramathevan**.

3 Undergraduate Programmes

3.1 Introduction

The Faculty of Science conducts courses under a semester-based course unit system in English medium. An academic year is divided into two semesters, identified as the first semester and the second semester of a particular academic year such that each semester is of 15 weeks of academic activities.

The present curriculum under the semester system retains the strong commitment to interdisciplinary study and offers students more flexibility.

The Faculty offers the following degree programmes:

- Bachelor of Science - BSc
- Bachelor of Science Honours in Botany - BScHons(Bot)
- Bachelor of Science Honours in Chemistry - BScHons(Chem)
- Bachelor of Science Honours in Computer Science- BScHons(CS)
- Bachelor of Science Honours in Mathematics -BScHons(Maths)
- Bachelor of Science Honours in Physics - BScHons(Phys)
- Bachelor of Science Honours in Zoology - BScHons(Zoo)

The Degree of Bachelor of Science programme is of three academic years duration and a student should have obtained a minimum of 90 credits for the award, and the Degree of Bachelor of Science Honours programmes are of four academic years duration and a student should have obtained a minimum of 120 credits for the award. The study progression is by offering *Course Units* sequenced in 100, 200, 300 and 400 *Levels*.

The Faculty adopts an Outcome Based Education where programme outcomes are clearly aligned with the course Intended Learning Outcomes (ILOs); and the teaching-learning activities and assessment strategies are aligned with the learning outcomes of each course (constructive alignment).

3.2 Programme Outcomes aligned to Graduate Profile

The Curriculum of the undergraduate study programmes are constructively aligned with the graduate profile.

Bachelor of Science Degree Programme

The purpose of this qualification is to prepare a graduate with a broad knowledge on theory, practice and methodology of at least two principal subjects of science that enable them to bear responsibility in an academic or professional environment.

Alignment of BSc degree programme with the graduate profile:

Desired Graduate attributes			Intended Programme Outcomes
1	**Competent in discipline knowledge & practice**	**Knowledge**	[1] Acquire a background in the basics of an array of relevant disciplines, and demonstrate in-depth knowledge and understanding of well-established theories, principles and concepts in at least two selected disciplines of physical or biological sciences. [2] Develop arguments and make sound judgments in accordance with basic theories and concepts in the discipline. [3] Collect, Analyse and interpret quantitative and qualitative data. [4] Use practical skills and enquiry, and use established techniques to undertake experimentation, analyze data, interpret results and propose solutions/ conclusions.
2	**Analytical, Solution seeking & creative**	**Skills**	[5] Apply knowledge and understanding of concepts and principles of the subject area. [6] Develop arguments and make appropriate judgments in accordance with theories and concepts of the areas of study.
3	**Effectively communicate**		[7] Present information, ideas, and concepts efficiently and effectively.

	& engage, ICT literate	**Attitude, Values**	[8] Establish a rapport and build collaborative relationships with individuals and groups. [9] Demonstrate specialized transferable skills related to ICT.
4	**Adoptable, Independent, Sincere**		[10] Develop appropriate strategies for adapting to changing environments. [11] Exercise initiative, adoptability and accountability. [12] Exercise personal/team responsibility, and leadership in the professional environment/work place. [13] Demonstrate independence in learning and decision making, be principled and confident in activities.
5	**Visionary, Responsible (socially & environm-entally)**	**Mind-set, Paradigm**	[14] Clearly identify where one wants to be and develop long term goals accordingly. [15] Acquire new competencies that will enable assume major responsibilities towards the goals. [16] Show an apprehension for societal and environmental concerns and work towards betterment. [17] Respect for diversity of communities with different cultural, social and religious backgrounds. [18] Empathy towards others and Philanthropy.

Bachelor of Science Honours Degree Programmes

Purpose of this qualification is to provide an in-depth knowledge in a particular Principal subject in order to equip graduates with knowledge, practice and methodology that prepare them for research based

postgraduate studies or professional development in that discipline. This qualification demands a high level of theoretical/practical engagement and intellectual independence.

Alignment of BScHons degree programmes with the graduate profile:

Desired Graduate attributes			Intended Programme Outcomes
1	**Competent in discipline knowledge & practice**	**Knowledge**	[1] Acquire a background in the basics of an array of relevant disciplines, and demonstrate in-depth advanced knowledge and understanding of core aspects of a selected discipline of physical or biological sciences with another discipline as subsidiary. [2] Construct and sustain arguments and use these arguments, ideas and techniques in problem solving. [3] Critically Analyze data, make judgments and propose solutions to problems. [4] Use practical skills and enquiry efficiently and effectively, and use a range of established techniques to initiate and undertake experimentation, analysis of data, interpret results and propose solutions/conclusions.
2	**Analytical, Solution seeking & creative**		[5] Apply knowledge and understanding of concepts and principles of the subject area. [6] Construct and sustain arguments and use these arguments, ideas and techniques in problem solving for a given situation. [7] Engage in independent learning using scholarly reviews and secondary sources of information to research on a selected problem.
3		**Skills**	[8] Receive and interpret information, Communicate/present information, ideas, issues and solutions effectively in a range of media and formats.

	Effectively communicate & engage	**Attitude**	[9] Demonstrate awareness of the current developments in the field of specialization. [10] Thorough in transferable skills related to ICT and information literacy.
			[11] Establish a rapport and build collaborative relationships with individuals and groups.
4	**Adoptable, Independent, sincere & visionary**		[12] Analyse and devise appropriate strategies for adapting to changing environments. [13] Exercise initiative, adoptability and accountability. [14] Exercise personal/team responsibility, and leadership in the professional environment/ work place. [15] Demonstrate independence in learning and decision making, be principled and confident in activities. [16] Clearly identify where one wants to be and develop long term goals accordingly. [17] Exercise and further develop the new competencies and assume major responsibilities with confidence towards the goals.
5	**Responsible socially & environmentally**	**Mind-Set**	[18] Demonstrate positive attitudes and social responsibility. [19] Show an apprehension for societal and environmental concerns and work towards betterment. [20] Respect for diversity of communities with different cultural, social and religious backgrounds. [21] Empathy towards others and Philanthropy.

3.3 Credit Value

The volume of learning is described in terms of *credits*. The student workload of a study programme is about 1500 notional learning hours per academic year. The notional learning hours include direct contact hours with teachers and trainers, time spent in self-learning, preparation for assignments, carrying out assignments and assessments.

A. One credit of taught course, laboratory studies or field studies is equivalent to 50 notional learning hours.
   - ✓ 15 hours of lectures and 35 hours of independent learning and assessments; **or**
   - ✓ 30-45 hours of laboratory work or 45 hours of field work with additional time for independent learning and assessments; **or**
   - ✓ A blend of 50 notional learning hours of lecture, practical (and / or field work), independent learning and assessments.

B. One credit of industrial training (including time allocated for assessments) or research (including time allocated for literature survey) is considered equivalent to a minimum of 100 notional hours.

Credits have to be earned by students after successful completion of the work required and appropriate assessment of learning outcomes.

3.4 Course Units

A Course Unit is a selectively organized section of academic activity that may comprise either theory or practical, or a blend of both (50 notional hours per credit). There are a few course units that comprise research or industrial training/internship / group project activity (100 notional hrs per credit) in the programmes. Content, teaching learning strategies and assessment of a course unit are carefully structured to facilitate the achievement of intended learning outcomes (ILOs) of a course unit, and course units are assessed on the basis of the students' attainment of ILOs.

Codes for Course Units: An alphanumeric code is used to identify a course unit. The first two alphabets identify the course from a Principal Subject Area (Table 1) or as *Enhancement / Supplementary* course. The first three numeric

numbers designate the sequence of courses offered at 100, 200, 300 and 400 levels of progression. The 4th digit denotes the number of credit weight of that course unit.

Examples:

- CH2031 is a 1 credit course unit in Chemistry Principal Subject with number series 203 (i.e. offered at 200 series level).
- MT3072 is a 2 credit course unit in Mathematics Principal Subject with number series 307 (i.e. offered at 300 series level).
- EN1042 is a 2 credit *Enhancement* course unit with number series 104 (i.e. offered at 100 series level).
- SP2031 is a 1 credit *Supplementary* course unit with number series 203 (i.e. offered at 200 series level).

The *Auxiliary* courses are not assigned credit values and are basic level courses at 100, 200 and 300 levels, and hence assigned unique codes (see Table 3) for courses of three categories: English (ENG) language, Career and Personality Development (CPD) and Sri Lankan Values (SLV).

The study BSc and BScHons degree programmes are carefully designed by sequencing course units and the core of the curricula of these study programmes are through courses from Principal Subject Area, and the remaining course units are covered from *Auxiliary*, *Enhancement* (EN) and *Supplementary* (SP) courses. The *Auxiliary* and *Enhancement* courses are compulsory for all students and *Supplementary* courses are elective.

3.5 Principal Subject Area

The core of the curriculum emanates from the Principal Subject Area. The choice of Principal Subjects depends on the Stream of Study, namely Biological Science or Physical Science. The Faculty, at present, offers courses in six Principal Subjects. The Principal Subjects offered and the Letter Codes assigned to them together with the responsible academic department are given in Table 1.

At the beginning of the first year students are expected to choose **one** of the following Principal Subject combinations for the study, and the scope for specialization for a particular combination is also highlighted in Table 2.

Table 1: Principal Subjects designated by codes and identifying the department offering the subject

Principal Subject	**Prefix**	**Offered by**
Botany	BT	Department of Botany
Chemistry	CH	Department of Chemistry
Computer Science	CS	Department of Computing
Mathematics-I	MT	Department of Mathematics
Mathematics-II		
Physics	PH	Department of Physics
Zoology	ZL	Department of Zoology

Table 2: Principal Subject combinations a student may select at the first year of study and the scope for BScHons Degree(s) for that particular combination

Combination Code	**Combination of Principal Subjects**	**Scope for BScHons Degrees**
Physical Science Stream		
PS1	Chemistry, Mathematics-I, Physics	Chemistry, Physics
PS2	Mathematics-I, Mathematics-II, Chemistry	Mathematics, Chemistry
PS3	Mathematics-I, Mathematics-II, Computer Sc.	Mathematics, Computer Sc.
PS4	Mathematics-I, Mathematics-II, Physics	Mathematics, Physics
PS5	Mathematics -I, Physics, Computer Sc.	Physics, Computer Sc.
PS6	Mathematics-I, Computer Sc., Chemistry	Computer Sc., Chemistry
Biological Science Stream		
BS1	Botany, Zoology, Chemistry	Botany, Zoology, Chemistry

Note1: To claim a Principal Subject for BSc degree, a student should have offered minimum of 8 credits from each Level.
Note 2: A Student is required to select his/her Principal Subject combinations during the orientation. Any change of subject combination should be made within 2 weeks from the commencement of the academic programme.
Note 3: If the number of students that can be accommodated for a particular course/subject has to be limited due to lack of resources, then students for that course/subject will be selected by an appropriate selection procedure decided by the department/faculty.
Students can seek the assistance of the academic counselors and advisors who will help them to select appropriate subject combination.
For each Principal Subject, there is a comprehensive document named *Programme Specification* published for each academic department which specifies:

- *Subject Benchmark Statements* associated with BSc and BScHons degree programmes that are aligned with graduate profile and Sri Lanka Qualification Framework (SLQF);
- Course Specification (Lesson Plan) of each course unit consist of intended learning outcomes (ILOs) for the course, course contents, teaching-learning methods, assessment methods and recommended readings.

Copies of the above documents are available in the library for reference.
In addition to the course units from Principal Subject area, a student is required to offer compulsory *Auxiliary* and *Enhancement* (EN) courses as explained in sections 3.5.1 and 3.5.2 Moreover, from 2nd year onwards a student may offer *Supplementary* courses that are elective as outlined in section 3.5.3.

3.5.1 *Auxiliary* Courses

Auxiliary courses are designed to provide (i) a Basic *English* (ENG) language proficiency aligned with University Tests of English Language (UTEL); (ii) induce a sensitiveness to *Sri Lankan Values* (SLV), and (iii) mould a socially responsible graduate through a series of courses on *Career and Personality Development* (CPD).

The *Auxiliary* course units are compulsory, but not taken for the computation of Grade Point Average (GPA); however shall be evaluated and appear in academic transcript, and be partial requisite for the award of degrees (see Table 7 and sections 4.5.2(ii) and 4.5.3(ii)). Generally CPD & SLV courses will be conducted throughout the academic year, mostly outside the usual time-table hours, and continuous assessments would mainly contribute to the final grades. The *Auxiliary* course units offered and the Letter Codes assigned to them are given in Table 3.

Table 3: *Auxiliary* course units that are offered at 100, 200 and 300 levels.

Course Code	Course Titles	Course outlook
100 Level		
ENG100	English Level-I	Can handle common academic situations. Understands main ideas in moderately complex texts. Can write structured paragraphs and participate in discussions with some errors.
CPD100€	Motivation for self development and adaptability	Orient fresh undergraduates to adapt to university life through a series of interactive lectures and counselling sessions, guided visits and engagement; facilitate self-reflection and setting vision for life and career goals towards lifelong learning; motivate qualities such as resilience, flexibility and co-operation; encourage and facilitate engagement in yoga/meditation/ aerobatics/ sports/ aesthetics.
SLV100€	Ethnic Cohesion and Social Harmony	Provide basic language skills in Sinhala♦ or Tamil♠ to each undergraduate through teacher centred teaching-learning activities as well as facilitating peer learning through multi-ethnic group activity motivating cohesion, harmony, respect for diversity of communities with different cultural, social and religious backgrounds. Documentation

Course Code	Course Titles	Course outlook
		of experiences and reflections via e-portfolio†
200 Level		
ENG200	English Level-II	Competent English user. Able to understand academic lectures and texts, write essays, and communicate clearly. Errors may occur, but meaning is generally clear.
SLV200 (S/T)	Basic Sinhala♦/ Tamil♠	Acquire basic knowledge in Sinhala/ Tamil language for students whose mother toungue is Tamil/ Sinhala.
300 Level		
ENG300	English Level-III	High level of proficiency. Can express ideas fluently in academic speech and writing. Handles complex material with confidence and produces coherent, well-organized content.
ENG400£	Academic English for Science	Near-native proficiency. Demonstrates complete fluency, accuracy, and sophistication in academic English. Capable of teaching, writing scholarly articles, and participating in high-level academic discourse.

♦ For students who had their school education in Tamil medium

♠ For students who had their school education in Sinhala medium

€ In case a student fails the course, student has to follow the course again in order to pass the course.

£ Compulsory for BScHons and optional for BSc degree programs.

3.5.2 *Enhancement* Courses

Enhancement course units are compulsory that are required for progression and career, are given in Table 4 together with the Letter Codes, which contributes for GPA computation.

Table 4: *Enhancement* course units that are offered at 100, 200 and 300 levels

Course Code	Course Titles	Hours♣ (L/P/ IL)	Credits
100 Level			
EN1011	Basic Mathematics♥	15/0/35	1
EN1021	Basic Statistics♥	15/0/35	1
EN1032	Basic Biology$	15/30/55	2
EN1042	Introduction to Computing-I	15/30/55	2
EN1052	Introduction to Computing-II	15/30/55	2
200 Level			
EN2013	Visual Application Development	30/30/90	3

♥For those who have not offered Mathematics as a subject at GCE(A/L) Examination

$For those who have not offered Biology as a subject at GCE(A/L) Examination

♣Hours are distinguished as (Lecture/Practical/Independent learning) that also cover time taken for assessments

3.5.3 *Supplementary* Courses

Supplementary course units are offered as electives in disciplines within and outside the faculty. However, students are allowed **not more than 12** credits from these *Supplementary* course units.

Table 5: *Supplementary* course units that are offered at 200 and 300 Levels

Course Code	Course Titles	Hours♣ (L/P/IL)	Credits
200 Level			
SP2012	Principles of Management	30/00/70	2
SP2022	Fundamentals of Economics	30/00/70	2

Course Code	Course Titles	Hours♣ (L/P/IL)	Credits
SP2032	Financial Accounting	30/00/70	2
SP2042	Community Outreach: Scientific Engagement@	200	2
SP2051	Career Prospects and personality development%	15/00/35	1
300 Level			
SP3011	Entrepreneurship skills Development	15/00/35	1
SP3023	Object-Oriented Analysis and Design	30/30/90	3
SP3032	Science Education	25/10/65	2
SP3042	Science of Consciousness and Spirituality	15/30/55	2
SP3052	Data Analysis and Report Writing	00/60/40	2
SP3061	Career Skills & Professionalism♦	15/00/35	1
SP3071	Science of Indigenous Knowledge and Practices♠	100	1
SP3082	Resource Efficiency and Cleaner Production	30/0/70	2

♣Hours are distinguished as (Lecture/Practical/Independent learning) that cover time taken for assessments

Supplementary course units shall be offered if there is minimum of ten students at the time of subject registration.

♠Sri Lankan Value (SLV) courses

♦ Career and Personality Development (CPD) courses

For course units offered outside Principal Subject area, a document named "*Course Specification for Auxiliary, Enhancement and Supplementary* Course Units" is published for the Faculty and available in the library for reference.

3.5.4 Prerequisites

The subject matter in a course unit at a lower level is sometimes essential to follow a course unit at a higher level. The course unit at the lower level so needed is called a prerequisite of the course unit at higher level.

3.5.5 Flexibility

Levels shall not be tied rigidly to the corresponding **year of study.** If the exigencies of a particular student's circumstances require, his/her time table permits, and provided that his/her programme can be completed within the allotted time limit, there shall be no objection to, for instance, a third year student taking 200 Level courses (courses of only levels below the current level are allowed to be taken, except for some 400 level courses that are offered for BScHons students at 3rd year). Moreover, BSc students has an exception to offer ENG400 as an optional course in 3rd year of study.
A student who has accumulated more credits than necessary for GPA calculation (i.e. more than 90 for BSc degree or 120 credits for BScHons degree), he/she may claim which **non-compulsory courses** to be considered for GPA calculation. However, all courses registered will appear in the transcript with grades.

3.5.6 Registration for Course Units

Registration for course units for the **entire academic year** commences **one** week prior to the start of the first semester, and continues during the first two week of the particular academic year. Students only have registered are allowed to sit for examinations of that course unit, and should registers using the appropriate form on or before a date specified by Office of the Dean, and he/she can offer only these course units to earn credit. In **each academic year**, a student **must** register for course units (excluding auxiliary) not less than 30 and not more than 32 credits, excluding course units which are being repeated. However, for the award of BSc, a student should have obtained minimum of 30 credits (excluding auxiliary courses) from each 100, 200 and 300 levels. In case of the award of BScHons a student should have obtained minimum of 30 credits (excluding auxiliary courses) from each 100, 200 levels and minimum of 20 credits from 300 Level and minimum of 40 credits from 400 level.
Selection of course units must be done very carefully as students will not be permitted to change their selections once the registration period is over. Students can obtain guidance from Academic Advisors to select course units judiciously.

Elective (optional) course units in **principle subjects** having less than five students may not be conducted (applicable only for BSc degree programme and students who have registered for such course units are permitted to register for other available course units during the registration period.
If the number of students for a particular course unit exceeds the available capacity, students will be chosen on a selection procedure specified by the respective department. All information regarding above is made available at the Office of the Dean and the students are requested to contact the Assistant Registrar of the Faculty for further information.

3.6 Academic Progression

The study progression is through a series of Levels. The BSc Degree Programme consists of three academic years, progression through courses from 100, 200 and 300 Levels; and the Honours Degree Programme consists of four academic years, progression through courses from 100, 200, 300 and 400 levels. The Faculty will notify the commencement of the academic year with the approval of the Faculty Board. An academic year consists of two semesters having 15 weeks of teaching-learning sessions.
The Orientation Programme for new students consists of intensive courses in "English" and "IT" in addition to various activities to orient students to the degree programme and University life. The aim of the two intensive courses is to bring all students to a common level in English and IT knowledge so that the students are prepared to follow courses when the academic programme starts.

3.6.1 BSc Degree

1st Year – A student shall select one combination from the Table 2 in section 3.5, offering 8 credits from each Principal Subject at 100 Level courses. In addition, students shall offer compulsory *Auxiliary* (non-credit) and *Enhancement* courses (see Table 3 in section 3.5.1 and Table 4 in section 3.5.2).
2nd Year – Students shall continue with the at least TWO *Principal* Subjects of the combination offered at 1st year, offering minimum of 8 credits from each *Principal* Subject at 200 Level courses; the remaining credits requirement shall be covered through compulsory *Enhancement* courses and selecting courses from ANY *Principal* Subjects at 200 Level (provided prerequisites are met and time-table permits) and/or from *Supplementary* courses at 200 Level.

3rd Year – The general degree students shall continue with at least TWO *Principal* Subjects offered at the 2nd year offering minimum of 8 credits from each *Principal* Subject at 300 Level courses; the remaining credit requirements shall be covered through compulsory *Enhancement* courses and selecting courses from ANY *Principal* Subjects (provided prerequisites are met and time-table permits) or from *Supplementary* courses.

Note: Not more than 12 credits are allowed from the *Supplementary* courses for the award of BSc degree.

3.6.2 BScHons Degree

Upon application at the end of 2nd year, students will be selected to follow an Honours Degree in a Principal Subject as stated in section 3.5.

Students who opt for specialization at the 3rd year of study must continue with two principal subjects offered in the 2nd year (one of which is the subject of specialization) and additionally should offer minimum of 10 credits from 400 level courses of the subject of specialization. At the end of the 4th year of study, student should have completed minimum of 40 credits including research project from 400 level courses of the subject of specialization.

To obtain an Honours Degree in the particular principal subject, students should have offered a minimum of 120 credits for GPA computation, out of which at least **72 credits must be from the subject of specialization** (88 credits in case of Mathematics); and out of which 40 must be from 400 level courses of specialization.

Each department will offer courses as per to the available resources and would specify the courses the department would offer for the program. Moreover, each Department of study will decide on the number of students to be enrolled in the Honours Degree Programme depending on its requirements and available facilities.

Note: Students who intend to follow Honours degree are advised to obtain at least 12 credits level (including all course units compulsory for the subject of specialization) at 200 level from the principal subject intended to specialise, so that their credits will add up to at least 12 per year at 200 and 300 levels from the subject of specialization.

3.6.2.1 Selection for BScHons Degree

Upon application at the end of 2nd year, students will be selected to follow a BScHons degree in a Principal Subject as outlined in Table 2 in section 3.5.

To apply for an Honours Degree programme, the following requirements must be fulfilled at the time of application:

I. Obtained at least an overall GPA (see section 4.2) of 2.00 at each 100 level and 200 level.
II. Obtained at least a GPA of 2.70 in all course units compulsory for the subject of specialization at 100 and 200 levels (denoted by symbols "✓" in Principal Subject table for Honours Degree).
III. Obtained at least B grades aggregating to 8 credits in the subject of specialization (16 credits in case of Mathematics) at 100 and 200 levels;
IV. Obtained "D" or better grades for all course units compulsory for the subject of specialization at 100 and 200 levels (denoted by symbols "✓" in Principal Subject table for Honours Degree).

3.6.2.2 Option to Revert to BSc Degree from BSc Honours Degree

A student reading for a BSc Honours Degree may request in writing for the award of the BSc Degree, upon satisfying the requirements for the award of the BSc Degree. This request should be made to the Dean of the Faculty through the relavent Head of the Department after completing 3rd year of study or during 4th year of study or within 2 weeks of the release of the Final 4th year examination results.

In order to fulfill the requirements for BSc degree, the required 400 level courses shall be considered for 300 level courses with 300 level course weightage for Overall Weighted GPA calculation.

3.6 Curriculum Map

The curriculum map is given below.

Courses in the Curriculum	Graduate Profile				
	GA1	GA2	GA3	GA4	GA5
	Competent in discipline knowledge & practice	Analytical, Solution seeking, creative	Effectively communicate & engage, ICT literate	Adoptable, Independent, sincere	Visionary, Responsible (socially, environmentally)
	Knowledge	Skills		Attitude	Mind-Set
Principal Subject Area (BT, CH, CS, MT, PH, ZL)	H	H / M	M / L	L	L
ENG100, ENG200,			M		
ENG300, ENG400			H		
CPD100, SP2051♦				H	H
SLV100, SLV200(S/T)			H	M	H
EN1011, EN1021, EN1032	H	M			
EN1042, EN1052, EN2013, SP3023	M		H		
SP2012, SP2022, SP2032, SP3042	H				
SP2042♠	M	H		M	H
SP3011, SP3032 SP3052	M	M			M
SP3061	L			M	H
SP3071♦	M	H			M
SP3082	M	L			H

♠Sri Lankan Value (SLV) courses

♦ Career and Personality Development (CPD) courses

The table above provides an overview of the mapping of the curricula of the degree programmes to the Graduate Profile of the Faculty; notations H, M and L provides a rough measure of contributions of the Course Units to the graduate attributes as High, Medium and Low, respectively.

3.8 Curriculum Matrix

Curriculum Matrix – BSc & BScHons												
Degree & Year	**Level of offered Courses**		**Principal Subjects**			**Compulsory Auxiliary Courses***	**Compulsory Enhancement course**		**Supplementary course**		**Total Credits for the Award**
			X	**Y**	**Z**						
BSc(Gen) 1st Year	100		8 C	8 C	8 C	ENG 100 CPD 100 SLV 100	(EN 1011, EN 1021)/ EN 1022	2 C	-		(24P+6EN) C
							EN 1032	2 C			
							EN 1042	2 C			
BSc(Gen) 2nd Year	200	Op-I	≥ 8 C	≥ 8 C	≥ 8 C	ENG200 SLV(S/T) 200	EN2013	3 C	SP 2012 SP 2022 SP 2032 SP 2042 SP 2051	2 C 2C 2 C 2 C 1 C	(≥24P + 3EN) + ≤3(P†+SP)C
		Op-II	≥ 8 C	≥ 8 C	< 8 C						(≥16P +3EN) C + ≤11(P†+SP)C
BSc(Gen) 3rd Year	300	Op-IA	≥8 C	≥ 8 C	≥ 8 C	ENG300		2 C	SP 3011 SP 3023 SP 3042 SP 3052 SP 3061 SP 3071 SP 3082	1 C 3 C 2 C 2 C 1 C 1 C 2 C	(≥24PC + ≤4(P†+SP) C
		OP-1B	≥8 C	≥8 C	< 8 C						(≥16P) C + ≤12(P†+SP)C
		Op-II	≥8 C	≥8 C	< 8 C						
BScHons (X) 3rd Year	300		≥ 8 C	≥8 C	< 8 C						Accumulated credits from 100, 200 & 300 levels: [≥42P(X) + ≥16P(Y) + ≥8P(Z) + 9EN]C + ≤13(P†+SP)C
	400		10 C	-	-						
BScHons (Math) 3rd Year			M-I	M-II							
	300		≥ 8 C	≥ 8 C	< 8 C						
	400		10 C								
BScHons 4th Year	400		30 C	-	-	ENG400 -	-				30P(X) C
Op-IA			**≥ 24**	**≥ 24**	**≥ 24**						(≥72P+9EN)C+ ≤7((P†+SP)C

BSc(General) with THREE Subjects	THREE Principal Subjects X, Y & Z			Pass (S) in ENG100, ENG 200 and Pass (S) in SLV100, CPD100 and SLV200(S/T)	9 C	≤ 12 C	Min 90 credits, OGPA 2.00 with no E grade.
BSc(General) with TWO Subjects	OP-IB OP-II	**≥ 24**	**≥ 24**	< 24			(≥48P+11EN)C+ ≤31((P†+SP)C
	TWO Principal Subjects X & Y						Min 90 credits, OGPA 2.00 with no E grade.
BScHons(X)		**≥ 72**	≥ 16				Min 120 credits (min 96P†) OGPA 2.00; grades C or better in 96 credits no E grades.
BScHons(Math)		**≥ 88**					

P – Course Units from Principal Subjects X, Y, Z

P† - Course Units from any Principal Subject, provided prerequisites are met and time-table permits

4 Evaluation Systems

Evaluation consists of continuous assessments and end semester assessments.

I. Continuous assessment usually account for 20 - 40% of the total grade. Continuous assessments may consist of mid-semester examinations, quizzes given in class, take-home assignments such as papers or problem sets, in-class presentations by students, projects, etc.

   All continuous assessments conducted shall be taken into computation, but the weight for different types of assessment (i.e. not equal weight for assignment, quizzes, open book exam, spot test, etc.) shall be decided by the Lecturer in-charge and expected to be announced to the students at the beginning of the course.

II. Except in the case of research projects, seminars, field work, practicals, *Auxiliary* courses, etc., the end semester assessment shall take the conventional form of a final examination at the end of semester, which may be closed book and shall account for 60 - 80% of the total grade. The duration of the final theory examination may vary according to the credit value of the course, as follows:

   1 Credit: 1 to 1 ½ hours
   2 Credits: 2 to 2 ½ hours
   3-4 Credits: 3 hours.

Allocated percentage marks for sub-questions of each question of an end semester examination shall be specified (denoted) in the question paper.

Assessments are carefully structured to ascertain students' attainment of intended learning outcomes (ILOs) of a course unit, and the teaching-learning strategies are to facilitate students' attainment of ILOs of the course unit. The percentage weight given for continuous and end semester assessments may vary, and depends on the nature of ILOs of the Course Unit, and the definite percentage weight is stated in the Course Specification (Lesson Plan).

In case of blended course, the calculation for grading will be done based on the credit weightage given for each component.

4.1 Grade and Grade Point

Based on the scheme of evaluation mentioned above, the total marks scored (continuous plus end semester) by the student for a course unit (or theory/practical component of a course unit) will be graded based on the distribution of marks in the class ('grading on a curve') for which the scheme is approved by the Faculty Board of Science. Accordingly, Letter grades of **A**, **B**, **C**, **D** (qualified as **+** or **-**) and **E**, are awarded for each course unit, and for purposes of computing Grade Point Average (GPA), each grade shall correspond to a particular Grade Point Value as in the following table, in accordance to the University Grant Commission (UGC) Circular No. 901:

Table 6: Grades and Grade Point Values together with attainment descriptors

Grade	Grade Point Value	Attainment descriptor
A+	4.00	Excellent
A	4.00	
A-	3.70	
B+	3.30	Meritorious
B	3.00	
B-	2.70	
C+	2.30	Satisfactory
C	2.00	
C-	1.70	
D+	1.30	Unsatisfactory
D	1.00	
E	0.00	Failure

To earn a *credit* or a *Grade Point* for a course unit (excluding *Auxiliary* courses), the student should obtain at least D grade for that course unit, and E is a failed grade.

4.2 Assignment of Grades, Grade Point and Grade Point Average (GPA)

The grades submitted for a course unit by the examiner(s) (i.e. graded as per to the scheme stated in section 4.1) will be reviewed by a committee constituted by the faculty for that course unit, and shall finalize the results of that course unit. The Head of the Department will submit the grades obtained by the students for the course unit under his purview to the Office of the Dean.

The Grade Point Average (GPA) of each student for the j^{th} Level of study, G_j , is the credit-weighted arithmetic mean of the Grade Point values which is computed as,

$$G_j = \frac{\sum_i c_i g_i}{\sum_i c_i} \; ; j = 100, 200, 300, 400;$$

where c_i is number of credits for the i^{th} course and g_i is the grade point value for the i^{th} course.

The overall weighted GPA, $\overline{G}$ for BSc degree will be computed as

$$\overline{G} = \frac{G_{100} + G_{200} + 2\,G_{300}}{4}$$

where $G_{100}, G_{200}, G_{300}$ are the *GPA* for 100, 200 and 300 levels respectively.

The overall weighted *GPA,* $\overline{G}$ for the BScHons degree, will be computed as

$$\overline{G} = \frac{G_{100} + G_{200} + 2G_{300} + 3G_{400}}{7}$$

where G_{400} is the GPA of all 400 level course units offered in third and fourth years of study. The final GPA for the awards shall be computed to the second decimal place.

The *Auxiliary* courses will not be considered for GPA calculation, and be assigned with three grades: Meritorious (M), Satisfactory (S) or Fail (F).

4.3 Transitional Symbols

I. **Symbol W:** Withdrawal from a course unit within the first two weeks of **registration** is allowed provided that the minimum credit requirement is not violated. Withdrawals after this period cannot be made, except on medical grounds or other valid reasons acceptable to the Faculty Boards and Senate; these courses will be assigned a grade **W**. Failure to complete a course unit, which has not been recorded as a withdrawal, the grade for that course unit shall be computed with the available continuous assessment marks.

II. **Symbol I:** Incomplete "I" shall be given for a student who has sufficiently covered the course, but not completed:

a) If "I" was given due to being absent for an end semester examination and the reason for the absence being acceptable by the Faculty Board and Senate, then he/she shall sit the next available examination as a proper candidate (in case of a repeat candidate, he/she shall retain the lost attempt), and a new grade will be assigned upon evaluation, replacing "I".

If a reason acceptable to the Faculty Board and Senate is not given for the absence, then the grade for that course unit shall be computed with the available continuous assessment marks at the time of **results release.**

In case of a blended course, if absent for one component either theory or practical for an end semester examination and the reason for the absence being acceptable by the Faculty Board and Senate, then he/she shall sit the next available examination as a proper candidate (in case of a repeat candidate, he/she shall retain the lost attempt), and a new grade will be assigned upon evaluation, replacing "I". If not, then the grade for that course unit shall be computed with the available continuous assessment marks at the time of **results release.**

However, the for the students who were absent due to not eligible or not allowed willnot be considered under this conduition.

b) If grade "I" was given due to student not applying for the end semester examination of a registered course unit due to reasons acceptable to the Faculty Board and Senate (or due to any restrictions imposed by the Senate), then in such case records should be kept in the respective department regarding the reasons for this grade and a scheme for its removal. In such case the student should remove the grade "I" by re-sitting the end semester exam when it is held next (or until the end of any imposed restrictions).

   If a student is not applying for the end semester examinaton for an acceptable reason, he/she should notify to the Dean within two weeks after the closing date for applications for a particular exam. If the reason is not acceptable to the Faculty Board and Senate, the grade for that course unit shall be computed with the available continuous assessment marks.

Student (or parent / guardian) should inform in writing his/her absence to an end semester examination of a course unit to the Dean or Assistant Registrar within 7 days from the date of exam due to illness. Once informed within 7 days, the medical certificates (certified by the University Medical Officer) should be submitted within 14 days of the absent examination. If there is inability due to continued illness the matter has to be informed in writing within 14 days.

4.4 Attendance and Repetition of Course Unit

I. University regulations require 80% attendance for all components of a course unit. If a student does not meet the required attendance for a course unit, then he/she will not be eligible to sit the end semester examination as proper candidate and a grade will be assign to that course with available continuous assessment marks.

II. A student who obtains grades of C-, D+, D or E for a course unit may be allowed to repeat the end semester examination component of that

course to improve the grades. For this purpose, **only three more attempts** will be given and the maximum grade shall be C. Students are expected to repeat such examinations when it is held next. In the event a candidate obtains a lower grade while attempting to improve a grade, he/she will be entitled to his/her already obtained best grade.

III. Continuous assessment marks will be incorporated for the computation of final grade for students who sit an end semester examination (i) as proper candidate; (ii) as repeat candidate at the first time (i.e., 2nd attempt). For 3rd and 4th attempts, only end semester examination marks shall contribute to the final grade of that course unit.

IV. Repeat students may be allowed to follow the lectures with the consent of the lecturer; however, they will not be allowed to attend practical classes.

4.5 Awards

The Board of Examiners chaired by the Vice Chancellor shall meet to consider the performance of the candidates and recommend the following awards to the Senate.

4.5.1 Award of Bachelor of Science Degree

A candidate shall be awarded the BSc degree, if he/she has:

(i) Obtained a minimum overall weighted GPA (*G*) of 2.00 in minimum of 90 credits (excluding Auxiliary courses) with at least 30 credits in each level, and satisfying all the following requirements:
   a. should have grade D or better in minimum of 24 credits each in at least two Principal Subjects with minimum of 8 credits at each 100, 200, and 300 levels. The remaining requirements can be met by following courses in different subject(s). Not more than 12 credits are allowed from the Supplementary courses;
   b. should have grade D or better in the compulsory course units of the Principal subjects offered and all Enhancement courses;
   c. should not appear any E grades within the minimum number of credits required; and

(ii) obtained at least a Satisfactory (S) grades for the Auxiliary courses ENG100, ENG200, CPD100, SLV100 and SLV200(S/T); and
(iii) completed requirements (i) and (ii) above within six academic years.

Award of Class

A student who has fulfilled all the conditions for the award of BSc shall be awarded a Class, if he/she fulfils the following additional requirements:

4.5.2.1 First Class:

(i) Obtain a minimum overall weighted GPA ($\overline{G}$) of 3.70;
(ii) Obtain A or better grades in at least 36 credits;
(iii) Obtain C or better in at least 80 credits;
(iv) Complete the degree programme within three academic years.

4.5.2.2 Second Class (Upper Division):

(i) Obtain a minimum overall weighted GPA ($\overline{G}$) of 3.30;
(ii) Obtain B or better grades in at least 36 credits;
(iii) Obtain C or better in at least 75 credits;
(iv) Complete the degree programme within three academic years.

4.5.2.3 Second Class (Lower Division):

(i) Obtain a minimum overall weighted GPA ($\overline{G}$) of 3.00;
(ii) Obtain B- or better grades in at least 36 credits;
(iii) Obtain C or better in at least 75 credits;
(iv) Complete the degree programme within three academic years.

4.5.2 Award of Bachelor of Science Honours Degree

A candidate shall be awarded the Degree of Bachelor of Science Honours (BScHons), if he/she has

(i) obtained a minimum overall weighted GPA ($\overline{G}$) of 2.00 in minimum of 120 credits (excluding *Auxiliary* courses) with at least 30 credits from 100, 200 level each, at least 20 credits from 300 level, and at least 40 credits from 400 level, and satisfying all the following requirements:
   a. should have grade D or better in minimum of 72 credits from the Principal Subject of specialization (88 credits in case of Mathematics), out of which at least 40 credits from 400 level;

b. should have grade D or better in minimum of 24 credits in each of the **two Principal Subjects** with minimum of 8 credits at each 100, 200, and 300 levels;
c. should not have more than 12 credits from Supplementary courses;
d. should have grade C or better in at least 96 credits including the research project at 400 Level;
e. should have grade D or better in the compulsory course units of the Principal subjects offered and all Enhancement course and Compulsory course units specified for the Honours Degree in the subject of specialization;
f. should not appear any E grades within the minimum number of credits required; and

(ii) obtained at least a Satisfactory (S) grades for the Auxiliary courses ENG100, ENG200, CPD100, SLV100 and SLV200(S/T), and
(iii) completed requirements (i) and (ii) above within eight academic years.

Award of Class

A student who has fulfilled all the conditions for the award of a BScHons degree shall be awarded a Class if he/she fulfils the following additional requirements:

4.5.2.1 First Class:
(i) Obtain a minimum overall weighted GPA ($\overline{G}$) of 3.70;
(ii) Obtain A or better grades in at least 48 credits, of which at least 20 credits are from the 400 level;
(iii) Complete of the degree programme within four academic years.

4.5.2.2 Second Class (Upper Division):
(i) Obtain a minimum overall weighted GPA ($\overline{G}$) of 3.30;
(ii) Obtain B or better grades in at least 48 credits, of which at least 20 credits from 400 level;
(iii) Complete of the degree programme within four academic years.

4.5.2.3 Second Class (Lower Division):
(i) Obtain a minimum overall weighted GPA ($\overline{G}$) of 3.00;

(ii) Obtain B or better grades in at least 48 credits, of which at least 20 credits from 400 level;
(iii) Complete of the degree programme within four academic years.

4.5.3 Fall-back Qualifications

A student who fails to fulfil the above requirements in section 4.5.1 for BSc degree, after completing maximum period of six academic years allowed for the degree become eligible to apply for fall-back qualification of a Higher Diploma in Science (SLQF Level 4) or Diploma in Science (SLQF Level 3). However, a student expelled from the university on disciplinary grounds, might not be eligible for fall-back qualification.

A recommendation for award of a fall-back qualification to a student who applied for Higher Diploma in Science or Diploma in Science under above condition should be made by the Faculty Board of Science, to the Senate, after an exit interview to judge the suitability of the student to the applied qualifications.

The effective date of award of a fall-back qualification of Bachelor of Science or Higher Diploma in Science or Diploma in Science will be the first day the month after which the Senate has approved the award of the qualification.

4.5.3.1 Award of Diploma in Science (SLQF Level 3)

A candidate shall be awarded the Diploma in Science, if he/she has:

(i) Obtained a minimum overall weighted GPA of 2.00 in minimum of **30 credits** (excluding *Auxiliary* courses), out of which,
   a. a minimum of 8 credits from each year
   b. should have minimum of 12 credits each in at least two Principal Subjects, and
   c. should not have accumulated more than 6 credits from *Supplementary* courses, and
(ii) obtained at least a Satisfactory (S) grade in any one of the Auxilary courses (ENG/SLV/CPD); and
(iii) completed requirements (i) and (ii) above within six academic years.

4.5.3.2 Award of Higher Diploma in Science (SLQF Level 4)

A candidate shall be awarded the Higher Diploma in Science, if he/she has:

(i) Obtained a minimum overall weighted GPA of 2.00 in minimum of **60 credits** (excluding *Auxiliary* courses), out of which,
   a. a minimum of 16 credits from each year
   b. should have minimum of 18 credits each in at least two Principal Subjects, and
   c. should not have accumulated more than 10 credits from *Supplementary* courses, and

(ii) obtained at least a Satisfactory (S) grade in any two of the Auxilary courses (ENG/SLV/CPD); and

completed requirements (i) and (ii) above within six academic years.

5 Office of the Dean

5.1 Administrative Officers

Dean / Faculty of Science

Senior Professor P. Vinobaba
BScHons (Jaffna), PhD. (Stirling-UK), CBiol(UK), MIBiol (U.K)
Senior Professor in Zoology
E-mail: deanscience@esn.ac.lk

Assistant Registrar/ Faculty of Science

Ms. R. Archsana
BSc. Ag. Tech. Mgt. (UPDN), MBA (SJP - PIM) & ACMA (UK)
E-mail: arfos@esn.ac.lk

Assistant Bursar/ Faculty of Science

Ms. Thilini Madhusha Masachchi
HNDA, CBA, MAAT
E-mail: masachchitm@esn.ac.lk

5.2 Other Staff

Senior Management Assistant	**:** Mrs. S. Mohan
Management Assistants	**:** Mr. M. Ariharan Mr. T. Thanushan Mr. S. Supananth Mrs. S. Sivakaran
Works aide	**:** Mr. S. Premkumar **:** Mrs. M. Nithiyan
Contacts	**: Tel :** 0652240528, 0652240758 **Fax:** 0652240758 **E-mail:** deanscience@esn.ac.lk / arfos@esn.ac.lk

6 Department of Botany

6.1 100 Level of Study

Course Units and Syllabus

Course Code	Course Title	Hours♣ (L / P / IL)	Credits	Prerequisite	BSc (General)	BScHons (Botany)
First Semester						
BT1011	Plant Cell	15/0/35	01	-	✓	✓
BT1021	Plant Cell Practical	0/30/20	01	-	✓	✓
BT1032	Basic Microbiology	15/30/55	02	-	✓	✓
Second Semester						
BT1041	Basic Plant Physiology	15/0/35	01	-	✓	✓
BT1051	Basic Plant Physiology Practical	0/30/20	01	-	✓	✓
BT1061	Non-vascular Plant Diversity	15/0/35	01	-	✓	✓
BT1071	Non-vascular Plant Diversity Practical-	0/30/20	01	-	✓	✓

♣Hours are distinguished as (Lecture/practical/independent learning) that cover time taken for assessments.

The symbol "✓" denotes that course is compulsory for the Degree Programme.

6.2 200 Level of Study

Course Units and Syllabus

Course Code	Course Title	Hours♣ (L/P/IL)	Credits	Prerequisite	BSc General	BScHons (Botany)
First Semester						
BT2011	Vascular Plant Diversity	15/0/35	01	BT1061	✓	✓

BT2021	Vascular Plant Diversity Practical	0/30/20	01	BT1071	✓	✓
BT2042	Mycology	15/30/55	02	BT1032	⊗	⊗
BT2051	Plant Morphology and Anatomy	15/0/35	01	BT1011	✓	✓
BT2061	Plant Morphology and Anatomy Practical	00/30/20	01	BT2051	✓	✓
BT2072	Molecular Biology	15/30/55	02	BT1011	⊗	✓
Second Semester						
BT2082	Bio-statistics	15/30/55	02	-	✓	✓
BT2092	Plant Biochemistry	15/30/55	02	BT1011	✓	✓
BT2102	Plant Propagation	15/30/55	02	-	⊗	⊗
BT2111	Plant Physiology	15/0/35	01	BT1041	⊗	⊗
BT2121	Plant Physiology Practical	0/30/20	01	BT1051	⊗	⊗
BT2132	Plant Genetics	15/30/55	02	BT1011	⊗	✓

♣ Hours are distinguished as (Lecture/practical/independent learning) that cover time taken for assessments.

The symbol "✓" denotes that course is compulsory for the Degree Programme.

The symbol "⊗" denotes that course is elective for the Degree Programme.

6.3 300 Level of Study

Course Units and Syllabus

Course Code	Course Title	Hours♣ (L / P / IL)	Credits	Prerequisite	BSc General	BScHons (Botany)
First Semester						
BT3012	Plant Pathology	15/30/55	02	BT1032	✓	✓
BT3021	Biochemistry	15/00/35	01	BT2092	✓	✓
BT3031	Analytical Techniques	00/30/20	01	-	⊗	⊗
BT3042	Microbiology	15/30/50	02	BT1032	⊗	⊗
BT3051	Plant Systematics	15/00/35	01	BT2051 BT2061	✓	✓
BT3061	Plant Systematics Practical	00/30/20	01	BT2051 BT2061	✓	✓

Second Semester						
BT3072	Economic and Industrial Botany	15/30/55	02	-	⊗	✓
BT3082	Sri Lankan Ecosystems and their Conservation	15/30/55	02	-	✓	✓
BT3092	Mangrove Ecology and Management	15/30/55	02	BT3082	⊗	⊗
BT3101	Plant Developmental Physiology	15/00/35	01	BT2111	⊗	⊗
BT3111	Developmental Physiology Practical	00/30/20	01	BT3101	⊗	⊗
BT3121	Plant Science Seminar	00/00/50	01	-	⊗	⊗
BT3131	Ecology and Evoluation	15/00/35	01	-	✓	✓

♣Hours are distinguished as (Lecture/practical/independent learning) that cover time taken for assessments.

The symbol "✓" denotes that course is compulsory for the Degree Programme.

The symbol "⊗" denotes that course is elective for the Degree Programme.

6.4 400 Level of Study

Course Units and Syllabus

Course Code	Course Title	Hours♣ (L / P / IL)	Credits	Prerequisite	BScHon (Botany)
BT4013	Advanced Plant Pathology	30/30/55	03	BT3012	✓
BT4022	Postharvest Technology of fruits, vegetables and cut flowers	15/30/55	02	BT3012	⊗
BT4033	Molecular Applications in Plant Sciences	30/30/55	03	BT2072	⊗
BT4042	Experimental design and data analyses	15/30/55	02	BT2082	✓
BT4052	Research Methodology & Scientific Writing	30/0/70	02	-	⊗
BT4062	Limnology and Bio-indicators	30/0/70	02	BT1061 BT2011	⊗

BT4071	Limnology and Bio-indicators Practical	00/30/15	01	BT1071 BT2021	⊗
BT4083	Plant Tissue Culture Technology	30/30/90	03	BT1011 BT1021	✓
BT4093	Applied Microbiology	30/30/90	03	BT3042	⊗
BT4103	Advanced Plant Systematics	30/30/90	03	BT3051, BT3061	⊗
BT4113	Microbial Symbiosis	30/30/90	03	BT1032	⊗
BT4123	Biodiversity Conservation and Management	30/30/90	03	BT3082	⊗
BT4131	Plant Secondary Metabolites	15/00/35	01	BT2092	⊗
BT4142	Ornamental Horticulture	15/30/55	02	-	⊗
BT4152	Plant Population Biology	30/00/70	02	BT2031 BT4042	✓
BT4161	Experiments on plant population biology	00/30/20	01	BT2031 BT4042	✓
BT4173	GIS and Remote Sensing	30/30/90	03	-	⊗
BT4183	Molecular Genetics and Plant Breeding	30/30/90	03	BT2132	✓
BT4193	Seed Biology and Technology	30/30/90	03	BT3101	⊗
BT4202	Soil Fertility and Management	15/30/55	02	-	⊗
BT4212	Essay	100	02	-	✓
BT4222	Industrial Training #	200	02	-	✓
BT4241	Herbarium Techniques	00/05/45	01	-	✓
BT4252	Advanced Biochemistry	30/00/70	02	BT2092 BT3021	⊗
BT4236	Research Project #	600	06	BT2082 BT4042	✓

♣Hours are distinguished as (Lecture/practical/independent learning) that cover time taken for assessments.

Notional learning hours for course units in category 3.3 B.

7 Department of Chemistry

7.1 100 Level of Study

Course Units and Syllabus

Course Code	Course Title	Hours♣ (L/P/IL)	Credits	Prerequisite	BSc (General)	BScHons (Chemistry)
First Semester						
CH1013	Principles of Chemistry-I	45/0/105	03	-	✓	✓
CH1021	Elementary Chemistry Laboratory-I	0/30/20	01	-	✓	✓
Second Semester						
CH1033	Principles of Chemistry II	45/0/105	03	-	✓	✓
CH1041	Elementary Chemistry Laboratory II	0/30/20	01	-	✓	✓

♣Hours are distinguished as (Lecture/practical/independent learning) that cover time taken for assessments.

The symbol "✓" denotes that course is compulsory for the Degree Programme.

7.2 200 Level of Study

Course Units and Syllabus

Course code	Course Title	Hours♣ (L/P/IL)	Credits	Prerequisite	BSc (General)	BScHons (Chemistry)
First Semester						
CH2012	Inorganic Chemistry I	30/0/70	02	CH1013, CH1033	✓	✓
CH2021	Analytical Chemistry	15/0/35	01	CH1013, CH1033	⊗	✓

CH2032	Organic Chemistry I	30/0/70	02	CH1013, CH1033	✓	✓
CH2042	Inorganic Chemistry Laboratory-I	0/60/40	02	CH1021 CH1041	✓	✓
Second Semester						
CH2051	Special topics in Inorganic Chemistry–I	15/0/35	01	CH2012	⊗	✓
CH2061	Physical Chemistry I	15/0/35	01	CH1013, CH1033	⊗	✓
CH2071	Introduction to Polymer Chemistry	15/0/35	01	CH1013, CH1033	⊗	✓
CH2081	Organic Chemistry Laboratory–I	0/30/20	01	CH2032	✓	✓
CH2091	Physical Chemistry Laboratory–1	0/30/20	01	CH2061	✓	✓

♣Hours are distinguished as (Lecture/practical/independent learning) that cover time taken for assessments.

The symbol "✓" denotes that course is compulsory for the Degree Programme.

The symbol "⊗" denotes that course is elective for the Degree Programme.

7.3 300 Level of Study

Course Units and Syllabus

Course code	Course Title	Hours♣ (L/P/IL)	Credits	Prerequisite	BSc (General)	BScHons (Chemistr
First Semester						
CH3011	Chemistry of natural products-I	15/0/35	01	CH2032	⊗	✓
CH3021	Heterocyclic Chemistry and Rearrangement reactions	15/0/35	01	CH2032	⊗	✓
CH3031	Electrochemistry	15/0/35	01	CH2061	✓	✓
CH3043	Industrial Chemistry	45/0/105	03	-	⊗	⊗
CH3051	Special topics in Inorganic Chemistry-II	15/0/35	01	CH2012	⊗	✓

CH3062	Organic Chemistry Laboratory-II	0/60/40	02	CH2081	✓	✓
Second Semester						
CH3071	Special topics in Physical Chemistry –I	15/0/35	01	CH2061	⊗	✓
CH3081	Nanotechnology and its Applications	15/0/35	01	CH1013, CH1033	⊗	⊗
CH3091	Physical Chemistry Laboratory-II	0/30/20	01	CH2091	✓	✓
CH3101	Inorganic Chemistry Laboratory-II	0/30/20	01	CH2042	✓	✓

♣Hours are distinguished as (Lecture/practical/independent learning) that cover time taken for assessments.

The symbol "✓" denotes that course is compulsory for the Degree Programme.

The symbol "⊗" denotes that course is elective for the Degree Programme.

7.4 400 Level of Study

Course Units and Syllabus

Course code	Course Title	Hours♣ (L/P/IL)	Credits	Prerequisite	BScHons (Chemistry)
CH4012	Advanced Inorganic Chemistry-I	30/0/70	02	CH2012, CH2051	✓
CH4022	Advanced Organic Chemistry-I	30/0/70	02	CH2021	✓
CH4032	Advanced Physical Chemistry-I	30/0/70	02	CH2061	✓
CH4042	Environmental Chemistry	30/0/70	02	-	⊗
CH4052	Advanced Analytical Chemistry	30/0/70	02	CH2021	✓
CH4062	Advanced Inorganic Chemistry-II	30/0/70	02	CH3112	✓
CH4072	Advanced Organic Chemistry-II	30/0/70	02	CH3122	✓

Course code	Course Title	Hours♣ (L/P/IL)	Credits	Prerequisite	BScHons (Chemistry)
CH4082	Advanced Physical Chemistry-II	30/0/70	02	CH3132	✓
CH4092	Medical and Pharmaceutical Chemistry	30/0/70	02	CH2021	⊗
CH4101	Food Chemistry	15/0/35	01	CH3122	⊗
CH4111	Nuclear Chemistry	15/0/35	01	CH3051	⊗
CH4122	Topics in Advanced Organic Chemistry	30/0/70	02	CH3122	⊗
CH4131	Chemical Ecology	15/0/35	01	CH2021	⊗
CH4141	Polymer Chemistry	15/0/35	01	CH2071	⊗
CH4152	Chemistry of Natural Products II	30/0/70	02	CH3011	✓
CH4161	Bioinorganic Chemistry	15/0/35	01	CH2012	⊗
CH4172	Solid State Chemistry	30/0/70	02	CH2012 CH4012	✓
CH4181	Computational Chemistry	15/0/35	01	CH4032	⊗
CH4193	Advanced Inorganic Chemistry Laboratory	0/90/60	03	CH3101	✓
CH4203	Advanced Organic Chemistry Laboratory	0/90/60	03	CH3062	✓
CH4213	Advanced Physical Chemistry Laboratory	0/90/60	03	CH3091	✓
CH4221	Seminar	6/0/44	01	-	✓
CH4236	Research Project #	600	06	-	✓
CH4242	Industrial training #	200	02	-	⊗

♣Hours are distinguished as (Lecture/practical/independent learning) that cover time taken for assessments.

The symbol "✓" denotes that course is compulsory for the Degree Programme.

The symbol "⊗" denotes that course is elective for the Degree Programme.

Notional learning hours for course units in category 3.3 B.

8 Department of Computing

8.1 100 Level of Study

Course Units and Syllabus

Course Code	Course Title	Hours♣ (L/P/IL)	Credits	Prerequisites	BSc (General)	BScHons (Computer Sc)
First Semester						
CS1013	Introduction to Programme Design and Programming	30/30/90	03	-	✓	✓
CS1021	Introduction to Information Systems	15/0/35	01	-	✓	✓
Second Semester						
CS1032	Object oriented programming	15/30/55	02	CS1013	✓	✓
CS1042	Computer systems	30/0/70	02	-	✓	✓

♣Hours are distinguished as (Lecture/practical/independent learning) that cover time taken for assessments.
The symbol "✓" denotes that course is compulsory for the Degree Programme.

8.2 200 Level of Study

Course Units and Syllabus

Course Code	Course Title	Hours♣ (L/P/IL)	Credits	Prerequisites	BSc (General)	BScHons (Computer Sc)
First Semester						
CS2013	Data Structures and Algorithms	30/30/90	03	CS1032	✓	✓

CS2022	Introduction to Database Management Systems	15/30/55	02	-	✓	✓
CS2032	Computing Mathematics	30/0/70	02	-	⊗	✓
Second Semester						
CS2042	Fundamentals of Software Engineering	30/0/70	02	-	✓	✓
CS2051	Rapid application development	15/0/35	01	CS2042 CS1032	⊗	⊗
CS2062	System analysis and design	30/0/70	02	CS2022	⊗	✓
CS2071	Case Study based Programming Project #	100	01	CS1032 CS2022 CS2042	✓	✓

♣Hours are distinguished as (Lecture/practical/independent learning) that cover time taken for assessments.

The symbol "✓" denotes that course is compulsory for the Degree Programme.

The symbol "⊗" denotes that course is elective for the Degree Programme.

The symbol # denotes notional learning hours for course units in category 3.3B.

8.3 300 Level of Study

Course Units and Syllabus

Course code	Course Title	Hours♣ (L/P/IL)	Credits	Prerequisite	BSc (General)	BScHons (Computer Sc)
First Semester						
CS3012	Introduction to Computer graphics	15/30/55	02	CS1032	✓	✓
CS3022	Computer Networks	15/30/55	02	-	✓	✓
CS3032	Logic Programming	15/30/55	02	-	✓	✓
CS3042	User Interface Design	30/0/70	02	-	⊗	⊗
Second Semester						
CS3052	Web Based Application Development	15/30/55	02	-	✓	✓

CS3062	Introduction to Mobile Computing	15/30/55	02	CS1032	⊗	⊗
CS3072	Advanced Database Management Systems	15/30/55	02	CS2022	⊗	✓
CS3082	Theory of Computation	30/0/70	02	CS2032	⊗	✓
CS3092	Software Project Management and Professional Issues	30/0/70	02	CS2042	⊗	⊗

♣Hours are distinguished as (Lecture/practical/independent learning) that cover time taken for assessments.
The symbol "✓" denotes that course is compulsory for the Degree Programme.
The symbol "⊗" denotes that course is elective for the Degree Programme.

8.4 400 Level of Study

Course Units and Syllabus

Course Code	***Course Title***	**Hours♣ (L/P/IL)**	**Credits**	**Prerequisite**	**BScHons (Computer Sc)♦**
CS4013	Computer Architecture and Operating Systems	30/30/90	03	CS1042	✓
CS4023	Intelligent Systems and Knowledge bases	30/30/90	03	CS3032	✓
CS4037	Research Project #	700	07	-	✓
CS4043	Bio informatics and computational biology	30/30/90	03	-	⊗
CS4052	Research Methods	30/0/70	02	-	✓
CS4062	Information System Security	30/0/70	02	-	✓
CS4073	Advanced Software Engineering	30/30/90	03	CS2042	⊗
CS4082	Systems and Network Administration	15/30/55	02	CS3022	⊗

Course Code	*Course Title*	Hours♣ (L/P/IL)	Credits	Prerequisite	BScHons (Computer Sc)♦
CS4093	Parallel and Distributed Computing	30/30/90	03	-	⊗
CS4102	Software Quality Assurance and Verification	30/0/70	02	-	⊗
CS4112	Machine Learning	30/0/70	02	-	✓
CS4123	Image Processing and Computer Vision	30/30/90	03	CS4112	✓
CS4133	Data Mining and Data Analytics	30/30/90	03	-	⊗
CS4143	Advanced Data Structures and Algorithms	30/30/90	03	CS2013	⊗
CS4152	Compiler Theory and Programming Languages	30/0/70	02	CS3082	✓
CS4163	Advanced Networking, Virtualization and Cloud Computing	30/30/90	03	CS3022	✓
CS4173	Robotics and Embedded Systems	30/30/90	03	-	⊗
CS4182	Advanced Topics in Computing Mathematics	30/0/70	02	CS2032	✓
CS4192	Middleware Architecture	30/0/70	02	-	⊗

♣Hours are distinguished as (Lecture/practical/independent learning) that cover time taken for assessments.

The symbol "✓" denotes that course is compulsory for the Degree Programme.

The symbol "⊗" denotes that course is elective for the Degree Programme.

The symbol # denotes notional learning hours for course units in category 3.3B.

9 Department of Mathematics

9.1 Mathematics 1

9.1.1 100 Level of Study

Course Units and Syllabus

Course Code	Course Title	Hours♣ (L/P/IL)	Credit	Prerequisite	Compulsory	
					BSc (General)	B ScHons (Mathematics)
First semester						
MT1012	Foundation of Mathematics	30/0/70	02	-	✓	✓
MT1022	Ordinary Differential Equations	30/0/70	02	-	✓	✓
Second Semester						
MT1032	Limit Process	30/0/70	02	-	✓	✓
MT1042	Vector Analysis	30/0/70	02	-	✓	✓

♣ Hours are distinguished as (Lectures/ Practical/ Independent Learning) that cover time takes for assessments

- The symbol "✓"denotes whether the course is compulsory for the two Degree programmes.

9.1.2 200 Level of Study

Course Units and Syllabus

Course Code	Course Title	Hours♣ (L/P/IL)	Credit	Prerequisite	Compulsory	
					BSc (General)	B ScHons (Mathematic
First semester						
MT2012	Linear Algebra I	30/0/70	02	MT1012	✓	✓

MT2022	Calculus	30/0/70	02	MT1032	✓	✓
Second Semester						
MT2032	Numerical Analysis	30/0/70	02	MT1032	✓	✓
MT2042	Classical Mechanics I	30/0/70	02	MT1042	✓	✓

♣Hours are distinguished as (Lecture/practical/independent learning) that cover time taken for assessments.

The symbol "✓" denotes that course is compulsory for the Degree Programme.

9.1.3 300 Level of Study

Course Units and Syllabus

Course Code	Course Title	Hours♣ (L/P/IL)	Credit	Prerequisite	Compulsory	
					BSc (General)	B ScHons (Mathematics)
First Semester						
MT3013	Complex Analysis I	45/0/105	03	MT1032, MT2022	✓	✓
MT3022	Fluid Dynamics	30/0/70	02	MT1022, MT1042	✓	✓
Second Semester						
MT3033	Probability Theory	45/0/105	03	-	✓	✓

♣Hours are distinguished as (Lecture/practical/independent learning) that cover time taken for assessments.

The symbol "✓" denotes that course is compulsory for the Degree Programme.

9.2 Mathematics II

9.2.1 100 Level of Study

Course Units and Syllabus

Course Code	Course Title	Hours♣ (L/P/IL)	Credit	Prerequisite	Compulsory	
					BSc (General)	BScHons (Mathematics)
First semester						
MT1212	Algebra	30/0/70	02	-	✓	✓
MT1222	Mathematical Software	0/60/40	02	-	✓	✓
Second Semester						
MT1232	Mathematical Methods	30/0/70	02	MT1022	✓	✓
MT1242	Mathematical Modelling I	30/0/70	02	MT1022	✓	✓

♣Hours are distinguished as (Lecture/practical/independent learning) that cover time taken for assessments.

The symbol "✓" denotes that course is compulsory for the Degree Programme.

9.2.2 200 Level of Study

Course Units and Syllabus

Course Code	Course Title	Hours♣ (L/P/IL)	Credit	Prerequisite	Compulsory	
					BSc (General)	BScHons (Mathematics)
First semester						
MT2212	Metric Spaces	30/0/70	02	MT1032, MT2022	✓	✓
MT2222	Optimization	30/0/70	02	-	✓	✓
MT2232	Statistics	30/0/70	02	-	⊗	⊗

Second Semester						
MT2242	Linear Algebra II	30/0/70	02	MT2012	✓	✓
MT2252	Riemann-Stieltjes Integrals and Sequences and Series of Functions	30/0/70	02	MT1032, MT2022	✓	✓
MT2262	Differential Geometry	30/0/70	02	MT1042	⊗	⊗

♣Hours are distinguished as (Lecture/practical/independent learning) that cover time taken for assessments.

The symbol "✓" denotes that course is compulsory for the Degree Programme.

The symbol "⊗" denotes that course is elective for the Degree Programme.

9.2.3 300 Level of Study

Course Units and Syllabus

Course Code	Course Title	Hours♣ (L/P/IL)	Credit	Prerequisite	Compulsory	
					BSc (General)	BScHons (Mathematics)
First Semester						
MT3213	Classical Mechanics II	45/0/105	03	MT1022, MT1042	✓	✓
MT3232	General Topology	30/0/70	02	MT2212	✓	✓
Second Semester						
MT3222	Graph Theory	30/0/70	02	-	⊗	⊗
MT3242	Financial Mathematics	30/0/70	02	MT1022	⊗	⊗
MT3253	Group Theory I	45/0/105	03	MT1212	✓	✓

♣Hours are distinguished as (Lecture/practical/independent learning) that cover time taken for assessments.

The symbol "✓" denotes that course is compulsory for the Degree Programme.

The symbol "⊗" denotes that course is elective for the Degree Programme.

9.2.4 400 Level of Study

Course Units and Syllabus

Course Code	Course Title	Hours* (L/P/IL)	Credit	Prerequisite	BScHons (Mathematics)
MT4014	Functional Analysis II	60/0/140	04	MT1032, MT1242	✓
MT4023	Measure Theory	45/0/105	03	MT2252	✓
MT4033	Algebraic Topology	5/0/105	03	MT3232	✓
MT4044	Partial Differential Equations	60/0/140	04	MT1232	⊗
MT4054	Numerical Theory of Ordinary Differential Equations	60/0/140	04	MT1022	⊗
MT4063	Approximation Theory	45/0/105	03	MT1032, MT1242	⊗
MT4074	Ring Theory	60/0/140	04	MT3033	⊗
MT4084	Relativity	60/0/140	04	MT3022	⊗
MT4093	Mathematical Modelling II	45/0/105	03	MT2222	⊗
MT4103	Numerical Linear Algebra	45/0/105	03	MT2032, MT2242	⊗
MT4114	Data Structure and Design and Analysis of Algorithms	60/0/140	04	CS2013	⊗
MT4123	Multivariable Calculus with Applications	45/0/105	03	MT1032, MT1242	⊗
MT4134	Operator Theory	60/0/140	04	MT1032	⊗
MT4144	Differential Equations and Dynamical Systems	60/0/140	04	MT1232	⊗
MT4153	Parallel Processing	45/0/105	03	-	⊗
MT4163	Number Theory	45/0/105	03	MT1212	⊗
MT4173	Lie Group Analysis of Ordinary Differential Equations	45/0/105	03	MT1022	⊗
MT4183	Lie Group Analysis of Partial Differential Equations	45/0/105	03	MT1232	⊗
MT4193	Complex Analysis II	45/0/105	03	MT3013	✓
MT4203	Galois Theory	45/0/105	03	MT3033	⊗

Course Code	Course Title	Hours♣ (L/P/IL)	Credit	Prerequisite	BScHons (Mathematics)
MT4214	Group Theory II	60/0/140	04	MT3033	⊗
MT4226	Research Project #	600	06	-	✓

♣Hours are distinguished as (Lecture/practical/independent learning) that cover time taken for assessments.

The symbol "✓" denotes that course is compulsory for the Degree Programme.

The symbol "⊗" denotes that course is elective for the Degree Programme.

Notional learning hours for course units in category 3.3 B.

10 Department of Physics

10.1 100 Level of Study

Course Units and Syllabus

Course Code	Course Title	Hours♣ (L / P / IL)	Credits	Prerequisite	BSc General	BScHons. (Physics)
First Semester						
PH1013	General Physics –I	45/0/105	03	-	✓	✓
PH1021	Elementary Physics Laboratory – I	0/45/05	01	-	✓	✓
Second Semester						
PH1033	General Physics –II	45/0/105	03	-	✓	✓
PH1041	Elementary Physics Laboratory – II	0/45/05	01	-	✓	✓

♣Hours are distinguished as (Lecture/practical/independent learning) that cover time taken for assessments.

The symbol "✓" denotes that course is compulsory for the Degree Programme.

The symbol # denotes notional learning hours for course units in category 3.3 B.

10.2 200 Level of Study

Course Units and Syllabus

Course Code	Course Title	Hours♣ (L / P / IL)	Credits	Prerequisite	BSc General	BScHons (Physics)
First Semester						
PH2012	Mechanics	30/0/70	02	PH1013	✓	✓
PH2021	Thermodynamics	15/0/35	01	PH1013	✓	✓
PH2051	General Physics Laboratory –I	0/45/05	01	PH1021 PH1041	✓	✓
PH2181	Special Theory of Relativity	15/0/35	01	EN1011$	⊗	✓
PH2122	Physics Education	15/30/55	02	Physics (A/L)	⊗	⊗
Second Semester						
PH2062	Electromagnetic Phenomena	30/0/70	02	PH1033 MT1032	✓	✓
PH2072	Electronics-I	15/30/55	02	PH1033	⊗	✓
PH2091	Quantum Mechanics-I	15/0/35	01	MT1032 MT1042	✓	✓
PH2101	Introduction to Astronomy	15/0/35	01	-	⊗	⊗
PH2111	General Physics Laboratory-II	0/45/05	01	PH1021 PH1041	✓	✓

♣Hours are distinguished as (Lecture/practical/independent learning) that cover time taken for assessments.

The symbol "✓" denotes that course is compulsory for the Degree Programme.

The symbol "⊗" denotes that course is elective for the Degree Programme.

$ For Biological Science Stream Students

10.3 300 Level of Study

Course Units and Syllabus

Course Code	Course Title	Hours♣ (L / P / IL)	Credits	Prerequisite	BSc General	BScHons (Physics)
First Semester						
PH3011	Solid State Physics –I	15/0/35	01	EN1011$	✓	✓
PH3021	Atomic Physics	15/0/35	01	PH2091	✓	✓
PH3042	Medical Physics	15/30/55	02	EN1011$ Physics (A/L)	⊗	⊗
PH3051	General Physics Laboratory –III	0/45/05	01	PH2051 PH2111	✓	✓
PH3082	Nanoscience and Nanotechnology –I	30/0/70	02	PH1033	⊗	✓
PH3131	Statistical Physics	15/0/35	01	PH1013	⊗	✓
Second Semester						
PH3061	Nuclear Physics	15/0/35	01	PH2091	✓	✓
PH3072	Electronics-II	30/0/70	02	PH2073	⊗	✓
PH3091	Energy and Environment	15/0/35	01	Physics (A/L)	⊗	⊗
PH3101	Biophysics	15/0/35	01	Physics (A/L)	⊗	✓
PH3111	Physics Laboratory Project #	100	01	PH3051	✓	⊗
PH3122	Physical Optics	15/30/55	02	PH1013	⊗	✓

♣Hours are distinguished as (Lecture/practical/independent learning) that cover time taken for assessments.
The symbol "✓" denotes that course is compulsory for the Degree Programme.
The symbol "⊗" denotes that course is elective for the Degree Programme.
The symbol # denotes notional learning hours for course units in category 3.3B.

10.4 400 Level of Study

Course Units and Syllabus

Course Code	Course Title	Hours* (L / P / IL)	Credits	Prerequisite	BScHons (Physics)
PH4011	Mathematical Methods in Physics	15/0/35	01	MT1032 MT1042	✓
PH4022	Classical Mechanics	30/0/70	02	PH2012 MT1032 MT1042	✓
PH4033	Quantum Mechanics-II	45/0/105	03	PH2091 MT1012	✓
PH4042	Advanced Statistical Physics	30/0/70	02	PH2031 MT1012	✓
PH4051	Independent Study (Report and Seminar)	15/0/35	01	-	✓
PH4062	Particle Physics	30/0/70	02	PH2091 PH2081 MT1012	✓
PH4073	Electromagnetic Theory and Waves	45/0/105	03	PH2062 PH2081 MT1032 MT1042	✓
PH4083	Advanced Physics Laboratory-I	0/90/60	03	PH3051	✓
PH4092	Advanced Electronics	30/0/70	02	PH3032	⊗
PH4102	Advanced Nuclear Physics	30/0/70	02	PH3082	✓
PH4113	Advanced Optics, Lasers and Photonics	45/0/105	03	PH2042 MT1032 MT1042	⊗
PH4123	Solid State Physics-II	45/0/105	03	PH3011 MT1012	✓

Course Code	Course Title	Hours♣ (L / P / IL)	Credits	Prerequisite	BScHons (Physics)
PH4132	Magnetism and Superconductivity	30/0/70	02	PH2031 PH3021	✓
PH4143	Materials Characterization Techniques	45/0/105	02	PH3011	⊗
PH4154	Advanced Physics Laboratory – II	0/120/80	04	PH3083	✓
PH4167	Research Project #	700	07	PH3051	✓

♣Hours are distinguished as (Lecture/practical/independent learning) that cover time taken for assessments.

The symbol "✓" denotes that course is compulsory for the Degree Programme.

The symbol "⊗" denotes that course is elective for the Degree Programme.

The symbol # denotes notional learning hours for course units in category 3.3B.

11 Department of Zoology

11.1 100 Level of Study

Course Units and Syllabus

Course Code	Course Title	Hours♣ (L/P/IL)	Credits	Prerequisite	BSc General	BScHons (Zoology)
First Semester						
ZL1011	Cell biology & Histology	15/0/35	01	-	✓	✓
ZL1022	Invertebrate diversity	30/0/70	02	-	✓	✓
ZL1031	Invertebrate diversity (Practical)	0/30/20	01	-	✓	✓
Second semester						
ZL1041	Cell biology & Histology (Practical)	0/30/20	01	-	✓	✓
ZL1052	Vertebrate diversity	30/0/70	02	-	✓	✓
ZL1061	Vertebrate diversity (Practical)	0/30/20	01	-	✓	✓

♣Hours are distinguished as (Lecture/practical/independent learning) that cover time taken for assessments.

The symbol "✓" denotes that course is compulsory for the Degree Programme.

11.2 200 Level of Study

Course Units and Syllabus

Course Code	Course Title	Hours♣ (L/P/IL)	Credits	Prerequisite	BSc General	BSc Hons (Zoology)
First Semester						
ZL2012	Animal Ecology	30/0/70	2	ZL1022, ZL1052	✓	✓
ZL2021	Animal Ecology (Practical)	0/30/20	1	ZL1031, ZL1061	✓	✓

ZL2111	Fundamentals of Genetics	15/0/35	1	ZL1011, ZL1041	✓	✓
ZL2121	Fundamentals of genetics practical	0/30/20	1	ZL1011, ZL1041	✓	✓
*ZL 2071	Parasitology	15/0/35	1	ZL1022	⊗	✓
*ZL 2081	Parasitology practical	0/30/20	1	ZL1031	⊗	✓
Second Semester						
ZL 2131	Molecular Biology	15/0/35	1	-	✓	✓
ZL 2141	Molecular biology practical	0/30/20	1	-	✓	✓
ZL 2091	Fisheries	0/30/20	1	ZL1052	⊗	✓
ZL 2101	Evolutionary biology and Zoogeography	15/0/35	1	ZL1022, ZL1052	✓	✓
*ZL 2031	Insect taxonomy and insect biology	15/0/35	1	ZL1022	⊗	⊗
*ZL 2041	Insect taxonomy and insect biology practical	0/30/20	1	ZL1031	⊗	⊗

♣Hours are distinguished as (Lecture/practical/independent learning) that cover time taken for assessments.

The symbol "✓" denotes that course is compulsory for the Degree Programme.

The symbol "⊗" denotes that course is elective for the Degree Programme.

11.3 300 Level of Study

Course Units and Syllabus

Course Code	Course Title	Hours♣ (L/P/IL)	Credits	Prerequisite	BSc General	BScHons (Zoology)
First Semester						
ZL3011	Animal Physiology	15/0/35	01	ZL1011, ZL1052	✓	✓
ZL3021	Animal Physiology (Practical)	0/30/20	01	ZL1041, ZL1061	✓	✓
ZL3032	Animal Behavior (T+P)	15/30/55	02	ZL2012, ZL2021	✓	✓

ZL3041	Applied Entomology	15/0/35	01	ZL1022, ZL2012	⊗	✓
ZL3051	Applied Entomology (Practical)	0/30/20	01	ZL1031, ZL2021	⊗	✓
Second Semester						
ZL3061	Fish biology	15/0/35	01	ZL1052	⊗	✓
ZL3071	Fish biology (Practical)	0/30/20	01	ZL1061	⊗	✓
ZL3082	Environmental Science(T+P)	15/15/70	02	ZL2012	✓	✓
ZL3091	Developmental Biology	15/0/35	01	ZL1052, ZL2031	✓	✓
ZL3101	Developmental Biology (Practical)	0/30/20	01	ZL1031, ZL1061	✓	✓
ZL3121	Fisheries (Practical)	15/0/35	01	ZL1061	⊗	⊗

♣Hours are distinguished as (Lecture/practical/independent learning) that cover time taken for assessments.

The symbol "✓" denotes that course is compulsory for the Degree Programme.

The symbol "⊗" denotes that course is elective for the Degree Programme.

11.4 400 Level of Study

Course Units and Syllabus

Course Code	Course Title	Hours♣ (L/P/IL)	Credits	Prerequisite	BScHons (Zoology)
ZL4011	Avian and Mammalian Biology	15/0/35	1	ZL1052	✓
ZL4022	Aquaculture	30/0/70	2	ZL2091, ZL3061	⊗
ZL4031	Aquaculture (Practical)	0/30/20	1	ZL3071	⊗
ZL4041	Marine Biology	15/0/35	1	ZL1052, ZL3061, ZL3082	⊗
ZL4051	Marine Biology (Practical)	0/30/20	1	ZL1061, ZL3071	⊗
ZL4062	Wildlife management	30/0/70	2	ZL2012, ZL3082	⊗

Course Code	Course Title	Hours* (L/P/IL)	Credits	Prerequisite	BScHons (Zoology)
ZL4071	Herpetology	15/0/35	1	ZL1052	⊗
ZL4082	Fish population dynamics and Management	30/0/70	2	ZL3061	⊗
ZL4093	Developmental genetics	45/0/105	3	ZL2031, ZL2041	⊗
ZL4102	Advanced biotechnology	30/0/70	2	ZL2071	⊗
ZL4111	Advanced biotechnology (Practical)	0/30/20	1	ZL2081	⊗
ZL4121	Fish pathology	15/0/35	1	ZL2051	⊗
ZL4131	Fish pathology (Practical)	0/30/20	1	ZL2061	⊗
ZL4143	Natural resource Management & Development planning	45/0/105	3	ZL3082	⊗
ZL4152	Coastal environment management	30/0/70	2	ZL3082	⊗
ZL4163	Ecotourism	45/0/105	3	ZL2012, ZL3082	⊗
ZL4172	Advanced pest management	30/0/70	2	ZL3041	⊗
ZL4181	Advanced pest management (Practical)	0/30/20	1	ZL3051	⊗
ZL4192	Evolutionary biology and Systematics	30/0/70	2	ZL2101	⊗
ZL4202	Environmental Impact Assessment	30/0/70	2	ZL3082	⊗
ZL4213	Conservation biology	45/0/105	3	ZL1052, ZL2012, ZL3082	⊗
ZL4222	Nutritional Biochemistry	30/0/70	2	ZL1011	⊗
ZL4231	Nutritional Biochemistry (Practical)	0/30/20	1	ZL1041	⊗
ZL4243	Laboratory techniques	45/0/105	3	-	✓
ZL4252	Applied animal Behavior & welfare	30/0/70	2	ZL3032	⊗
ZL4262	Scientific writing & Presentation	30/0/70	2	-	✓

Course Code	Course Title	Hours♣ (L / P / IL)	Credits	Prerequisite	BScHons (Zoology)
ZL4272	Seminars & Essays	200	2	-	✓
ZL4286	Research Project#	600	6	-	✓

♣Hours are distinguished as (Lecture/practical/independent learning) that cover time taken for assessments.

The symbol "✓" denotes that course is compulsory for the Degree Programme.

The symbol "⊗" denotes that course is elective for the Degree Programme.

The symbol # denotes notional learning hours for course units in category 3.3B.