



**FACULTY OF SCIENCE**  
**UNIVERSITY OF JAFFNA, SRI LANKA**

**2015/2016**

**Undergraduate**  
**Student Handbook**

**April 2017**



## Vice-Chancellor's Message

I wish to extend this congratulation message to the 42<sup>nd</sup> Batch of Students who are entering the Faculty of Science in April 2017 to commence their University education. The Faculty of Science is a well established faculty in the University of Jaffna, having competent and devoted staff with conducive environment for teaching and learning.

Thus, I consider that the new entrants of the Faculty of Science are very fortunate to pursue their undergraduate programme in such a well reputed faculty. Thousands of science graduates passed out through the portal of the Faculty of Science during the last forty years and serving the community and the country as eminent scholars, scientists, administrators, teachers and software engineers. I wish to congratulate the Faculty of Science on this achievement.

The University of Jaffna has been committed in continuously developing sports and leisure facilities for the students to engage themselves in sports and cultural activities. I have no doubt that you all would make best use of the University life and emerge as a competent science graduate and fulfill the expectation of your beloved parents and the nation.

May Almighty Lord shower his choicest blessings on all of you and make your stay at the University of Jaffna happy and fruitful.

Vice-Chancellor  
University of Jaffna

## Dean's Message



My Dear Students,

The Faculty of Science welcomes you and takes great pleasure in wishing you all a successful and rewarding undergraduate period of study in the Faculty.

We are human beings and our thirst for knowledge is innate. In this respect, cultivation of knowledge in basic and applied sciences is fundamental. The Faculty of Science is committed to fulfill your desire and ready to mould you as a competent graduate, excelling in learning and research, and capable of making useful contributions to the development of the nation.

Moreover, to empower the graduates with interpersonal skills, such as communication, entrepreneurial, information technology, self management, social awareness, and other soft skills, the Faculty of Science has incorporated relevant auxiliary and enhancement course units in the curriculum. You all can be proud that you are commencing the higher education in a faculty that has a rich tradition of producing quality science graduates who perform well in all walks of life in Sri Lanka and abroad.

The Faculty presents to you this well prepared handbook containing a collection of information that the new entrants to the Faculty of Science, University of Jaffna should know for them to begin their university education with confidence leading to successful completion of the desired degree programme. Moreover you are advised to consult the Academic staff and Heads of the Departments for seeking further guidance.

With best wishes,

**Prof. R. Vigneswaran**  
Dean/Faculty of Science  
University of Jaffna

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# I. University Education

## 1.1. The University of Jaffna

### 1.1.1. *Brief History*

The Jaffna Campus of the University of Sri Lanka was established in 1974 with a ceremonial inauguration on 6th October 1974 with the late Professor Kailasapathy as its first President. Under the University Act No. 16 of 1978, the Jaffna Campus gained the status of an independent University in January 1979 and became the University of Jaffna.

To know more about the history of the University you may visit the following URL: <http://www.sci.jfn.ac.lk/index.php/about-us/>

### 1.1.2. *Vision*

*“To be a leading centre of excellence in teaching, learning, research and scholarship”.*

The University of Jaffna is committed to the search for truth in a diverse field of subjects, as has been emphasized in its motto “Meipporul kanpatharivu” (Discernment is Wisdom).

### 1.1.3. *Mission*

*“To produce intellectual, professionally competent and capable graduates to meet the emerging needs of the national and international community, with a special emphasis on the social, economic and cultural needs of Northern Sri Lanka”.*

### 1.1.4. *Crest*



The crest of the university, shown above, has the ‘NANTHI’ (bull) symbol at its centre. Nanthi adorned the flag of the Jaffna Kingdom that existed in the Northern Sri Lanka until it was dismantled by the Portuguese in the 15th century. The traditional oil lamp symbolizes the light of wisdom. The whole emblem is surrounded by 64 flames.



These flames depict the sixty four varieties of art that adorns the Tamil culture. The crest is therefore symbolizes the growth of wisdom along with culture.

## 1.2. Faculty of Science, University of Jaffna

### 1.2.1. *Brief History*

The Faculty of Science was set up in October 1974 at Vaddukoddai in the premises taken over from the Undergraduates' Section of the Jaffna College. The first batch of students numbering 103 was admitted to the Faculty on 25th October 1974 and only a course in Mathematics and Statistics was provided initially. The late Professor Kanagasabapathy functioned as the first Dean of the Faculty and the Head of the Department of Mathematics and Statistics. After the appointment of Heads of Departments and a few Assistant Lecturers for some of the other disciplines in Science, courses in physical science and bioscience were started in 1975. Thirty five students were admitted to these courses in the academic year 1975/76. As the facilities available in the small laboratories at Vaddukoddai were grossly inadequate for work beyond the First Year Courses and future development at Vaddukoddai was not possible due to acute shortage of fresh water and space, a decision was taken to put up new Faculty buildings at Thirunelvely where the Faculty of Humanities and the administrative offices were sited.

The Faculty shifted to the Thirunelvely premises in June 1978 soon after the completion of work on the Natural Science Block (Stage 1), the foundation for which was laid on 07 May 1975. In 1977, funds were voted for a Physics building and this building came into occupation in September 1980. Funds were also voted for two other buildings in 1979, one for Chemistry and the other for Mathematics and Statistics. The Mathematics and Statistics building was completed in 1985. The Chemistry Block was completed in 1988.

The annual intake of students to the Faculty had increased over the years and it was about 250 in mid-eighties. The Faculty had on its roll over 700 students in mid-eighties. The annual intake started to decline in early nineties.

Since 2009, the Faculty is enjoying intake of students from all parts of the Island representing all ethnicity which added greater multicultural environment for the Faculty to foster and promote social harmony. Since last year the Faculty is also enjoying intake of foreign students. Moreover, the students' population at the Faculty has now reached about nine hundred.

#### 1.2.2. *Vision*

*“To be a recognised centre of science learning in Sri Lanka”.*

#### 1.2.3. *Mission*

*“To produce competent graduates who excel in learning and research in basic sciences and who could contribute to the development of the nation”.*

#### 1.2.4. *Objectives*

- To attain an internationally recognisable level of teaching and research.
- To disseminate science knowledge and popularise science.
- To improve the quality of science education.
- To provide services directed towards the environmental, social and technological needs of the region.
- To be a regional research centre in Science, developing indigenous scientific methods using local resources to improve the economic and social conditions of the local population.

#### 1.2.5. *Teaching Framework*

Instruction in each course unit may take place in the form of lectures, tutorials, discussions, practical, seminars, projects, assignments, self-study exercises and/or other forms approved by the Faculty Board of Science and the University Senate which are the authorities that decides the methods of teaching.

It is the responsibility and the duty of undergraduates to attend and participate in lectures, tutorials, practical and other work assigned to the undergraduates, to register his/her attendance by signing the attendance list, and to maintain the required percentage of attendance of 80% in each course unit. It should be noted that no undergraduate can keep away

from attending classes (i.e., lectures, tutorials etc.) for more than three consecutive days without informing and obtaining the written approval of the Head of Department. Undergraduates who are unable to attend lectures, tutorials etc., for three consecutive days or more due to illness must submit a valid medical certificate.

Strict measures will be taken by the Departments of studies to monitor the attendance of undergraduates at lectures, tutorials etc., for evaluating their performance as well as for permitting them to take the respective End of Course examinations. Therefore continued attendance at classes is essential.

## **2. Supportive Facilities for Learning and Sports**

### **2.1. The Main Library**

The University Library is situated in front of the Students Centre. It is named after Prof. S.Vithiananthan, the first Vice-Chancellor of the Jaffna University, as ‘Vithiananthan Library’. Access to this building is from the Western side of the building facing the Science Faculty. There are branch libraries in the Faculty of Agriculture, Faculty of Engineering, Faculty of Medicine, Ramanathan Academy of Fine Arts (RAFA) and the Sidha Medicine Unit.

Opening hours:

- Week days 8.30 am to 6.15 pm; Saturdays 8.30 am to 2.30 pm.
- The Library is closed on Sundays and public Holidays.

### **2.2. The Computer Unit**

This unit, located at the Library and Faculty of Science premises, serves as the provider of computer services for the whole university. It helps in the teaching of computer courses in all the Faculties and units. The unit has internet access facilities for both students and staff.

The Information Technology Resource Centre (ITRC) was established in 2004 in Level 2 of the main Vithyananthan Library to expand the IT services provided to the staff and students of the whole university. The unit has four teaching laboratories and one Internet Laboratory. The four labs have about 195 computers. The Internet lab has 40 computers. It also houses servers for running the network related services.

### 2.3. Facilities for Collaborative Learning

A Students' Hotspot is newly constructed in the space between Mathematics and Physics buildings with the assistance from the World Bank funded HETC QIG project to provide a user-friendly environment in the Faculty for students to chat or study together, exchange information and build social network.

### 2.4. The Physical Education Unit

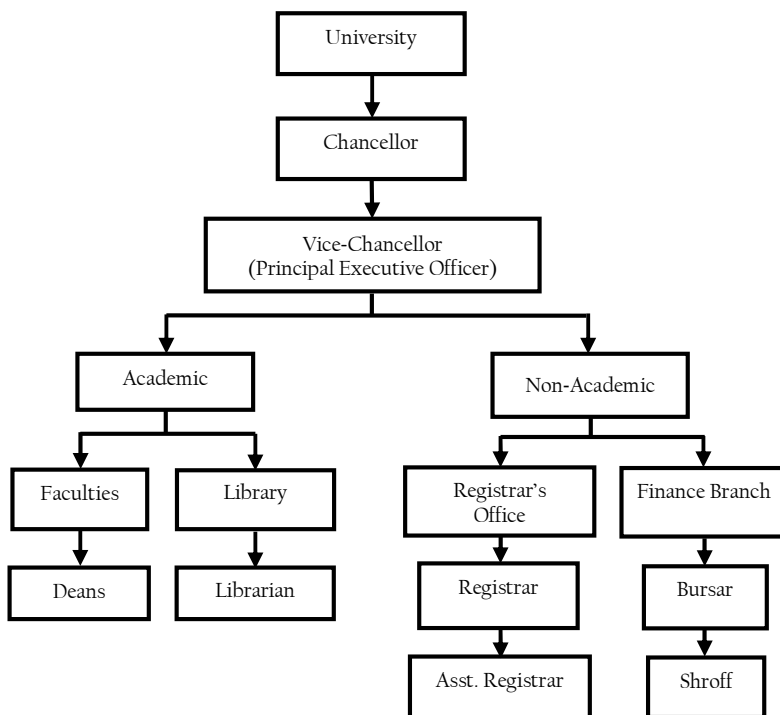
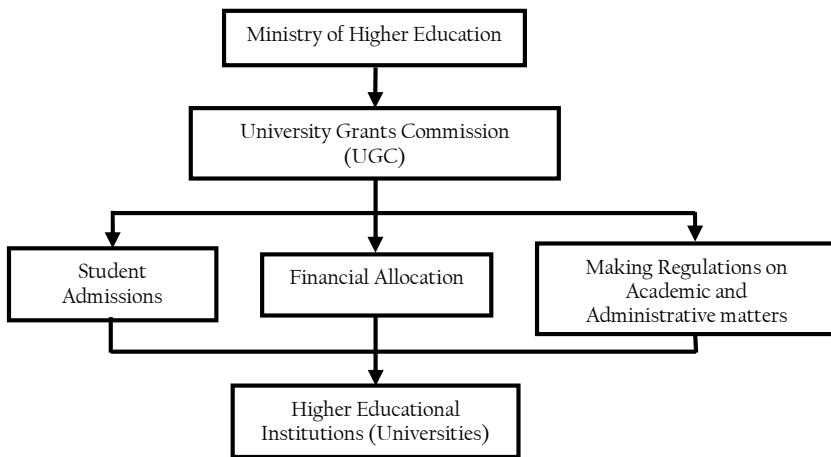
The students are encouraged to take part in Sports to keep themselves physically fit and develop sports skills. The Physical Education Unit situated behind the Medical Faculty Complex handles the following:

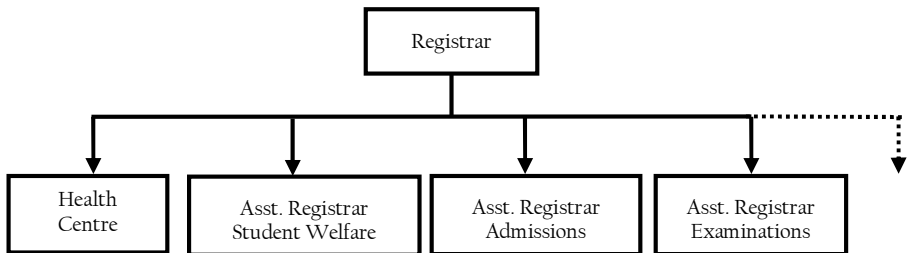
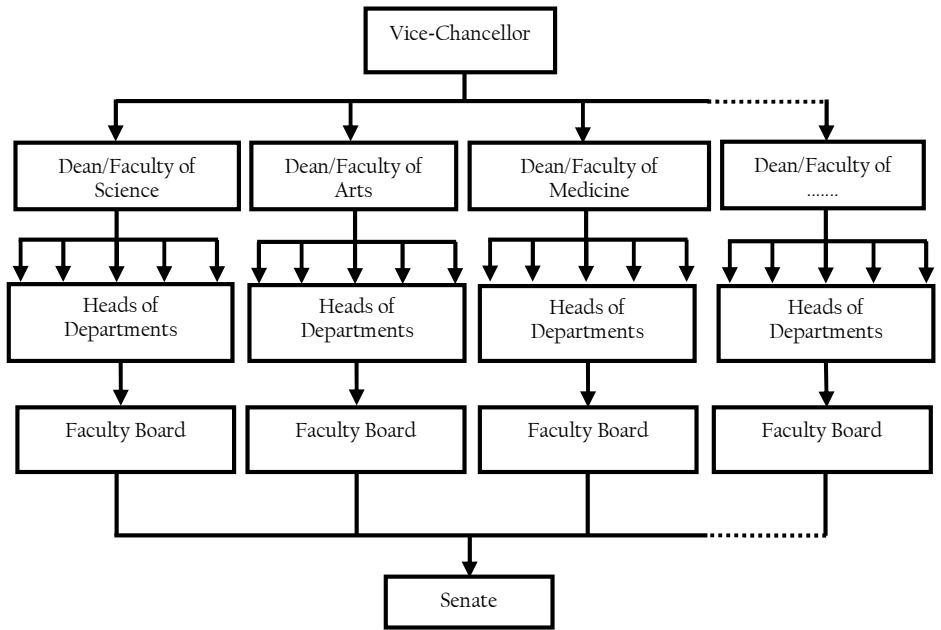
- Providing Sports facilities.
- Maintaining the sports equipment and materials.
- Facilitating friendly matches and tournaments.
- Conducting tournaments.
- Conducting colours awarding ceremony.
- Making arrangements for participation in the inter university games.
- Affiliating with outside sports associations and coordinating with them.

The Sports Complex has a large playground where Courts for Tennis, Basketball, Hockey, Cricket, Soccer, Netball, Volley ball & Elle have been set up and maintained.

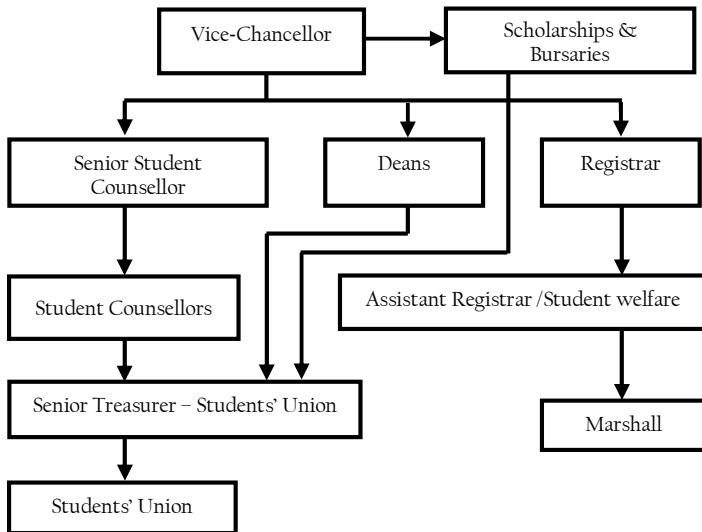
The Physical Education Unit provides about more than 26 games to the students: Athletic, Badminton, Basketball, Carom, Chess, Cricket, Elle, Gymnastic, Hockey, Karate, Netball, Rugby, Soccer, Table tennis, Volleyball, Weightlifting, etc.

### 3. Administrative Setup of the University





## Student Welfare



### 3.1. The role of the University Grants Commission and the Ministry of Higher Education

There are fifteen universities in Sri Lanka and although they are autonomous universities, the financial allocations for the universities, admission of students to the universities, rules and regulations regarding governance and staff recruitments and infrastructure and academic developments of the universities are controlled by the Ministry of Higher Education of the Government through the University Grants Commission (UGC). HE the President of Sri Lanka appoints the Chairman and members of the UGC.

### 3.2. The Chancellor and Officers of the University

- Every University has a Chancellor appointed by HE The President. The *Chancellor is the Head of the University* and chairs the Annual Convocation of that university.
- The Principal Executive Officer of a University is its *Vice-Chancellor* who is also appointed by HE the President.
- The University administration is divided into two sectors: Academic and non-academic.

- Although the Vice-Chancellor is in overall charge of both academic and non-academic matters, the *Registrar* is the Principal Executive Officer for all non-academic matters. The officer responsible for the financial sector is the *Bursar*. There are several Senior Assistants Registrars, Assistant Registrars, Senior Assistant Bursars and Assistant Bursars assisting the Vice-Chancellor/ Registrar/Bursar.

### 3.3. The Faculties and Academic Departments

There are eight Faculties in the University of Jaffna and two in the Vavuniya Campus of the University of Jaffna. They are:

1. Faculty of Agriculture (Ariviyal Nagar, Kilinochchi)
2. Faculty of Applied Sciences (Vavuniya Campus)
3. Faculty of Arts
4. Faculty of Business Studies (Vavuniya Campus)
5. Faculty of Engineering (Ariviyal Nagar, Kilinochchi)
6. Faculty of Graduate Studies
7. Faculty of Management Studies and Commerce
8. Faculty of Medicine
9. Faculty of Science
10. Faculty of Technology (Ariviyal Nagar, Kilinochchi)

Each Faculty has academic Departments of Study. The Faculty of Science, University of Jaffna has the following seven academic Departments:

1. Department of Botany
2. Department of Chemistry
3. Department of Computer Science
4. Department of Fisheries
5. Department of Mathematics and Statistics
6. Department of Physics
7. Department of Zoology

### 3.4. Administration of the Faculties

Each Department is comprised of academic staff (Senior Professors, Professors, Associate Professors, Senior Lecturers, Lecturers and Probationary Lecturers). The list of Academic Staff in the Departments of the Faculty of Science are given on Page 57.

*Heads of Departments* are appointed by the Vice-Chancellor from among the senior academic staff of the respective departments.



A *Faculty Board*, comprising of all the senior lecturers, confirmed lecturers and two representatives from the probationary lecturers of the Faculty, three members elected from among prominent persons working in disciplines related to the Faculty and two representatives of the students make recommendations/decisions regarding academic matters in the Faculty.

Each Faculty has a *Dean*, who is the Head of the Faculty concerned. The Dean is elected by the Faculty Board from among the Heads of Departments. All Faculty Board members excluding the two student representatives are eligible to vote in the election of the Dean. The Dean is the academic and administrative head of the Faculty concerned and the Chairman of the Faculty Board.

The Office of the Dean of the Faculty of Science is located on the western side of the Physics Block. Each Faculty has an Assistant Registrar to assist the Dean with Faculty administration. The names of the Dean, the Heads of Departments and the Assistant Registrar of the Faculty of Science are given on Page 55. Their contact details are given on Page 56.

The Vice-Chancellor, the Deans, the Registrar, the Bursar and the Librarian are the Principal Officers of the University. The names of the Principal Officers along with that of the Chancellor of the University are given on Page 55. Students are encouraged to seek assistance from the Office of the Dean and the Heads of Departments regarding their study programmes and appropriate subject combinations.

### **3.5. The University Senate**

The University Senate is the highest academic body of the university. All the Deans, Professors, Heads of Departments and two academics elected from each Faculty are the members of the Senate. The Vice-Chancellor is the Chairman of the Senate. All recommendations made by the Faculty Board regarding academic matters are referred to the Senate for approval.

### 3.6. Other Academic Entities

Apart from the Faculties, the University has the following academic entities:

1. Career Guidance Unit
2. English Language Teaching Unit (ELTU)
3. Centre for Open and Distance Learning (CODL)
4. Extra Mural Studies Unit
5. Human Resource Advancement Unit
6. Media Resource and Training Centre (MRTC)
7. Physical Education Unit
8. Siddha Medicine Unit
9. Workers Education Unit

### 3.7. Administrative Branches of the University

A brief account of the work carried by the different administrative organs of the university is given below:

3.7.1. *Administration Branch*: Administration branch handles many matters including postal, communication and transport services which are services relevant to the students.

3.7.2. *Establishments Branch*: The Establishments branch handles the works relating to university employees and are therefore not relevant to the students.

3.7.3. *Examinations and Admissions Branch*: Examinations and Admissions branch handles the work of students' registrations, examinations and release of results. This branch prepares the Degree certificates and maintains the academic records and register of graduates. It also issues the transcripts and details of examination results at the request of the students.

3.7.4. *Welfare Services Branch*: This branch looks after the welfare of the university students and hence one of the most important administrative organs of the university as far as the students is concerned. It handles matters such as providing accommodation to students at the university hostels and helping the students to get accommodation outside the university, providing canteen facilities, maintaining social harmony among the students, student counselling, health services and the matters relating to student discipline in the university. It also handles the work relating to the Vice-Chancellor's Fund, the Mahapola, and Bursaries etc.

3.7.5. *Academic and Publication Branch*: The Academic branch engages itself with the working relating to the Senate meetings, publication of annual reports, books, etc., making arrangements for the convocation and handling the endowments for scholarships, prizes and Gold Medals.

3.7.6. *Finance Branch*: The Finance Branch handles all the financial matters including purchases and supplies.

3.7.7. *Planning and Maintenance Branch*: This branch is responsible for utilities such as Water and Electricity Supply, maintenance of buildings and structures etc.

3.7.8. *Security Department*: This Department headed by a Chief Security Officer (CSO) has more than fifty security personnel to protect the properties of the university and give security to the university community.

#### 4. The Structure of the Bachelor Degree Programmes in the Faculty of Science, University of Jaffna

Academic Programmes of the Faculty of Science, University of Jaffna operates on a modularized credit valued, semester based course unit system.

##### 4.1. Programme Structure

###### 4.1.1. Admission to Bachelor Degree Programmes

Students are admitted by the University Grants Commission under the Physical and Biological Science streams. Students are also admitted to the Faculty directly for a four year Degree Programme in Computer Science.

###### 4.1.2. Degrees

The Faculty offers Degrees in Physical and Biological Sciences of four years duration with an exit point at the end of the third year.

The different types of four year degree programmes that are offered at present are as follows:

- (i). B.Sc. (Special) Degree
- (ii). B.Sc. (Subject Specific) Degree
- (iii). B.Sc. (Applied Science) Degree

The Selection to Special Degree courses (programme (i)) is made at the end of the second year of study. The Selection to Applied Science Degree courses (programme (iii)) is made at the end of the third year of study. Programme (ii) covers one or more subjects including components offered by different departments in the Faculty of Science as well as departments in other Faculties.

At present two Subject Specific Degrees are offered. One is *B.Sc. in Science and Education*. It is offered by the Faculty of Science with the assistance and participation of the Department of Education, Faculty of Arts of the University. The selection to this Degree programme is done at the end of the second year of study.

The other subject specific degree is the *B.Sc. in Computer Science*. Students are admitted directly by the UGC for the subject specific degree B.Sc. in Computer Science of four years duration.

An exit at the end of the third year of study is possible in the degree programmes (i) and (ii). Students, other than those admitted by the UGC directly for the subject specific degree B.Sc. in Computer Science, exiting a four year degree programme at the end of the third year and students not admitted to any of the four year degree programmes will be awarded a *B.Sc. (General Degree)* if they satisfy the stipulated conditions.

Students admitted to the *Bachelor of Science in Computer Science* degree by the UGC directly for the Subject Specific Degree B.Sc. in Computer Science may exit at the end of the third year and they will be awarded a *Bachelor of Computer Science* degree if they satisfy the stipulated conditions.

#### 4.1.3. Names of the Degrees

The four year degrees are named according to the type of the programmes and the subjects that are supplicated.

4.1.3.1. *Special Degrees*: These programmes would involve specialisation in one single Principal Subject. The Special Degrees are named according to the subjects that are supplicated. The name of the Degree shall be B.Sc. (Special) Degree in 'X'.

E.g.: B. Sc. (Special) Degree in Chemistry

4.1.3.2. *Subject Specific Degrees*: These programmes would cover one or more subjects including components offered by different departments of study. The name of the Degree shall be B.Sc. Degree in 'X' or B.Sc. Degree in 'X' and 'Y'.

E.g.: B.Sc. Degree in Computer Science  
 B.Sc. Degree in Science and Education

4.1.3.3. *Applied Science Degrees*: These programmes would enable the General Degree students who have followed Bachelor of Science Degree programmes to enhance their job opportunities by offering an extended year of applied science oriented courses. The name of the Degree shall be B.Sc. (Applied Science) Degree in 'X'.

E.g.: Bachelor of Science in Applied Science in Biology  
 Bachelor of Science in Applied Science in Computing

A list of four year courses offered by the Faculty of Science at present is given below:

#### Special Degree courses in Principal subjects

No.	Name of the Degree	Abbreviation
1.	Bachelor of Science (Special) Degree in Chemistry	B.Sc. (Special) Degree in Chemistry
2.	Bachelor of Science (Special) Degree in Computer Science	B.Sc. (Special) Degree in Computer Science
3.	Bachelor of Science (Special) Degree in Mathematics	B.Sc. (Special) Degree in Mathematics
4.	Bachelor of Science (Special) Degree in Physics	B.Sc. (Special) Degree in Physics
5.	Bachelor of Science (Special) Degree in Botany	B.Sc. (Special) Degree in Botany
6.	Bachelor of Science (Special) Degree in Statistics	B.Sc. (Special) Degree in Statistics
7.	Bachelor of Science (Special) Degree in Zoology	B.Sc. (Special) Degree in Zoology
8.	Bachelor of Science (Special) Degree in Fisheries Science	B.Sc. (Special) Degree in Fisheries Science

#### Subject Specific Degree courses

No.	Name of the Degree	Abbreviation
1.	Bachelor of Science Degree in Computer Science	B.Sc. in Computer Science
2.	Bachelor of Science Degree in Science and Education	B.Sc. in Science and Education

## Applied Science Degree courses

No.	Name of the Degree	Abbreviation
1.	Bachelor of Science in Applied Science in Biology	BSc (Applied Science) (Biology)
2.	Bachelor of Science in Applied Science in Botany	BSc (Applied Science) (Botany)
3.	Bachelor of Science in Applied Science in Chemistry	BSc (Applied Science) (Chemistry)
4.	Bachelor of Science in Applied Science in Computing	BSc (Applied Science) (Computing)
5.	Bachelor of Science in Applied Science in Physics	BSc (Applied Science) (Physics)
6.	Bachelor of Science in Applied Science in Financial Mathematics and Industrial Statistics	BSc (Applied Science) (Financial Mathematics and Industrial Statistics)
7.	Bachelor of Science in Applied Science in Zoology	BSc (Applied Science) (Zoology)

### The name of the three year degrees:

This degree programme is offered for the following category of students:

- students opting for a three year degree.
- students following a four year degree programme who opt to exit at the end of the third year.
- students who have failed to gain admission to four year degree programmes.

The name of the three year degrees shall be *B.Sc. (General) Degree*.

**Note:** If a student admitted by the UGC directly for the B.Sc. in Computer Science course of four years duration opt to exit at the end of the third year, the name of the degree he/she will be awarded is *Bachelor of Computer Science Degree*.

#### 4.1.4. Academic year

An Academic year consists of two semesters, Semester 1 and Semester 2. The duration of a Semester is 15 weeks.

#### 4.1.5. Credit valued course unit system

A *course unit* is a subject module that has a credit value. A *credit* is a time based quantitative measure assigned to course units on the basis of number of contact hours and is defined in Section 4.1.6. The performance of students in the course units are divided into a sequence of sub-ranges designated by symbols called Grades (see Section 4.4.3.) and each Grade

is assigned a *Grade Point Value* (GPV). *Grade Point Average* (GPA) is defined in Section 4.4.4. The credit rating of course units offered by the Faculty may vary from one credit (minimum) to eight credits (maximum). The course units are organised at the following levels:

- Level 1G (General Degree Level)----- First year
- Level 1S (Subject Specific Degree Level) ----- First year
- Level 2G (General Degree Level) ----- Second year
- Level 2S (Subject Specific Degree Level) ----- Second year
- Level 3G (General Degree Level) ----- Third year
- Level 3S (Subject Specific Degree Level)----- Third year
- Level 3M (Special Degree Level)----- Third year
- Level 4S (Subject Specific Degree Level) ----- Fourth year
- Level 4M (Special Degree Level) ----- Fourth year
- Level 4X (Extended Degree Level) ----- Fourth year

The abbreviations G, M, S and X refer to course units at the General Degree, Special Degree, Subject Specific Degree, and Applied Science Degree, respectively. The Auxiliary/ Enhancement course units which are defined in Section 4.1.7.1 form a part of the General Degree course units and are abbreviated by “G” as well. There could be overlapping between the course units of Levels 3M, 3S, 4M, 4S and 4X.

#### 4.1.6. Definition of a credit

- For course units consisting of theory only, 15 hours of lectures and tutorials is equivalent to one credit.
- For course units involving laboratory work, 15 practical sessions each of two to three hours duration is equivalent to one credit.
- The credit values of courses that have both theory and practical components are calculated by giving due weightage to the components accordingly, as stipulated above.
- For course units involving field work, the assigned credit value shall be given in the approved syllabi.
- For Research Projects of one semester duration the assigned credit value should be at least 6.

#### 4.1.7. The Subject Areas

The course units are derived from the following categories:

- (a) Auxiliary and Enhancement subject areas.
- (b) Principal subject areas.
- (c) Supplementary subject areas.
- (d) Subject specific areas.
- (e) Common mandatory courses.
- (f) Inter-Faculty subject areas.

Credits earned in all course units, excluding the Auxiliary course units shall be considered in computing GPAs (Please see Section 4.4.4 for the definition of the GPA). However, obtaining a minimum grade in the Auxiliary Course Units shall be a requirement for the award of a degree.

4.1.7.1. *Auxiliary and Enhancement Subject Areas:* The Auxiliary and Enhancement Course units are designed to provide basic knowledge on a wide-range of disciplines that an undergraduate should possess in the present era.

The Auxiliary Course Units are treated as non-credit valued course units as they are not taken for the computation of the GPA. The Enhancement course units are credit valued and taken for the computation of the GPA. However all the auxiliary course units shall be evaluated and considered for the award of degrees. The Auxiliary Course Units offered and the Letter Codes assigned to them are given in the following table:

Topics in Auxiliary Courses	Letter Code
English Language	ENG
Social Harmony and Active Citizenship	SHA
Management and Entrepreneurial Skills	MES
Career Guidance	CAG
Communication Skills	CSK

The Enhancement Course Units offered and the Letter Codes assigned to them are given in the following table:

Topics in Enhancement Courses	Letter Code
Computer Literacy	COM
Mathematics for Biological Science students	MBS
Biology for Physical Science students	BPS
Science and Society	SAS



4.1.7.2. *Principal Subject Areas*: The Faculty, at present, offers courses in ten Principal Subject areas. The subjects offered and the Letter Codes assigned to them are given in the following table:

Principal Subject	Letter Code
Applied Mathematics	AMM
Botany	BOA
Chemistry	CHE
Computer Science	CSC
Fisheries Science	FIS
Mathematics	MMT
Physics	PHY
Pure Mathematics	PMM
Statistics	STA
Zoology	ZOL

- Note:** (a) Students who have offered Pure Mathematics and Applied Mathematics as Principal subjects in Levels 1G and 2G only could be admitted for the Special Degree programme in Mathematics.
- (b) Courses in Mathematics are offered at Levels 3M and 4M only.
- (c) Students who have offered Statistics and Pure Mathematics as Principal subjects in Levels 1G and 2G only could be admitted for the Special Degree programme in Statistics.

4.1.7.3. *Supplementary Subject areas*: The Faculty offers courses in many supplementary subject areas depending on the availability of resources, and the courses offered may change from year to year.

The Supplementary Subject Areas offered at present and their corresponding Letter Codes are listed in the following table:

Supplementary Subject area	Letter Code
Basic Computing	BAC
Biotechnology	BTE
Biomathematics and Statistics	BMS
Electronics	ELE
Environmental Science	ENS
Food Science & Nutrition	FSN

4.1.7.4. *Subject Specific Areas*: At present the Faculty offers only two courses in Subject Specific area. Those are in Direct Intake Computer Science and Science and Education. The B.Sc. Degree in Science and Education is conducted with the assistance of staff from the Department of Education of the Faculty of Arts.

4.1.7.5. *Common mandatory courses*: The common mandatory courses will be offered at the beginning of Level 4X. The letter code for Applied Science is APS.

4.1.7.6. *Inter Faculty Subject Areas*: The students with the prior approval of the Faculty Board of Science may also select course units offered by another Faculty of this University, if the timetable permits. For example course units in Management from the Faculty of Management Studies and Commerce or Course units in Economics from the Faculty of Arts.

#### 4.1.8. Classification of Course Units, Course Codes and the Syllabi

4.1.8.1. *Classification of Course Units*: All the course units other than Auxiliary Course units are classified into two; namely,

- Core (C) course units
- Elective (E) course units

*Core course units* of a Principal Subject / Subject Specific Area are considered as essential core of the subject and the students would be required to select all the core course units of two or three Principal Subjects (see Section 4.2).

The *Elective course units* of a Principal Subject are course units outside the core course units of that Principal Subject and are subject modules offered in addition to the core course units to provide broader knowledge of the subject.

The credit value of all the core course units in a *Principal Subject* and the minimum credit value of the Elective Course units offered in that Principal Subject at different levels 1G, 2G, 3G, and 3M are given in the following table:

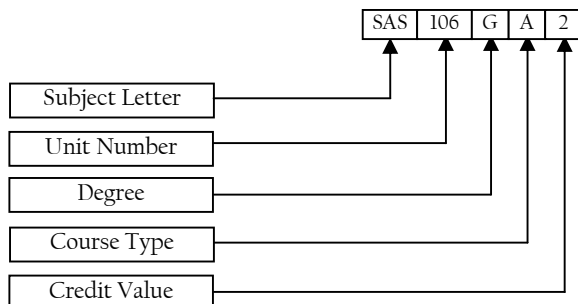
Credit Value of a Principal Subject		
Level	Total Credit Value of Core Course Units	Minimum Credit Value of the Elective Course Units
1G	8	0
2G	8	4
3G	8	4
3M	16	0

Levels 4S/M/X course units would be selected in consultation with the respective Head of the Department. The course units offered in Supplementary Subject areas and Inter-Faculty Subject areas are also treated as Elective.

4.1.8.2. *The Course Codes:* A three-letter prefix, followed by a three-digit number, followed by two letters and a single digit is used to identify the course units offered.

- The first three letters indicate the Letter Code of the Subject/Subject Area.
- The first digit of the three-digit number indicates the level (1, 2, 3 or 4) at which the course unit is given.
- The other two digits is the identification number assigned to that particular course unit.
- The first letter of the two-letters that follow the three digit number indicates whether the course unit is a unit at General (G), Special (M), Subject Specific (S), or Extended (X) degree programme.
- The second letter of the two letters that follow the three digit number indicate whether the course is Auxiliary/Enhancement (A), Core (C), Elective (E), or Mandatory (M).
- The last digit indicates the credit value of the course unit.

The Course Codes and the titles of all course units offered by the Faculty with their credit values at all levels are given in Annexure A1 to A12 (Pages 36 – 54).



4.1.8.3. *Syllabi of the Course Units:* The objectives, syllabus and the method of evaluation of each course unit available at the various levels are given in the Faculty publication named “Structure and Syllabi of the Bachelor Degree Programmes” which is made available in the Main (Vithiananthan) Library, the Departmental Libraries and the website of the Faculty of Science.

#### 4.1.9. Medium of Instruction

The medium of instruction is only English.

#### 4.1.10. Selection of Course Units at various levels and Registration

4.1.10.1. *Level 1G* (First Year): Students in the First year of study shall register for three Principal Subjects and relevant Auxiliary/ Enhancement course units stipulated in Section 4.2.1. The allowed subject combinations from Principal subject areas are given in the following table:

Allowed Subject Combinations – Level 1G

Serial No.	Principal Subject		
	1	2	3
1.	Botany	Zoology	Chemistry
2.	Botany	Zoology	Fisheries
3.	Botany	Chemistry	Fisheries
4.	Chemistry	Zoology	Fisheries
5.	Pure Maths	Applied Maths	Statistics
6.	Pure Maths	Applied Maths	Computer Science
7.	Pure Maths	Applied Maths	Physics
8.	Pure Maths	Applied Maths	Chemistry
9.	Statistics	Pure Maths	Chemistry
10.	Statistics	Pure Maths	Computer Science
11.	Statistics	Applied Maths	Chemistry
12.	Statistics	Applied Maths	Physics
13.	Computer Science	Pure Maths	Physics
14.	Computer Science	Applied Maths	Physics
15.	Computer Science	Applied Maths	Chemistry
16.	Pure Maths	Physics	Statistics
17.	Chemistry	Computer Science	Pure Maths
18.	Chemistry	Computer Science	Statistics

There may be a limit on the number of students who could be admitted to a particular subject or subject combination. At such instances the admission to those subjects or subject combinations will be made on merit and will be based on G.C.E. (A/L) performance.

Academic Advisors appointed by the Faculty Board of Science will help the students in selecting the subject combinations judiciously. Students will be allowed to change a registered subject combination *only within the first two weeks* of the commencement of the first semester.

4.1.10.2. *Level 1S (First Year)*: Students admitted by the UGC directly for the Subject Specific Degree B.Sc. in Computer Science shall register for all Principal Subjects of Computer Science and relevant Auxiliary or Enhancement course units stipulated in Section 4.2.1.

4.1.10.3. *Level 2G (Second Year)*: Students in the Second year (Level 2G) shall register at the beginning of an academic year for course units in two or three Principal Subjects, Supplementary Subject Areas and Inter-Faculty Subject Areas, if any, and the relevant Auxiliary/Enhancement subject areas stipulated in Section 4.2.2. The total number of credits of the registered course units of the level shall not be less or greater than the number stipulated for the level (Please see the Table in Page 24 for details). There will be a minimum and a maximum number of students who could be accommodated to a given course. The departments decide on this number based on the availability of resources.

4.1.10.4. *Level 2S (Second Year)*: Students admitted by the UGC directly for the Subject Specific Degree B.Sc. in Computer Science in their Second year (Level 2S) shall register at the beginning of the academic year for all core course units (aggregating to twenty six credits) and elective course units (aggregating to six credits) in Computer Science at Level 2S and the relevant Auxiliary/Enhancement subject areas stipulated in Section 4.2.2.

4.1.10.5. *Level 3G, 3M, 3S (Third Year)*: Applications for Special, Joint Major and Subject Specific programmes (other than the B.Sc. in Computer Science programme for which students are admitted directly by the UGC) shall be invited at the beginning of the third year of studies. The admission to these programmes is based on the performance of the applicants in the course units of Levels 1G and 2G and the availability of places.

*Special Degree Programmes are offered in the following Principal subjects:*

- Botany,
- Chemistry,
- Computer Science,
- Fisheries Science,
- Mathematics,
- Physics,
- Statistics, and
- Zoology.

*Subject Specific Degree Programmes are offered in identified special areas. At present it is offered in*

- Computer Science and
- Science and Education

This list shall be updated subject to the availability of resources.

4.1.10.6. *Level 4M, 4S, and 4X (Fourth Year):* Students in Level 3M shall proceed to Level 4M whereas students in Level 3S shall proceed to Level 4S by registering to the appropriate course units at the beginning of the fourth year.

Once the selection for Level 4X is made at the end of the Level 3G; students shall be requested to register for Level 4X course units amounting to 30 credits.

The minimum requirements for admission to four year degree programmes are given in Section 4.3.

## 4.2. Credit Requirements

Students will be evaluated in all registered course units including those in auxiliary subject areas but only the credits earned in the credit-valued course units (i.e., excluding the Auxiliary Course units) shall be considered for the calculation of GPA (please see Section 4.4.4 for the definition of GPA).

The minimum credit requirements for a three year degree shall be ninety (90) and for four year degrees one hundred and twenty (120).

Students proceeding to the fourth year of study must have offered course units aggregating to at least ninety credits (90) and all the stipulated Auxiliary Course units during the first three years.

In each semester, a student should offer course units aggregating to at least ten credits.

The **minimum/maximum** aggregate of the credits of the credit valued course units (i.e., All course units other than Auxiliary Course units) that shall be followed at the various levels in a General / Special and Subject Specific Degree programmes are given in the following table:

Degree	Number of Credits									
	Level 1G/1S		Level 2G/2S		Level 3G		Level 3M/3S		Level 4M/4S/4X	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
General degree	30	30	28	32	28	32	-	-	-	-
Special degree (Computer Science)	30	30	32	32	10	12	18	18	30	32
Special degree (Mathematics)	30	30	28	32	16	16	16	16	30	33
Special degree (other than Computer Science and Mathematics)	30	30	28	32	16	16	16	16	30	33
Subject Specific degree (Computer Science – Direct Intake)	30	30	32	32	-	-	28	28	30	32
Subject Specific degrees (other than Computer Science)	30	30	28	32	16	20	12	16	30	33
Applied Science degree	30	30	28	32	28	32	-	-	30	33

The details of the course units to be followed at each level of the various degree programmes are given in the following sections.

#### 4.2.1. Course Units Offered in Level 1

In Level 1G, the students offer Level 1G credit valued course units aggregating to **thirty** credits and the two auxiliary course units listed below. Only the thirty credits earned in the credit valued course units shall be used to compute the overall or any other GPA.

The students offer the following:

- a). Two *Auxiliary course units*:
  - (i). English Language.
  - (ii). Social Harmony and Active Citizenship.
- b). *Enhancement course units* aggregating to **six** credits:
  - (i). Course unit in either Mathematics for Biological Science students or Biology for Physical Science students having a credit value two.
  - (ii). Course unit in Science and Society having a credit value two.
  - (iii). Course unit in Computer Literacy having credit value two.
- c). All Level 1G core course units in **three** Principal subjects (the allowed subject combinations are given on Page 21) aggregating to **twenty four** credits.

In Level 1S, Direct Intake Computer Science students admitted by the UGC directly for the Subject Specific Degree B.Sc. in Computer Science in their First year shall follow all Level 1S Course Units in Computer Science (aggregating to **twenty four credits**), the two Auxiliary course units and the three Enhancement Course Units (aggregating to **six credits**) listed above.

#### 4.2.2. Course Units offered in Level 2

In Level 2G, all students offer Level 2G credit valued course units aggregating to a minimum of **twenty eight** credits and a maximum of **thirty two** credits. Only the twenty eight to thirty two credits earned in credit-valued course units shall be used to compute the overall or any other GPA. They also follow the two auxiliary course units listed below.

The students offer:

- a). Level 2G Auxiliary course unit in English Language.
- b). An Auxiliary course unit in Career Guidance.
- c). Either all Level 2G core course units (eight credits) of each of **three** Principal subjects **or** all Level 2G core course units (eight credits) and elective course units aggregating to four credits in each of **two** principal subjects so that the total number of credits earned is **twenty four**.
- d). Course units whose credit value aggregate between **four and eight** credits by offering course units from the remaining core / elective course units of the Principal Subject(s) offered and/or the list of Supplementary course units available for Level 2G or approved Inter-Faculty course units.

All Principal Subjects must be chosen from the ones offered in Level 1G.

**Note:** Students who aspire to do a Special Degree in Computer Science should offer Level 2G course units aggregating to a total number of **thirty two** credits.

In Level 2S, Direct Intake Computer Science students admitted by the UGC directly for the Subject Specific Degree B.Sc. in Computer Science offer credit valued course units aggregating to a minimum of **thirty two** credits and a maximum of **thirty four** credits.



The students offer:

- a). Level 2S Core course units in Computer Science (aggregating to **twenty six credits**).
- b). Level 2S Elective course units (aggregating to **six credits**).
- c). Level 2G Auxiliary course unit in English Language.
- d). An Auxiliary course unit in Career Guidance.

#### 4.2.3. Course Units offered in Level 3G/3S

In Level 3G, the students offer Level 3G credit valued course units aggregating to a minimum of **twenty eight** credits and a maximum of **thirty two** credits. They also follow the three auxiliary course units listed below. Only the twenty eight to thirty two credits earned in credit-valued course units shall be used to compute the overall or any other GPA.

The students offer:

- a). An Auxiliary course unit in Management and Entrepreneurial skills.
- b). An Auxiliary course unit in Communication Skills.
- c). An Auxiliary course unit in Career Guidance.
- d). Either all Level 3G core course units (eight credits) of each of **three** Principal Subjects or all Level 3G core course units (eight credits) and elective course units aggregating to four credits in each of **two** Principal Subjects offered at level 2G so that the total number of credits earned is **twenty four**.
- e). Course units whose credit value aggregate between **four and eight** credits by offering course units from the remaining core / elective course units in the Principal Subjects and/or the list of Supplementary course units available for Level 3G or approved Inter-Faculty course units.

In Level 3S, **Direct Intake Computer Science** students admitted by the UGC directly for the Subject Specific Degree B.Sc. in Computer Science offer credit valued course units aggregating to a total of **twenty eight** credits in addition to three non-credit valued Auxiliary course units of Level 3G.

The students offer:

- a). An Auxiliary course unit in Management & Entrepreneurial skills.
- b). An Auxiliary course unit in Communication Skills.
- c). An Auxiliary course unit in Career Guidance.

In Level 3S, all students **other than Direct Intake Computer Science** students offer course units aggregating to **thirty-two** credits in credit valued course units. They also follow the three auxiliary course units listed below. Only the twenty eight to thirty two credits earned in the credit-valued course units shall be used to compute the overall or any other GPA.

The students offer:

- a). An Auxiliary course unit in Management & Entrepreneurial skills.
- b). An Auxiliary course unit in Communication Skills.
- c). An Auxiliary course unit in Career Guidance.
- d). Level 3G Course units aggregating to a minimum of **sixteen** and a maximum of **twenty** from among the Principal Subjects offered in Level 2G and specified as compulsory for the specific subject.
- e). Level 3S Course units aggregating to a minimum of **twelve** and a maximum of **sixteen** credits.

#### 4.2.4. Course Units offered in Level 3M

In Level 3M, for special degree in subjects **other than Computer Science** students offer course units aggregating to **thirty-two** credits in credit valued course units choosing course units from Level 3G aggregating to **sixteen credits** and course units from Level 3M/4M aggregating to **sixteen credits** in the subject of specialisation. They also follow the three auxiliary course units listed in the previous section. Only the thirty two credits earned in the credit-valued course units shall be used to compute the overall or any other GPA.

In Level 3M, for special degree in subjects **other than Computer Science and Mathematics** students offer:

- a). An Auxiliary course unit in Management and Entrepreneurial skills.
- b). An Auxiliary course unit in Communication Skills.
- c). An Auxiliary course unit in Career Guidance.
- d). Level 3G Core course units aggregating to **eight** credits and elective course units aggregating to **four** credits in the subject of specialisation.
- e). Level 3G Course units aggregating to **four** credits from other Principal Subject(s) in consultation with the department of the subject of specialization and
- f). Course units chosen from Level 3M in the subject of specialisation aggregating to **sixteen** credits.

In Level 3M, for special degree in Computer Science students offer:

- a). An Auxiliary course unit in Management and Entrepreneurial skills.
- b). An Auxiliary course unit in Communication Skills.
- c). An Auxiliary course unit in Career Guidance.
- d). Level 3G Core course units in Computer Science aggregating to **eight** credits and elective course units aggregating to **two** credits in the subject of specialisation.
- e). Course units chosen from Level 3M in Computer Science aggregating to **eighteen** credits.

In Level 3M, for special degree in Mathematics students offer:

- a). An Auxiliary course unit in Management and Entrepreneurial skills.
- b). An Auxiliary course unit in Communication Skills.
- c). An Auxiliary course unit in Career Guidance.
- d). Level 3G Core course units aggregating to **eight** credits in **each** of the subjects Pure Mathematics and Applied Mathematics.
- e). Course units chosen from Level 3M/4M in Mathematics aggregating to **sixteen** credits.

#### 4.2.5. Course Units offered in Level 4S

In Level 4S, all students offer Level 4S course units aggregating between **thirty** and **thirty three** credits by choosing all the compulsory course units specified in the approved syllabi. All the course units offered by a student shall be used to compute the overall or any other GPA of that student.

#### 4.2.6. Course Units offered in Level 4M

The students other than Computer Science offer course units chosen from the course units of Level 3M/4M such that the total credit values of Level 3M and 4M course units offered in the third and fourth year aggregates between **forty six** and **forty nine**. Students in Computer Science offer course units chosen from the course units of Level 3M/4M such that the total credit values of Level 3M and 4M course units offered in the third and fourth year aggregates to **forty eight**. The course units offered should include all the core course units of Levels 3M and 4M. All the course units offered by a student shall be used to compute the overall or any other GPA of that student.

#### 4.2.7. Course Units offered in Level 4X

The students offer course units chosen from the course units of Level 4X such that the total credit aggregates to **thirty** credits specified by the respective Head of the Department.

#### 4.3. Selection to Four Year Degree Programmes

4.3.1. The minimum requirement for selection to **Special Degree programmes other than Mathematics** is as follows:

- a). Have obtained at least Grade B in Level 1G and Level 2G course units aggregating to **eight** credits, in the subject of specialisation. Of these eight credits, at least six should be earned in core course units.
- b). Have obtained a GPA of not less than 2.50 calculated for the course units in the subject of specialisation at levels 1G and 2G.
- c). Have obtained a GPA of not less than 2.25 calculated for all the course units of Levels 1G and 2G.

4.3.2. The minimum requirement for selection to **Special Degree programme in Mathematics** is as follows:

- a). Have obtained at least Grade B in Levels 1G and 2G course units aggregating to **sixteen** credits in Pure Mathematics and Applied Mathematics.
- b). Have obtained a GPA of not less than 2.50 calculated for the course units in Pure Mathematics and Applied Mathematics of Levels 1G and 2G.
- c). Have obtained a GPA of not less than 2.25 calculated for all the course units of Levels 1G and 2G.

4.3.3. The minimum requirement for selection to the **B.Sc Subject specific Degree Programmes other than Computer Science (Direct Intake) Programme** is as follows:

- a). Have obtained a GPA of not less than 2.50 calculated for the course units of Levels 1G and 2G in the two subjects that form the basis to the subject specific degree.
- b). Have obtained a GPA of not less than 2.25 calculated for all the course units of Levels 1G and 2G.

4.3.4. The minimum requirement for selection to the B.Sc Degree in Computer Science (Direct Intake) Programme is as follows:

- a). Have obtained a minimum GPA of not less than 2.50 calculated for all the course units of Levels 1S and 2S.

4.3.5. The Applied Science degree programme will be offered to a restricted number of students based on the availability of the placements in Industries. Selection of students for different degree programmes shall be made at the end of third year among the students admitted to the General Degree programme. Students who are selected to read for a special degree (Level M) at the end of second year shall not be allowed to follow Level 4X. The selection shall be based on merit and the following:

- a). Principal subjects offered in Levels 2G and 3G
- b). GPA not less than 2.25 calculated in the course units in Level 1G and Level 2G amounting to at least 60 credits and course units offered in the first semester of Level 3G [With held (WH) results will be treated as of Grade E for this purpose].

#### 4.4. Evaluation Procedures and Examinations

A course unit shall be evaluated by means of:

- a). An in-course assessment (ICA) consisting of suitable combinations of assignments, reports, oral presentations, oral examinations, quizzes, Spot examinations in Practical, continuous assessment, in-course assessment examinations, etc., and
- b). An end of course examination (ECE).

The method of evaluation of each course unit is given along with the syllabus in the Faculty publication named “Structure and Syllabi of the Bachelor Degree Programmes” copies of which are made available in the Main (Vithiananthan) Library and the Departmental Libraries for reference.

The performance of a student in English as a Second Language shall be calculated by giving a weight of one for ENG101GA0 and three for ENG201GA0. The marks thus obtained will be graded according to a grading system decided by the Faculty Level Examination Board.

For those course units in Botany and Zoology which have a practical component, students should obtain at least a D<sup>+</sup> Grade in each of the theory component and the practical component to secure any grade higher than 'E'.

#### **4.4.1. In-Course Assessments**

All in-course assessments of any course unit (assignments, reports, oral presentations, quizzes, Spot examinations in Practical, continuous assessments, in-course assessment examination) shall be carried out during the period of that course unit.

In-course assessments of course units shall be carried out at the dates and times determined by the Office of the Dean in consultation with the department offering that course unit. The Head of the Department concerned is responsible for the marks awarded to all components of the in-course assessment of course units offered by the respective department.

The marks scored by a student in the various components of the in-course assessment of any course unit shall be displayed in the Notice Board of that department by the Head of that department.

#### **4.4.2. End of Course Examinations**

An end of course examination shall be conducted for each course unit at the end of the course or at the end of the semester in which the teaching of the course is completed. The end of course examinations shall be conducted by the Examination Branch of the University. The date and time of the end of course examinations shall be decided at the beginning of each semester by the Dean in consultation with the Heads of Departments. An Examination Board of the Faculty constituted for each course unit shall finalise the results of that course unit.

The *Grades* obtained by the students in the end of course examination and the overall Grades obtained by the students for that particular course shall be displayed by the Head of the Department concerned after ratification by the Examination Board. The Dean shall send Grades List to the Examination Branch.

When the results of the examinations on all the course units of a particular Level of an academic year are received by the Examination Branch, the Examination Branch will summon a meeting of the Examination Board chaired by the Vice-Chancellor. The Board will release the overall performance of the students in that Level of that academic year giving the GPA scored by the students in that Level. The Board shall also release the overall GPA scored by the students up to that Level. The Examination Board chaired by the Vice-Chancellor will also release the overall GPA and the Class of Honours obtained by the students who have completed that course of study in that academic year.

#### 4.4.3. Grading System

Performance of students in respect of a course unit is graded according to the following grading system. A Grade Point Value (GPV) as indicated in the following table is assigned to each grade:

Grade	GPV
A <sup>+</sup>	4.00
A	4.00
A <sup>-</sup>	3.70
B <sup>+</sup>	3.30
B	3.00
B <sup>-</sup>	2.70
C <sup>+</sup>	2.30
C	2.00
C <sup>-</sup>	1.70
D <sup>+</sup>	1.30
D	1.00
E	0.00

#### 4.4.4. Grade Point Average (GPA)

During the study period, a student accumulates grade points from various courses offered. From the grade points accumulated, a Grade Point Average (GPA) may be calculated at any stage: for a level or more or for a subject or more as may be necessary. The GPA is calculated using the formula

$$\text{GPA} = \frac{\sum c_n g_n}{\sum c_n}$$

where  $c_n$  and  $g_n$  are the credit value and the grade point value respectively of the  $n^{\text{th}}$  course unit. Any calculated GPA shall be rounded to the second decimal place.

#### 4.4.5. Attendance

Attendance at 80% of the lectures and practical classes is compulsory. Absence on medical grounds must have the recommendation of the University Medical Officer. Absence due to medical grounds or any other valid reason should be approved by the Faculty Board and the Senate.

#### 4.4.6. Repeating Examinations

- No student will be allowed to repeat In-Course Assessments of any Course Unit. If a student is unable to sit for an In-Course Assessment examination for valid reasons he/she shall inform the Head of the Department concerned within three days of the date of resumption of attending the classes. If the reasoning is acceptable to the Head of the Department, the particular In-Course Assessment could be conducted on a different date determined by the Head of the Department. However no such opportunity shall be given after the completion of the End of Course Examination of that particular course unit.
- A student shall take the end of course examination of a course unit at the first available opportunity. If a student fails to sit an end of course examination without giving valid reasons acceptable to the Faculty Board of Science and the Senate, he/she shall be considered to have forfeited a chance to sit that examination and will be given the grade E for the end of course examination of that course unit.
- A student whose attendance is satisfactory, but obtains a grade B' or below for a course unit may re-sit the end of course examination of that course unit in order to improve his/her grade.
  - a). If a student obtains a lower grade while repeating, he/she is entitled to keep the previous grade.
  - b). The highest grade that could be awarded for a repeated course unit is B.
  - c). A student will not be allowed to repeat a course unit more than two times.
  - d). The maximum period allowed for completing the three year degrees shall be 10 semesters (five academic years) and the four year degrees shall be 12 semesters (six academic years). Students are allowed to repeat examinations only within this period.



This would exclude periods of absence caused by medical or other valid reasons acceptable to the Faculty Board and the Senate.

e). At the end of each level of study, accumulated GPA of a student should be greater than 1.75 to progress to the next level.

- For students repeating the End of Course Examination of a Course Unit, the marks obtained for In-Course Assessment component at their first attempt shall be used to determine the Final Grade for that Course Unit.

#### **4.5. Criteria for Awarding Degrees**

For the award of degrees, the overall GPA is calculated by considering the grades of the credit valued course units (i.e. excluding the auxiliary course units) offered. And the total credit value of course units considered lies between ninety and ninety three for a degree of three years duration and between one hundred and twenty and one hundred and twenty four for a degrees of four years duration.

##### **4.5.1. Requirement for awarding B.Sc. (General) Degree:**

A student who has fulfilled the following requirements is deemed to have satisfied the conditions for the award of *B.Sc. (General) Degree* or *Bachelor of Computer Science Degree*:

- (i). Possesses a Grade C or above in the Auxiliary Course English Language and Grade D+ or above in each of the three Auxiliary Course units: SHA102GA0, MES301GA0 and CSK302GA0,
- (ii). possesses a Grade D+ or above in course units amounting to a minimum of 84 credits, and
- (iii). Obtains an overall GPA of not less than 2.00.

##### **4.5.2. Requirements for awarding B.Sc. in Computer Science Degree:**

A student who has fulfilled the following requirements is deemed to have satisfied the conditions for the award of *B.Sc. in Computer Science Degree*:

- (i). Possesses a Grade C or above in the Auxiliary Course English Language and Grade D+ or above in each of the three Auxiliary Course units: SHA102GA0, MES301GA0 and CSK302GA0,
- (ii). possesses a Grade D+ or above in course units amounting to a minimum of 112 credits, and
- (iii). Obtains an overall GPA of not less than 2.00.

#### 4.5.3. Requirements for awarding B.Sc. (Special) Degree:

A student who has fulfilled the following requirements is deemed to have satisfied the conditions for the award of *B.Sc. (Special) Degree*:

- (i). Possesses a Grade C or above in the Auxiliary Course English Language and Grade D+ or above in each of the three Auxiliary Course units: SHA102GA0, MES301GA0 and CSK302GA0,
- (ii). possesses a Grade D+ or above in course units amounting to a minimum of 112 credits, and
- (iii). Obtains an overall GPA of not less than 2.00.

#### 4.5.4. Requirements for awarding B.Sc. (Applied Science) Degree:

A student who has fulfilled the following requirements is deemed to have satisfied the conditions for the award of *B.Sc. Applied Science Degree*:

- (i). Possesses a Grade C or above in the Auxiliary course English Language and Grade D+ or above in each of the three Auxiliary course units SHA102GA0, MES301GA0 and CSK302GA0,
- (ii). obtains marks 50% or above in Industrial Training,
- (iii). possesses a Grade D+ or above in course units amounting to a minimum of 104 credits, and
- (iv). obtains an overall GPA (OGPA) of not less than 2.00 in the course units followed in Level 1G, Level 2G, Level 3G and Level 4X amounting between 112 and 114 credits excluding Industrial Training.

**Note:** A Student who obtains marks less than 50% in Industrial Training, even due to medical reason does not qualify for the award of *B.Sc. Applied Science Degree* and may opt for the award of *General Degree*.

## Annexure A: Course Codes, Titles and Credit Values of the Course Units

### A1: Auxiliary / Enhancement Units

Level	Course Code	Course Title	Credit Value	No. of Hrs	
				Lect. & Tute	Prac. / Fieldwork
1G	ENG101GA0	English Language I	00	45	
	SHA102GA0	Social Harmony and Active Citizenship	00	15	30
	MBS103GA2	Mathematics for Biological Science students	02	30	-
	BPS104GA2	Biology for Physical Science students	02	30	-
	COM106GA2	Computer Literacy	02	20	20
	SAS106GA2	Science and Society	02	30	-
2G	ENG201GA0	English Language II	00	135	
	CAG202GA0	Career Guidance	00	05	-
3G	MES301GA0	Management & Entrepreneurial Skills	00	30	-
	CSK302GA0	Communication skills	00	15	-
	CAG303GA0	Career Guidance	00	05	-

**Note:** The performance of a student in English Language shall be calculated by giving a weight of one for ENG101GA0 and three for ENG201GA0. The marks thus obtained will be graded according to a grading system decided by the Faculty Level Examination Board.

### A2: Supplementary Subject Areas

Subject Area	Level	Course Code	Course Title	Credit Value	No. of Hrs	
					Lect. & Tute	Prac. / Fieldwork
Basic Computing (for students not offering Computer Science as a subject)	2G	BAC241GE2	Computer Applications I	02	30	
	3G	BAC341GE2	Computer Applications II	02	30	
Biotechnology	2G	BTE241GE2	Biotechnology I	02	30	-
	3G	BTE341GE2	Biotechnology II	02	30	-

<b>Bioinformatics</b>	3G	BIF341GE2	Bioinformatics	02	22	24
<b>Electronics</b> (for students not offering Physics as a subject)	2G	ELE241GE2	Basic Electronics	02	20	30
		ELE242GE2	Analogue Electronics I	02	20	30
	3G	ELE341GE2	Analogue Electronics II	02	20	30
		ELE342GE2	Digital Electronics	02	20	30
<b>Environmental Science</b>	2G	ENS241GE2	Environmental Biology	02	30	-
	2G	ENS242GE2	Environmental Chemistry	02	30	-
	3G	ENS341GE2	Environmental Physics	02	30	-
	3G	ENS342GE2	Environmental Pollution & Management	02	30	-
<b>Food Science &amp; Nutrition</b>	2G	FSN241GE2	Food Science & Nutrition I	02	30	-
	3G	FSN341GE2	Food Science & Nutrition II	02	30	-
<b>Biostatistics and Statistics</b>	2G	BMS241GE2	Biostatistics I	02	25	10
	4M	BMS441ME2	Biostatistics II	02	25	10

### A3: Principal Subjects for Level IG

Subject	Course Code	Course Title	Credit Value	No. of Hrs	
				Lect. & Tute	Prac. / Fieldwork
Botany	BOA101GC2	Basic Biology	02	22	24
	BOA102GC2	Plant Diversity I	02	22	24
	BOA103GC2	Plant Diversity II	02	22	24
	BOA104GC2	General Microbiology	02	22	24
Chemistry	CHE101GC2	General Chemistry and Chemistry of main group elements	02	30	-
	CHE102GC2	Introductory Physical Chemistry	02	30	-
	CHE103GC2	Stereochemistry and Reaction Mechanisms	02	30	-
	CHE106GC1	Practical Chemistry I (Inorganic Chemistry)	01	-	45
	CHE107GC1	Practical Chemistry I (Organic and Physical Chemistry)	01	-	45
Computer Science	CSC111GC3	Foundations of Computer Science	03	45	-
	CSC112GC3	Computer Programming I	03	-	135
	CSC113GC2	Data Structures and Algorithms I	02	30	-
Fisheries Science	FIS101GC2	Principles of Fisheries	2	30	-
	FIS102GC2	Fish Evolution and Diversity	2	22	24
	FIS103GC2	Marine & Coastal Environment and Oceanography	2	22	24
	FIS104GC2	Introductory Aquaculture	2	22	24
Applied Mathematics	AMM101GC2	Vector Analysis	02	30	-
	AMM102GC2	Dynamics	02	30	-
	AMM103GC2	Ordinary Differential Equations	02	27	06
	AMM104GC2	Matrices & Statics	02	30	-
Pure Mathematics	PMM101GC2	Set Theory	02	30	-
	PMM102GC2	Limit Process	02	30	-
	PMM103GC2	Algebra	02	30	-
	PMM104GC2	Calculus	02	30	-
Statistics	STA104GC3	Probability Theory	03	45	-
	STA105GC3	Basic Statistical Inference	03	40	10
	STA106GC2	Applied Statistics	02	25	10

Physics	PHY101GC2	Practical Physics I	02	-	90
	PHY104GC3	Mechanics, Vibrations and Waves	03	45	-
	PHY105GC3	Electricity, Electromagnetic Fields and Electronics	03	45	-
Zoology	ZOL101GC2	Origin of Life and Evolutionary Biology	02	22L+T	24P+F
	ZOL102GC2	Ecosystems, distribution and characteristics	02	22L+T	24P+F
	ZOL103GC2	Animal cell biology and Bio-molecules	02	22L+T	24P
	ZOL104GC2	Animal diversity	02	22L+T	24P+F

#### A4: Principal Subjects for Level 2G

Subject	Course Code	Course Title	Credit Value	No. of Hrs	
				Lect. & Tute	Prac./ Fieldwork
Botany	BOA201GC2	Plant Morphology and Anatomy	02	22	24
	BOA202GC2	Plant Systematics	02	22	24
	BOA203GC2	Biochemistry	02	22	24
	BOA204GC2	Genetics	02	22	24
	BOA221GE2	Molecular Biology and Biotechnology	02	30	-
	BOA222GE2	Economically Important Plants	02	30	-
Chemistry	CHE201GC2	Application of Spectroscopic Methods and Coordination Chemistry	02	30	-
	CHE202GC3	Atomic and Molecular Structure and Basic Principles of Molecular Spectroscopy	03	45	-
	CHE203GC3	Practical Chemistry II (Inorganic & Organic Chemistry)	03	-	120
	CHE221GE2	Chemistry of electron deficient compounds, transition and inner-transition elements	02	30	-
	CHE222GE2	Chemistry of polynuclear aromatic hydrocarbons, carbonyl and alicyclic compounds.	02	30	-

Computer Science	CSC231GC2	Software Engineering	02	30	-
	CSC232GC2	Computer Programming II	02	-	90
	CSC233GC2	Database Management Systems	02	30	-
	CSC234GC2	Operating Systems	02	30	-
	CSC235GE2 <sup>†</sup>	Group Project I	02	-	90
	CSC236GE2 <sup>†</sup>	Data Structures and Algorithms II	02	30	-
	CSC237GE2 <sup>†</sup>	Numerical Methods	02	30	-
	CSC238GE2	Information Security Management	02	30	-
	CSC239GE2	Multimedia Technologies	02	30	-
CSC241GE2	Bioinformatics	02	30	-	

<sup>†</sup>This unit is a prerequisite for those aspire to do Special Degree in Computer Science.

Fisheries Science	FIS201GC2	Laboratory techniques	2	22	24
	FIS202GC2	Aquatic Fauna and Flora	2	22	24
	FIS203GC2	Principles of Aquatic Ecology and Fish Behaviour	2	22	24
	FIS204GC2	Fish Biology and Embryology	2	22	24
	FIS221GE2	Ornamental Fish / Plant Culture and Fish Feeds	2	30	-
	FIS222GE2	Fish Parasitology and Diseases	2	30	-
Applied Mathematics	AMM201GC4	Mathematical Methods	04	60	-
	AMM202GC4	Optimization	04	60	-
	AMM221GE2	Numerical Analysis	02	30	-
	AMM222GE2	Fluid Dynamics	02	30	-
Pure Mathematics	PMM201GC4	Linear Algebra	04	60	-
	PMM202GC4	Analysis	04	60	-
	PMM221GE2	Advanced Calculus	02	30	-
	PMM222GE2	Number Theory and Cryptography	02	30	-
Statistics	STA203GC4	Statistical Theory	04	60	-
	STA204GC4	Design of Experiments	04	55	10
	STA223GE2	Sampling Theory	02	30	-
	STA224GE2	Non parametric Methods	02	25	10

Physics	PHY201GC2	Practical Physics II	02	-	90
	PHY204GC2	Solid State Physics	02	30	-
	PHY205GC2	Optics and Special Relativity	02	30	-
	PHY206GC2	Electromagnetism	02	30	-
	PHY222GE2	Computational Physics	02	20	30
	PHY223GE2	Mathematics for Physics	02	20	30
Zoology	ZOL201GC2	Invertebrate Phylogeny and Biology	02	22L +T	24P+F
	ZOL202GC2	Vertebrate Phylogeny and Biology	02	22L +T	24P+F
	ZOL203GC2	Comparative Anatomy and Physiology	02	22L +T	24P
	ZOL204GC2	Animal Ecology	02	22L +T	24P+F
	ZOL221GE2	Animal Genetics	02	30L+T	-
	ZOL222GE2	Animal Histology	02	22L+T	24P
	ZOL223GE2	Animal Behaviour	02	30L+T+F	-
	ZOL224GE2	Zoo-Geography and Sri Lankan Fauna	02	30L+T+F	-

### A5: Principal Subjects for Level 3G

Subject	Course Code	Course Title	Credit Value	No. of Hrs	
				Lect. & Tute	Prac./ Fieldwork
Botany	BOA301GC2	Plant Developmental Physiology and Tissue Culture	02	22	24
	BOA302GC2	Basic Ecology	02	22	24
	BOA303GC2	Plant Pathology	02	22	24
	BOA304GC2	Plant Physiology	02	22	24
	BOA321GE2	Biometry	02	30	-
	BOA322GE2	Natural Vegetation Types of Sri Lanka	02	30	-
	BOA323GE2	Soil Fertility and Sustainable Soil Management	02	30	-
	BOA324GE2 <sup>†</sup>	Scientific Writing and Presentation Skills	02	30	-
Chemistry	CHE301GC2	Analytical Chemistry	2	30	-
	CHE302GC3	Electrochemistry, Chemical kinetics and Surface Chemistry	3	45	-
	CHE303GC3	Practical Chemistry III (Physical, Inorganic and Organic Chemistry)	3	-	-
	CHE321GE2	Industrial Chemistry and Chemistry of Biomolecules	2	30	-
	CHE322GE2	Rearrangement reactions and Heterocyclic chemistry	2	30	-

<sup>†</sup>To be confirmed



Computer Science	CSC311GC3	Graphics and Visual Computing	3	30	45
	CSC312GC1	Computer Programming III	1	-	45
	CSC313GC2	Rapid Application Development	2	30	-
	CSC314GC2	Group Project II	2	-	90
	CSC315GE2 <sup>†</sup>	Knowledge Representation and Programming in Logic	2	30	-
	CSC316GE2	Introduction to Systems and Network Administration	2	30	-

<sup>†</sup>This unit is compulsory for those offering Special Degree in Computer Science

Fisheries Science	FIS301GC2	Fish Harvest Technology I	2	22	24
	FIS302GC2	Fish Harvest Technology II	2	22	24
	FIS303GC2	Fishery Management and Extension	2	22	24
	FIS304GC2	Post Harvest Technology	2	22	24
	FIS321GE2	In Field Training	2	-	60
	FIS322GE2	Fisheries Law	2	30	-
	FIS323GE2	Conservation of Living Resources and Recreation	2	30	-
	FIS324GE2	Introductory Population Dynamics	2	30	-
	FIS325GE2	Biostatistics**	2	30	-
Applied Mathematics	AMM301GC4	Mathematical Programming	4	60	-
	AMM302GC4	Classical Mechanics	4	60	-
	AMM321GE2	Numerical Methods	2	30	-
	AMM322GE2	Mathematical Modelling	2	30	-
Pure Mathematics	PMM301GC4	Group Theory and Topology	4	60	-
	PMM302GC4	Complex Analysis	4	60	-
	PMM321GE2	Functional Analysis	2	30	-
	PMM322GE2	Differential Geometry	2	30	-
Statistics	STA303GC3	Regression Analysis	3	40	10
	SAT304GC2	Statistical Inference	2	30	-
	STA305GC3	Stochastic Processes	3	45	-
	STA323GE2	Quality Control	2	25	10
	STA324GE2	Statistical Computing	2	-	60

Physics	PHY301GC2	Practical Physics III	2	-	90
	PHY302GC3	Modern Physics	3	45	-
	PHY303GC3	Thermal and Statistical Physics	3	45	-
	PHY321GE2	Medical Physics	2	25	15
	PHY322GE2	Astrophysics	2	30	-
Zoology	ZOL301GC2	Developmental Biology	02	22L+T	24P+F
	ZOL302GC2	Environmental Biology and Pollution Monitoring	02	22L+T	24P+F
	ZOL303GC2	Parasitology and Vector Biology	02	22L+T	24P+F
	ZOL304GC2	Entomology and Pest biology	02	22L+T	24P+F
	ZOL321GE2	Introductory Molecular Biology	02	30L+T	-
	ZOL322GE2	Conservation Biology	02	30L+T+F	-
	ZOL323GE2	Ichthyology	02	30L+T	-
	ZOL324GE2	Biostatistics**	02	30L+T	-

\*\*These units cannot be taken together

#### A6: Principal Subjects for Level 3M

Subject	Course code	Course Title	Credit Value	No. of Hrs	
				Lect. & Tute	Prac./Fieldwork
Botany	BOA301MC4	Advanced plant pathology	04	44	48
	BOA302MC3	Advanced Biochemistry	03	33	36
	BOA303MC3	Molecular Genetics	03	33	36
	BOA304MC4	Plant Physiology & Tissue culture	04	44	48
	BOA305MC2	Economic Botany	02	22	24
Chemistry	CHE301MC3	Advanced analytical and spectroscopic techniques	3	45	-
	CHE302MC3	Applications of group theory and Diffraction Methods	3	45	-
	CHE303MC3	Pericyclic Reactions and Photochemistry	3	45	-
	CHE304MC3	Aromaticity and Conformational Analysis	3	45	-
	CHE305MC2	Advanced Inorganic Chemistry Laboratory	2	-	120
	CHE306MC2	Advanced Physical Chemistry Laboratory	2	-	120

Computer Science	<b>Course Units for students who are successful in securing an industrial training placement</b>				
	CSC311MC3	Advanced Database Design and Systems	3	45	-
	CSC312MC4	Data Communications and Computer Networks	4	60	-
	CSC313MC3	Digital Image Processing	3	45	-
	CSC314MC8	Industrial Training	8	-	4-6 months
	<b>Course Units for students who could not obtain an industrial training placement</b>				
	CSC311MC3	Advanced Database Design and Systems	3	45	-
	CSC312MC4	Data Communications and Computer Networks	4	60	-
	CSC313MC3	Digital Image Processing	3	45	-
	CSC315MC4 *	Individual Project	4	-	200
	CSC316MC2 *	Industrial Management	2	30	-
	CSC317MC2 *	Software Quality Assurance	2	30	-
	Fisheries	FIS301MC3	Fishery Economics and Marketing	45	-
FIS302MC3		Fish Population Dynamics and Stock Assessment	45	-	3
FIS303MC3		Fisheries Microbiology	45	-	3
FIS304MC3		Locally existing Fish Harvesting / Processing Practices and Issues	45	-	3
FIS305MC2		Fisheries Practical I	-	60	2
FIS306MC2		Fisheries Practical II	-	60	2
Mathematics	MMT301MC4	Numerical Linear Algebra	4	60	-
	MMT302MC4	Differential Equations	4	60	-
	MMT303MC4	Relativity and Electromagnetic Theory	4	60	-
	MMT304MC4	Topology	4	60	-
Statistics	STA301MC3	Advanced Design of Experiment	3	45	-
	STA302MC3	Medical Statistics	3	45	-
	STA303MC3	Categorical Data Analysis	3	45	-
	STA304MC3	Computational Statistics	3	15	60
	STA305MC4	Time Series Analysis	4	60	-
Physics	PHY301MC4	Practical Physics IV and Library Work	4	-	135P+ 45 Library Work
	PHY302MC3	Classical Mechanics and Relativity	3	45	-
	PHY303MC3	Quantum Mechanics	3	45	-
	PHY304MC3	Advanced Electronics	3	45	-
	PHY305MC3	Statistical Physics and Thermodynamics	3	45	-

Zoology	ZOL301MC3	Pest Management	3	33L+T	36P+ F
	ZOL302MC3	Limnology	3	33L+T	36P+ F
	ZOL303MC3	Endocrinology	3	33L+T	36P+ F
	ZOL304MC3	Molecular Biology and Immunology	3	33L+T	36P+ F
	ZOL305MC2	Wild Life Conservation and Management	2	30L+T+F	-
	ZOL306MC2	Environmental Toxicology	2	30L+T+F	-

\* These course units are only offered to those students who were unsuccessful in obtaining and Industrial Placement for CSC314MC8.

#### A7: Principal Subjects for Level 4M

Subject	Course Code	Course Title	Credit Value	No. of Hrs	
				Lect. & Tute	Prac./ Fieldwork
Botany	BOA401MC3	Microbiology	03	33	36
	BOA402MC3	Genetic Engineering	03	33	36
	BOA403MC3	Plant Virology	03	33	36
	BOA404MC3	Herbarium, Seminar & Essay	03	-	-
	BOA405MC3	Biotechnology	03	33	36
	BOA406MC3	Rhizobiology	03	33	36
	BOA407MC6	Research Project	06	-	-
	BOA421ME3	Cell signalling	03	45	-
	BOA422ME3	Food toxins	03	45	-
	BOA423ME3	Plant breeding	03	34	22
	BOA424ME3	Plant defence responses	02	30	-
Chemistry	CHE401MC4	Advanced Coordination Chemistry, Magneto Chemistry, Organometallic Chemistry and Reaction Mechanism	4	60	-
	CHE402MC4	Quantum Chemistry, Statistical Thermodynamics, Advanced Surface Chemistry, Macromolecules and Aggregates	4	60	-
	CHE403MC4	Retro synthesis, Advanced Heterocyclic Chemistry and Advanced Chemistry of Primary Metabolites	4	60	-
	CHE404MC4	Advanced Organic Chemistry Laboratory	4	-	240
	CHE405MC4	Research Project (Laboratory or Industry based)	4	20 weeks research	
	CHE406MC1	Library-based seminar	1	-	-
	CHE421ME3	Bioinorganic chemistry, Nuclear and Radio-chemistry, Advanced chemistry of inner-transition elements, Clusters and Clathrates	3	45	-
	CHE422ME3	Advanced topics in Thermodynamics, Kinetics and Electrochemistry	3	45	-
	CHE423ME3	Chemistry of Secondary Metabolites and Therapeutic Agents	3	45	-

Computer Science	CSC411MC0 <sup>†</sup>	Research Seminar	0	20	-
	CSC412MC3	Artificial Intelligence and Expert Systems	3	45	-
	CSC413MC3	Advanced Algorithms	3	45	-
	CSC414MC3	High Performance Computing	3	45	-
	CSC415MC3	Mobile Computing	3	45	-
	CSC416MC6 <sup>†</sup>	Research Project	6	-	300
	CSC417MC3	Data Mining and Machine Learning	3	45	-
	CSC418MC3	Compiler Design	3	45	-
	CSC419MC3	Mathematics for Computing IV	3	45	-
	CSC421MC3	Systems Analysis, Design and Project Management	3	45	-
	CSC422ME2	Data Visualisation	2	30	-

<sup>†</sup>Obtaining a minimum of Grade C in CSC411MC0 and a minimum of Grade C in CSC416MC6 are a requisite to qualify a pass in Level 4M. The above CSC course codes are subject to confirmation.

Fisheries	FIS401MC3	Marine Ecology and Limnology	45	-	3
	FIS402MC3	Fish Physiology and Biochemistry	45	-	3
	FIS403MC3	Aquaculture and Hatchery techniques	45	-	3
	FIS404MC3	Fish Genetics and Biotechnology	45	-	3
	FIS405MC2	Fisheries Practical III	-	60	2
	FIS406MC2	Fisheries Practical IV	-	60	2
	FIS407MC6	Research Projects	180P + F	6	-
	FIS408MC2	Current Topics in Fisheries	60 Library Work + Seminar	2	-
	FIS421ME2	Fisheries Statistics	15	30	2
	FIS422ME2	Research Methods in Fisheries	15	30	2
	FIS423ME2	Cost Ecology and Management	15	30	2
	FIS424ME2	Fisheries Socioeconomics	15	30	2
	FIS425ME1	Project Formulation and Monitoring	15	-	1

Mathematics	MMT401MC4	Numerical Solutions of Differential Equations	4	60	-
	MMT402MC6	Measure Theory	6	90	-
	MMT403MC6	Functional Analysis	6	90	-
	MMT404MC4	Real and Complex Analysis	4	60	-
	MMT405MC2	Project	2	15 Weeks	
	MMT421ME4	Quantum Mechanics and Continuum Mechanics	4	60	-
	MMT422ME4	Ring Theory	4	60	-
	MMT423ME4	Group Theory	4	60	-
	MMT424ME4	Mathematical Biology	4	60	-
	MMT425ME4	Financial Mathematics	4	60	-
	MMT426ME4	Advanced Optimization	4	60	-
	MMT427ME4	Finite Element Analysis & Applications	4	45	45
	Statistics	STA401MC4	Multivariate Analysis	4	60
STA402MC6		Measure Theory	6	90	-
STA404MC3		Practical	3	-	90
STA405MC3		Project	3	15 Weeks	
STA406MC3		Markov Processes for Stochastic Modelling	3	45	-
STA407MC3		Non-parametric Methods	3	45	-
STA408ME3		Generalised Linear Mixed Models for Longitudinal Data	3	45	-
STA409ME3		Medical Statistics	3	15	60
STA422ME3		Non-parametric Inference	3	45	-
STA424ME6		Advanced Probability Theory	6	90	-
STA425ME3		Advanced Statistical Theory	3	45	-
Physics	PHY401MC6	Project and Workshop Technology	6	-	-
	PHY402MC3	Advanced Electromagnetism	3	45	-
	PHY403MC3	Advanced Solid State Physics	3	45	-
	PHY404MC3	Nuclear Physics	3	45	-
	PHY405MC3	Laser Physics	3	45	-
	PHY406MC3	Atomic and Molecular Spectra	3	45	-
	PHY407MC3	Particle Physics	3	45	-
	PHY421ME3	Instrumentation and characterization	3	30	15
	PHY422ME3	Nanoscience & Nanotechnology	3	45	-
	PHY423ME3	Energy Physics	3	45	-

Zoology	ZOL401MC3	Advanced Parasitology and Vector Control	3	33L+T	36P+F
	ZOL402MC3	Insect Structure and Functions	3	33L+T	36P+F
	ZOL403MC3	Insect Ecology	3	33L+T	36P+F
	ZOL404MC3	Aquaculture	3	33L+T	36P+F
	ZOL405 MC3	Marine Biology	3	33L+T	36P+F
	ZOL406 MC2	Seminar and Essay	2	-	30
	ZOL407 MC6	Research Project	6	-	30 Weeks
	ZOL408ME2	Coastal and Mangrove Conservation and Management	2	30L+T+F	-
	ZOL409ME2	Herpetology	2	30L+T+P+F	-
	ZOL410ME2	Ornithology and Mammalogy	2	30L+T+P+F	-
	ZOL411ME2	Advanced Animal Physiology	2	22L+T	24P
	ZOL412ME2	Advanced Evolutionary Biology and Molecular Systematics	2	22L+T	24P
	ZOL413ME2	Research Methodology and Data Analysis	2	30L+T	-
	ZOL414ME2 <sup>†</sup>	Scientific Writing and Presentation	2	30L+T	-

<sup>†</sup>To be confirmed

Note: 3M and 4M syllabi for Botany and Fisheries yet to be confirmed.

### A8: Subject Specific Areas of Level 1S

Subject	Course Code	Course Title	Credit Value	No. of Hrs	
				Lect. & Tute	Prac.
Computer Science	CSC111SC3	Foundations of Computer Science	3	45	-
	CSC112SC3	Computer Programming I	3	-	135
	CSC113SC2	Introduction to Computer Security and Cryptography	2	30	-
	CSC114SC2	Mathematics for Computing I	2	30	-
	CSC115SC3	Statistics for Computing I	3	45	-
	CSC116SC2	Introduction to Computer Systems	2	30	-
	CSC117SC2	Data Structures and Algorithms I	2	30	-
	CSC118SC2	Human Computer Interaction	2	30	-
	CSC119SC2	Mathematics for Computing II	2	30	-
CSC121SC3	Statistics for Computing II	3	45	-	

### A9: Subject Specific Areas of Level 2S

Subject	Course Code	Course Title	Credit Value	No. of Hrs	
				Lect. & Tute	Prac.
Computer Science	CSC231SC2	Software Engineering	2	30	-
	CSC232SC2	Computer Programming II	2	-	90
	CSC233SC2	Database Management Systems	2	30	-
	CSC234SC3	Computer Architecture	3	30	45
	CSC235SC4	Mathematics for Computing III	4	60	-
	CSC236SC2	Operating Systems	2	30	-
	CSC237SC3	Concepts of Programming Languages	3	45	-
	CSC238SC2	Data Structures and Algorithms II	2	30	-
	CSC239SC2	Professional Practice	2	30	-
	CSC241SC2	Group Project I	2	30	-
	CSC242SC2	Introduction to Human Resource Management	2	30	-
	CSC243SE2	Numerical Methods	2	30	-
	CSC244SE2	Information Assurance and Security	2	30	-
	CSC245SE2	Web Technologies	2	30	-
	CSC246SE2	Multimedia Technologies	2	30	-
CSC247SE2	Bioinformatics	2	30	-	



## A10: Subject Specific Areas of Level 3S

Subject	Course Code	Course Title	Credit Value	No. of Hrs	
				Lect. & Tute	Prac.
Computer Science	<b>Course Units for students who are successful in securing an industrial training placement</b>				
	CSC311SC3	Graphics and Visual Computing	3	30	45
	CSC312SC1	Computer Programming III	1	-	45
	CSC313SC2	Rapid Application Development	2	30	-
	CSC314SC2	Knowledge Representation and Programming in Logic	2	30	-
	CSC315SC2	Group Project II	2	-	90
	CSC316SC3	Advanced Database Design and Systems	3	45	-
	CSC317SC4	Data Communications and Computer Networks	4	60	-
	CSC318SC3	Digital Image Processing	3	45	-
	CSC319SC8	Industrial Training	8	-	4-6 months
	<b>Course Units for students who could not obtain an industrial training placement</b>				
	CSC311SC3	Graphics and Visual Computing	3	30	45
	CSC312SC1	Computer Programming III	1	-	45
	CSC313SC2	Rapid Application Development	2	30	-
	CSC314SC2	Knowledge Representation and Programming in Logic	2	30	-
	CSC315SC2	Group Project II	2	-	90
	CSC316SC3	Advanced Database Design and Systems	3	45	-
	CSC317SC4	Data Communications and Computer Networks	4	60	-
	CSC318SC3	Digital Image Processing	3	45	-
	CSC321SC2*	Industrial Management	2	30	-
	CSC322SC4*	Individual Project	4	-	200
	CSC323SC2*	Software Quality Assurance	2	30	-
	Education	EDU301SC3	Philosophical and Social Bases of Education	3	45
EDU302SC3		Psychological Bases of Education	3	45	-
EDU303SC3		Educational Assessment and Evaluation	3	45	-
EDU304SC3		Policies and Problems of Education	3	45	-

\* These course units are only offered to those students who were unsuccessful in obtaining and Industrial Placement for CSC319SC8.

## All: Subject Specific Areas of Level 4S

Subject	Course Code	Course Title	Credit Value	No. of Hrs	
				Lect. & Tute	Prac.
Computer Science	CSC411SC0 <sup>†</sup>	Research Seminar	0	20	-
	CSC412SC3	Artificial Intelligence and Expert Systems	3	45	-
	CSC413SC3	Advanced Algorithms	3	45	-
	CSC414SC3	High Performance Computing	3	45	-
	CSC415SC3	Mobile Computing	3	45	-
	CSC416SC6 <sup>†</sup>	Research Project	6	-	300
	CSC417SC3	Data Mining and Machine Learning	3	45	-
	CSC418SC3	Compiler Design	3	45	-
	CSC419SC3	Mathematics for Computing IV	3	45	-
	CSC421SC3	Systems Analysis, Design and Project Management	3	45	-
	CSC422SE2	Systems and Network Administration	2	30	-
	Education	EDU401SC3	General Methods of Teaching	3	45
EDU402SC3		Methodology of Teaching two Selected Science Subjects	3	45	-
EDU403SC3		Research Methodology and Computer Literacy	3	45	-
EDU404SC3		School Based Planning and Management	3	45	-
EDU405SC3		Educational Guidance and Counselling	3	45	-
EDU406SC3		Curriculum Studies	3	45	-
EDU407SC6		Practicum	6	-	10 weeks
EDU408SC4		Project and Dissertation	4	-	-
EDU421SE2		Educational Planning	2	30	-
EDU422SE2		Sociology of Education	2	30	-
EDU423SE2		Pre-school and Primary school education	2	30	-
EDU424SE2		Issues and Policies in Tertiary Education	2	30	-
EDU425SE2		Computers in Education	2	30	-
EDU426SE2		Educational Technology	2	30	-
EDU427SE2		Educational Statistics	2	30	-

<sup>†</sup>Obtaining a minimum of Grade C in CSC411SC0 and a minimum of Grade C in CSC416SC6 are a requisite to qualify a pass in Level 4S. The above CSC course codes are subject to confirmation.

## A12: Subject Specific Areas of Level 4X

Subject	Course Code	Course Title	Credit Value	No. of Hrs	
				Lect. & Tute	Prac./ Fieldwork
Common Courses	APS401XM2	Industrial Management	2	30	-
	APS402XM2	Introduction to Human Resource Management	2	30	-
	APS403XM2*	Database Management	2	30	-
	APS404XM2*	IT Project Management	2	30	-
	APS405XM2	Entrepreneurship	2	30	-

\*Computer Science students should follow APS404XM2 but not APS403XM2 whereas others should follow APS403XM2 and not APS404XM2.

Botany	BOA401XS3	Plant Biotechnology	3	22	24
	BOA402XS2	Environmental Microbiology	2	22	24
	BOA403XS2	Food Safety	2	22	24
	BOA404XS2	Postharvest Technologies of fresh produce	2	22	24
	BOA405XS2	Horticulture	2	22	24
	BOA406XS8	Industrial Training in Applied Botany	8	-	4-6 months
	BOA407XS3	Laboratory/Project Work	3	-	90-120
Chemistry	CHE401XS2	Application of analytical methods	2	30	-
	CHE402XS2	Industrial Organic Chemistry	2	30	-
	CHE403XS3	Industrial waste management and Cleaner production	3	45	-
	CHE404XS2	Industrial minerals, Nanomaterials and material Characterizations	2	30	-
	CHE405XS2	Chemistry for Drug design and Chemotherapy	2	30	-
	CHE406XS3	Applied Chemistry Laboratory/Project Work	3	-	90-120
	CHE407XS8	Industrial Training	8	-	4-6 months

Computer Science	CSC401XS3	Java Certification (Oracle)	3	45	-
	CSC402XS3	Database Management Certification(Oracle)	3	45	-
	CSC403XS3	MCSD - Microsoft Certified Solution Developer	3	45	-
	CSC404XS3	CCNA - Cisco Networking Certification	3	45	-
	CSC405XS3	Linux Professional Institute / Redhat	3	45	-
	CSC406XS3	Practical Work / Research Project in Applied Computing	3	-	90-120 Hrs / 4-6 months
	CSC407XS8	Industrial Training in Applied Computing	8	-	4-6 months
	CSC421XE3	Introduction to e-Education and Learning Management Systems	3	45	-
	CSC422XE2	Data visualisation	2	30	-
	CSC423XE2	Information security management	2	30	-
	CSC424XE3	Mobile platforms and development environments	3	45	-
Fisheries	FIS401XS2	Quality Control of Fish and Fishery Product	2	22	24
	FIS402XS2	Fish Processing Techniques	2	22	24
	FIS403XS2	Breeding Techniques, Hatchery Management and Larval rearing	2	22	24
Mathematics and Statistics	MMT401XS3	Financial Mathematics	3	45	-
	MMT402XS3	Actuarial Mathematics	3	45	-
	STA403XS3	Applied Multivariate Analysis for Real World Data	3	45	-
	STA404XS2	Advanced Statistical Computing	2	10	40
	MMT405XS3	Project Work	3	-	90-120
	STA406XS8	Industrial Training	8	-	4-6 months

Physics	PHY401XS3	Introduction to Physics of Industrial Materials	3	45	-
	PHY402XS2	Ceramics and their Industrial Applications	2	30	-
	PHY403XS2	Polymers and their Industrial Applications	2	30	-
	PHY404XS2	Laboratory Based Workshop Practice	2	30	-
	PHY405XS3	Laboratory/Project Work in Industrial Materials	3	-	90-120
	PHY406XS8	Industrial Training	8	-	4-6 months
	PHY421XE2	Minerals for Advanced Applications	2	30	-
	PHY422XE2	Semiconductor Process Technology	2	30	-
	PHY423XE2	Energy Management in Industries	2	30	-
Zoology	ZOL401XS3	Economic Zoology	3	33	36
	ZOL402XS3	Ecotourism	3	33	36
	ZOL403XS3	Application of Remote Sensing and Geographical Information System for Environmental Management	3	33	36
	ZOL404XS2	Bio-nanotechnology	2	30	-
	ZOL405XS3	Laboratory/Project Work	3	-	90-120
	ZOL406XS8	Industrial Training	8	-	4-6 months

Note: All course codes are subject to confirmation.

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Ms. S. Thenuga    Laboratory Attendant

## Department of Zoology - Academic Staff



**Prof. S.N. Surendran**  
B.Sc. [Hons] (Jaffna),  
Ph.D. (Colombo)  
**Professor**



**Dr. (Mrs.) A. Sivaruban**  
B.Sc. [Hons] (Jaffna),  
Ph.D. (Jaffna)  
**Senior Lecturer**



**Dr. (Mrs.) R. Gnaneswaran**  
B.Sc. [Hons] (Jaffna),  
M.Phil. (Peradeniya),  
Ph.D. (Peradeniya)  
**Senior Lecturer**



**Dr. K. Gajapathy**  
B.Sc. [Hons] (Jaffna),  
Ph.D. (Jaffna)  
**Senior Lecturer**



**Mrs. N. Rajan**  
B.Sc. [Hons] (Jaffna),  
M.Phil. (Jaffna)  
**Senior Lecturer**



**Mrs. P. Sivakumar**  
B.Sc. [Hons] (Jaffna),  
M.Phil. (Peradeniya)  
**Lecturer**



**Dr. T. Eswaramohan**  
B.Sc. [Hons] (Jaffna),  
Ph.D. (Colombo)  
**Senior Lecturer**



**Mrs. T.W. Shanthakumar**  
B.Sc. [Hons] (Jaffna),  
M.Phil. (Jaffna)  
**Lecturer**



**Mr. W. Venkatesh  
Luckshman**  
B.Sc. [Hons] (Jaffna),  
M.S. (Oklahoma)  
**Senior Lecturer**



**Ms. G. Kandasamy**  
B.Sc. [Hons] (Peradeniya)  
**Lecturer**

## Support Staff

Ms. A. Ajanthini	Laboratory Attendant	Ms. T. Kalpana	Laboratory Attendant
Mr. K. Ambikapathy	Labourer	Mrs. K. Niranjan	Technical Officer
Mr. E. Amirthalingam	Laboratory Attendant	Mr. S. Sivadenthiran	Labourer
Mr. N. Bakeerathan	Staff Technical Officer	Mr. K. Sribandakaran	Staff Technical Officer
Mr. P. Gajanthan	Computer Applicant Assistant	Mr. S. Thangarajah	Laboratory Attendant
Mr. S. Gnanasegaram	Laboratory Attendant	Mr. P. Vimalananthan	Laboratory Attendant
Mr. V. Jegathambikaipakan	Staff Technical Officer		

## E. Useful Telephone Numbers

Administrative Office/Branch/Unit	Telephone Number
University - General Information	021 - 221 8101
Vice Chancellor	021 - 221 8102
Registrar	021 - 221 8105
Bursar	021 - 221 8108
Senior Assistant Registrar /Administration	021 - 221 8112
Assistant Registrar /Student Admission	021 - 221 8120
Deputy Registrar /Examination	021 - 221 8118
Assistant Registrar / Welfare Services	021 - 221 8122
University Medical Officer (UMO)	021 - 221 8130
Deputy Chief Marshal	021 - 221 8132
Chief Security Officer	021 - 221 8133
Senior Student Counsellor	021 - 221 8135
Librarian	021 - 221 8136
Computer Unit	021 - 221 8195
English Language Teaching Centre	021 - 221 8167
Physical Education Unit	021 - 221 8131
Anandakumarasamy Hostel	021 - 222 2306
Balasingam Hostel	021 - 222 2304
Ramanthan Academy of Fine Arts Hostel	021 - 321 7769
Peoples Bank (University Branch)	021 - 222 2072
Bank of Ceylon (University Branch)	021 - 221 9570

## F. The Office Bearers of the Science Students Union



President	Mr. S. Suwarnan
Vice-President	Mr. R. Ratheeswaran
Secretary	Mr. T. Aranraj
Senior Treasurer	Dr. S. Arivalzahan
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	Mr. T. Kalaineethan
	Mr. K. Derushan

G. Map of the Faculty of Science



Website of the Faculty of Science: [www.sci.jfn.ac.lk](http://www.sci.jfn.ac.lk)