



Prospectus

2021 - 2025



Faculty of Agriculture
University of Peradeniya

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UNIVERSITY OF PERADENIYA

The University of Peradeniya, formerly known as the University of Ceylon, was established in 1942. It has earned its reputation as the largest, residential University in Sri Lanka comprising of nine academic faculties covering all major disciplines. The University is one of the largest and most comprehensive in the Sri Lankan university system in terms of trained academics, infrastructure facilities, research and development, and undergraduate and postgraduate student output. Its diverse student body is representative of all ethnic communities and come from various parts of the country making it a truly national University. The University of Peradeniya currently functions under the purview of the University Act No.16 of 1978 and its subsequent amendments. The organizational structure of the University consists of the following administrators and administrative bodies to ensure the smooth functioning of the institution.

CHANCELLOR: The Chancellor is the titular head of the University who presides over the Convocation of the University. The President of the Democratic Socialist Republic of Sri Lanka nominates the Chancellor for a period of five years.

AUTHORITIES OF THE UNIVERSITY

COUNCIL: The Council is the chief body and governing authority of the University. It is made up of the Vice Chancellor, the ex-officio Chairperson, the Deputy Vice Chancellor, the Deans, two elected representatives of the Senate and thirteen members appointed by the UGC.

SENATE: The Senate is the academic authority of the University that makes recommendations to the Council regarding teaching, research, examinations and related matters. The Senate consists of the Vice Chancellor, the ex-officio Chairperson, the Deputy Vice Chancellor, the Deans, Directors of Postgraduate Institutes, Heads of Departments, Librarian, permanent Professors of the University, and two teachers elected by the Faculty Boards from among their permanent members as faculty representatives.

FAULTY BOARD: The Dean of the Faculty is the Chairperson of the Faculty Board. The Composition of the Faculty Board of Agriculture is defined in the Page 14.

The academic Departments of Study are subject to the purview of the respective Faculty. A Head of the Department of Study is appointed by the Council upon the recommendation of the Vice Chancellor from among the members of the academic staff of a department. The central administration with its different

departments comes under the control of the Registrar while the Bursar supervises the Finance Branches of the Faculty. In accordance with the University Act, the respective authorities appoint standing committees and ad-hoc committees to discharge the duties effectively and to attend to special matters of the University.

OFFICERS OF THE UNIVERSITY

Vice Chancellor: The Vice Chancellor is the principle executive, academic and accounting officer of the University. The Vice Chancellor is also responsible for the maintenance of discipline.

Deputy Vice Chancellor: The Deputy Vice Chancellor is responsible for student affairs. The Deputy Vice Chancellor substitutes for the Vice Chancellor when it is necessary.

Deans: The Faculty Boards elect Deans for their respective faculties from among the Heads of Departments for a period of three years. A Dean is the academic and administrative head of the Faculty.

Librarian: The Council appoints the Librarian under the direction and control of the Vice Chancellor. The Librarian is responsible for the administration of the libraries of the University.

Registrar: The Council of the University appoints the Registrar. The Registrar is responsible for general administration, examinations, and the discipline of the non-academic staff and functions under the direction of the Vice Chancellor. The Deputy Registrar, the Faculty Registrars and other administrative departments and divisions assist the Registrar in general administration of the University. The Registrar is also the custodian of records and property of the University.

Bursar: The Bursar is appointed by the Council of the University, and is responsible for the financial administration of the University including the maintenance of accounts subject to the direction and control of the Registrar.

CURRENT OFFICERS OF THE UNIVERSITY OF PERADENIYA

Chancellor:	Prof. Gerald Peiris	+94-11-2695571
Vice-Chancellor	Prof. MD Lamawansa	+94-81- 2392300, +94-81-2388151 vc@pdn.ac.lk
Deputy Vice-Chancellor	Prof. WMT Madhujith	+94-81-2392304, +94-81-2389140 dvc@pdn.ac.lk
Deans of Faculties (listed below)		
Acting Registrar	Mr. MGJ Dharmasiri	+94-81-2392302, +94-81-2387395 registrar@pdn.ac.lk
Bursar	Mr. AMNB Arampath	+94-81-2392400, +94-81-2388104 bursar@pdn.ac.lk
Acting Librarian	Mr. R Maheswaran	+94-81-2392470, +94-81-2388678 librarian@pdn.ac.lk

DEANS OF FACULTIES

Agriculture	Prof. KASS Kodithuwakku B.Sc. Agric. (Peradeniya, Sri Lanka), M.B.A., Ph.D. (Stirling, UK), MSLIM, FIM (SL)	+94-81-2395010 +94-81-2388041 deanagri@pdn.ac.lk
Allied Health Science	Prof. MDMLDK Yatawara B.VSc. (Peradeniya, Sri Lanka), Ph.D. (Kochi, Japan)	+94-81-2392138 +94-81-3806641 deanahs@pdn.ac.lk
Arts	Dr. EMPCS Ekanayake B.A. (Peradeniya, Sri Lanka), M.Ed. (Sussex, UK), M.Phil (Colombo, Sri Lanka) Ph.D. (Leicester, UK)	+94-81- 2392500 +94-81-2388933 deanarts@pdn.ac.lk
Dental Sciences	Prof. AM Attygalla B.D.S. (Peradeniya, Sri Lanka), M.S. (Colombo, Sri Lanka), FDSRCS (UK)	+94-81-2397201 +94-81-2388045 deandental@pdn.ac.lk
Engineering	Dr. UI Dissanayake B.Sc. Eng. (Peradeniya, Sri Lanka), Ph.D. (Sheffield, UK)	+94-81-2393300 +94-81-2388322 deaneng@pdn.ac.lk
Management	Prof. EMASB Ekanayake B.Sc. Business Administration (Sri Jayewardenepura, Sri Lanka), MBA (Peradeniya, Sri Lanka), P.hD. (Macquarie, Australia)	+9481-3832611 +9481-2385707 deanmanag@pdn.ac.lk
Medicine	Prof. MVG Pinto MBBS (Peradeniya, Sri Lanka), MD (Colombo, Sri Lanka), FRCA (UK), FCARCSI (Ireland)	+94-81-2396200 +94-81-2388840 deanmed@pdn.ac.lk
Science	Prof. RGSC Rajapaksha B.Sc. M.Phil (Peradeniya, Sri Lanka), Ph.D. (Hokkaido, Japan)	+94-81-2394400 +94-81-2389126 deansci@pdn.ac.lk
Veterinary Medicine & Animal Science	Prof. PGA Pushpakumara B.V.Sc. (Peradeniya, Sri Lanka), Ph.D. (London, UK)	+94-81-2395700 +94-81-2395700 deanvet@pdn.ac.lk

ADMINISTRATIVE STAFF OF THE FACULTY OF AGRICULTURE

Dean	Prof. KASS Kodithuwakku B.Sc. Agric. (Peradeniya, Sri Lanka), M.B.A., Ph.D. (Stirling, UK), MSLIM, FIM (SL)	+94-81-2395010 +94-81-2388041 deanagri@pdn.ac.lk
Senior Assistant Registrar	Mrs. PII Pathirana B. Sc. HRM (Sri Jayawardenapura, Sri Lanka), PGD. Management (Peradeniya, Sri Lanka)	+94-81-2395013 aragri@pdn.ac.lk
Senior Assistant Bursar	Mrs. SNK Karunaratna B. Sc. Business Admin. (Sri Jayawardenapura, Sri Lanka) HNDA (SLIATE), AAT (AAT, Sri Lanka)	+94-81-2395014 abagri@pdn.ac.lk

HEADS OF DEPARTMENTS

Agricultural Biology	Dr. NU Jayawaradne B. Sc. Agric., M. Sc. (Peradeniya, Sri Lanka), Ph.D. (Melbourne, Australia)	+94-81-2395251
Agricultural Economics & Business Mgt	Prof. S Kumar B.A. (Tennessee, USA), M.Sc. (Illinois, USA), Ph.D. (Purdue, USA)	+94-81-2395506
Agricultural Engineering	Prof. NDK Dayawansa B.Sc. Agric. (Peradeniya, Sri Lanka), M.Sc. (AIT, Thailand), Ph.D. (New Castle, UK)	+94-81-2395450
Agricultural Extension	Dr. UI Dissanayeke B. Sc. Agric., M.Phil (Peradeniya, Sri Lanka), Ph.D. (Colombo, Sri Lanka)	+94-81-2395524
Animal Science	Prof. RMCP Deshapriya B.V.Sc. (Sri Lanka), M.Phil. (Reading, UK), Ph.D. (Yamaguchi, Japan)	+94-81-2395320
Crop Science	Prof. CK Beneragama B.Sc. Agric. (Peradeniya, Sri Lanka), M.Sc. (Obihiro, Japan), M.Phil. (Peradeniya, Sri Lanka), Ph.D. (Iwate, Japan)	+94-81-2395110

Food Science & Technology	Prof. RPNP Rajapakse B.Sc., M.Sc. (Peradeniya, Sri Lanka), M.Sc., Ph.D. (South Korea)	+94-81-2395212
Soil Science	Prof. RS Dharmakeerthi B.Sc. Agric., M.Sc. (Peradeniya, Sri Lanka) Ph.D. (Guelph, Canada)	+94-81-2395203

VISION STATEMENT OF THE UNIVERSITY

The vision of the University of Peradeniya, Sri Lanka is to be a leading University in the region with international standing.

MISSION STATEMENT OF THE FACULTY

The Mission of the Faculty of Agriculture, University of Peradeniya, Sri Lanka is to strive for excellence in education, research and outreach in the agriculture sector, for sustainable development.

OUR SHARED VALUES

Our Shared Values are Service Excellence, Leadership, Collaboration, Adaptability and Innovation.

UNIVERSITY FLAG



FACULTY OF AGRICULTURE COLOUR



HISTORY OF THE FACULTY

The University of Ceylon was established in 1942 to train young persons in different academic fields of study and to provide the much needed trained manpower for post-independence Ceylon. In the early parliamentary debates on the establishment of a local university it was conceptualized as one being designed on local culture to meet the manpower needs of an agricultural economy. However, the agriculture degree programme was launched only 5 years after establishing the university.

The early thinking was to develop the Faculty of Agriculture of the University at Gannoruwa at the premises of the Agricultural Farm School of the State Department of Agriculture, which was to be shifted to Kundasale. However, with mounting pressure to commence the agriculture programme and the failure to acquire the necessary land at the proposed site, the Faculty was started in a single building within the University with only four academic staff members. The initial buildings for the faculty were built with the assistance received from Canada under Colombo Plan and with educational assistance provided by the government of USA.

Establishment of the Faculty of Agriculture and Veterinary Science at Peradeniya was approved by the then Minister of Education, on 5th April 1947. Following this, the first batch of 16 students to study agriculture was admitted after completing the GSQ examination in 1947. Those students followed another two years of study programme in Agriculture to be conferred the B.Sc. Agriculture degree.

In 1953, a Department of Agriculture was set up in the newly established Faculty of Agriculture and Veterinary Science, together with departments of Animal Husbandry and Veterinary Science. The three-year B.Sc. Agriculture degree programme was subsequently strengthened by including a one-year farm practical training programme conducted at Mahailuppallama to replace the requirement to sit for the GSQ examination at the end of the first year.

In 1973, an independent Faculty of Agriculture was established with six departments of study. The B.Sc. Agriculture degree programme was further strengthened by providing field training in plantation management of three months duration, with the assistance of the Ministry of Plantation. Subsequently in 1975, a programme of advanced learning under any one of the departments of study was introduced. During this advanced training programme, undertaking a research project and submitting a report under the guidance of a member of staff in the faculty was made compulsory for all undergraduates in agriculture.

This student project activity has gradually developed into a strong collaborative link between the Faculty of Agriculture and the other agricultural organizations in the country including state departments/ research institutes, private and non-governmental organizations, at present.

The agricultural education has now become a mainstay in the university system of Sri Lanka. Three new faculties of agriculture were added in the Affiliated University colleges at Ruhuna and Batticaloa (1981). These Faculties of the affiliated University Colleges continued their academic programmes under the close supervision of the academic staff of the Faculty of Agriculture at the University of Peradeniya, and later upgraded to the level of Faculties of Agriculture in University of Ruhuna (1984), and Eastern University of Sri Lanka (1986), respectively. The Faculty of Agriculture at University of Jaffna was established in 1991. Further, two other University Collages affiliated to Faculty of Agriculture at Peradeniya were established (North-western Province in 1991 and Sabaragamuwa Province in 1996) to cater to the manpower training needs of the country for middle level technically qualified personnel in agriculture (diplomates). These two affiliated colleges provided 2 year diplomas, and were later upgraded to degree awarding faculties in the newly established Rajarata University of Sri Lanka (1996) and Sabaragamuwa University of Sri Lanka (1997), respectively, and a new Faculty of Agriculture was also established in Wayamba University of Sri Lanka in 1999. The curricula and the academic programmes of these new faculties were nurtured by the experience and the contributions of the academic staff of the Faculty of Agriculture at University of Peradeniya.

With this significant contribution to strengthen the higher education in agriculture in the university system, the Faculty of Agriculture at University of Peradeniya also developed into a fully-fledged Faculty with eight departments of study, namely Agricultural Biology, Agricultural Engineering, Agricultural Economics and Business Management, Agricultural Extension, Animal Science, Crop Science, Food Science and Technology, and Soil Science. The curriculum of the B.Sc. Agriculture degree programme was revised periodically to suit the changing needs of the agricultural sector and the transformations taking place in the global academic arena.

The latest revision of the curriculum of the B.Sc. degree programme in Agriculture offered by the Faculty took place during 2004-2006 using a student-centred learning outcome based approach, resulting the launching of a new 4-year (8 semesters) degree programme on B.Sc. in Agricultural Technology and Management in 2006 (B.Sc. AgTech & Mgt), replacing the B.Sc. Agriculture degree that the Faculty offered in the past. The faculty has further expanded its horizons by introducing two new 4-year (8 semesters) degree programmes; one on B.Sc. in Food Science and Technology (B.Sc. FST) in 2004 and the other on B.Sc. in Animal Science and Fisheries (B.Sc. ASF) in 2008.

Being the leading player in agricultural higher education in Sri Lanka, the Faculty of Agriculture at University of Peradeniya consists of 119 academic cadre and more 251 academic support staff to conduct the academic programmes. Of the academic staff recruited, about 85% have been trained up to the Ph.D. level, which is an unparalleled strength. The faculty also comprises of fully equipped laboratory facilities, training/research farms covering all major agro-ecological regions of the country, the only Agricultural Biotechnology Centre (AgBC) of the country, and Agribusiness Centre (AbC) as the outreach arm. Agriculture Education Unit (AEU), established in 2007 provides the training in agriculture and allied sciences for local and international organizations and individuals. From 2010, the Faculty introduced Study Abroad Training Program through AEU to world's leading universities as annual event.

In 2012, the Faculty received Rs 25 million from the World Bank through a competitive grant scheme to improve Higher Education in the Twenty First Century (HETC) focusing on the B.Sc. degree in Food Science and Technology. In the same year, the Faculty revisited Course (Lesson) Plan of BSc Agricultural Technology and Management Degree and published. The Faculty introduced Faculty of Agriculture Undergraduate Research Symposium (FAuRS) as an annual event in the Faculty calendar to provide a common platform for the graduands from all Departments of Study to communicate the results of their final year research projects in 2014. In 2016, the Faculty joined with the Sri Lanka Inventors Commission to evaluate the final year research projects of the Faculty for potential inventions/innovations those will be awarded at the FAuRS. In 2017, the Rural Emersion Programme with the Thiagarajah School of Management, Madurai, India as a student exchange programme was started. The Faculty also started publishing of "Hanthana Blossoms" as a compilation of the best research briefs published through undergraduate research projects in 2017. The Faculty joined with the National Institute of Language Education and Training (NILET) to offer Sinhala language for Tamil students and Tamil language for Sinhala students in 2017. As a step towards internationalization of degree programs, the Faculty established Appointing Honorary Visiting Professor positions in 2018. In the same year, the Faculty established Community Development Centre at the Mahailuppallama Sub Campus to conduct community development activities.

The establishment of the Faculty Master Plan was started with construction of extension to Administrative Building and Department of Animal Science building as the Phase I of the Faculty Master Plan in 2013. In 2015, a new hostel with the capacity of 200 has been established at Mahailuppallama Sub Campus. The Sub Campus premise was renovated to make the place more conducive for undergraduate programmes. The Faculty started construction of Lecture and Common Room and Auditorium Complex, and extensions to Departments of Crop Science and Agricultural Economics and

Business Management as the Phase II of the Faculty Master Plan in 2016. The last phase of the Faculty Master Plan on beautification and landscaping the Faculty premises was started in 2018.

The Faculty of Agriculture proudly celebrated 70 years of higher education in agriculture in grand style by holding AgTech-2018 exhibition at the Mahalluppallama Sub Campus which also celebrated 50th Anniversary of the Sub Campus in the theme of Agriculture beyond the Horizon.

The annual intake of the Faculty is about 300 students under the normal intake through the UGC (200 for B.Sc. AgTech & Mgt, 50 for B.Sc. FST and 50 for B.Sc. ASF). The Faculty also admits adult students from the state and private sector organizations under special provisions admission (10 to the B.Sc. AgTech & Mgt and 2 to the B.Sc. FST, 5 to B.Sc. ASF). The total number of students admitted in a given year accounts for more than 30% of the total annual intake of the agriculture higher education in the University system of Sri Lanka.

ORGANIZATIONAL STRUCTURE OF THE FACULTY

Dean

Senior Assistant Registrar/Assistant Registrar

Senior Assistant Bursar/Assistant Bursar

Departments of Study

Agricultural Biology

Agricultural Economics and Business Management

Agricultural Engineering

Agricultural Extension

Animal Science

Crop Science

Food Science and Technology

Soil Science

Sub-Campus

Mahailluppallama

Cells/Centres/Units/ /Farms

Faculty of Agriculture Quality Assurance Cell (FQAC)

Agribusiness Centre (AbC)

Agricultural Biotechnology Center (AgBC)

Agriculture Education Unit (AEU)

Community Development Unit

Electronics Services Unit (ESU)

English Language Teaching Unit (ELTU)

Gender Education and Women's Initiative Unit (GE&WIU)

Teaching Methods Unit (TMU)

Counselling & Career Guidance Unit (CCGU)

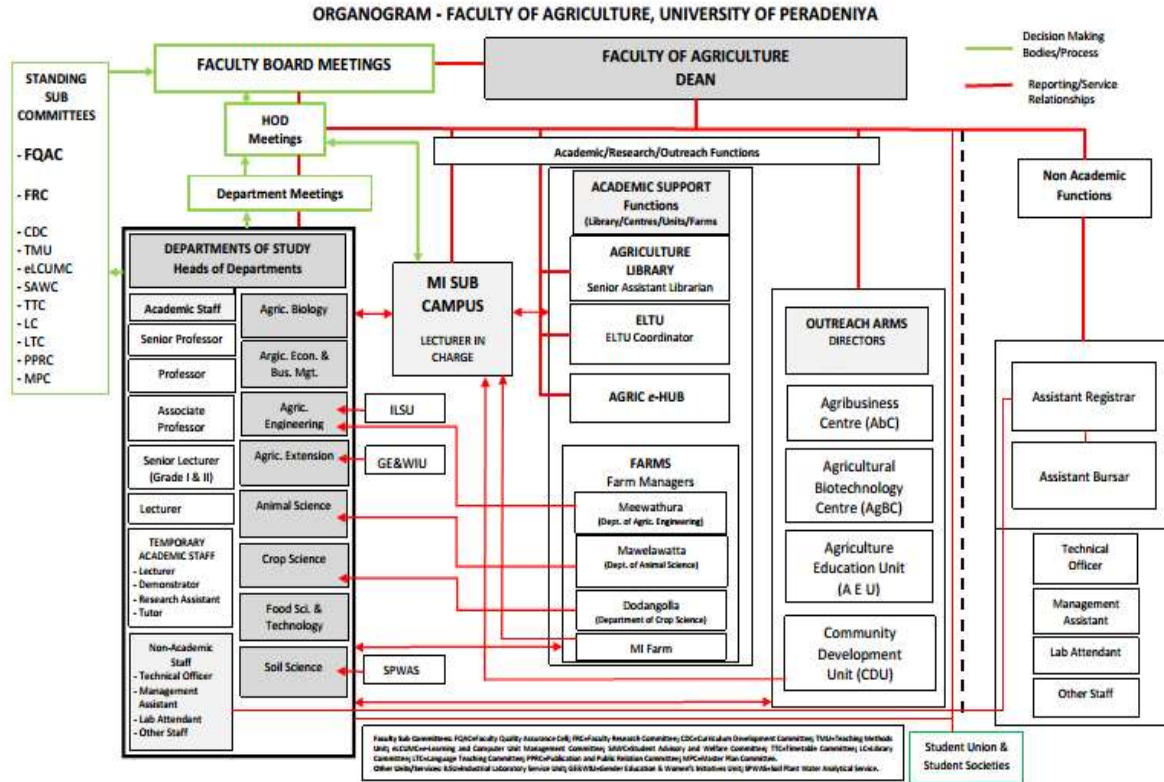
Agriculture Library

Soil Science Analytical Laboratory

Agric e-Hub

Farms

ORGANIZATIONAL CHART OF THE FACULTY



THE FACULTY BOARD OF AGRICULTURE

Dean (Chairperson)
Assistant Registrar (Secretary)
Heads of Departments

All permanent and confirmed academic staff members of the Departments of
Agricultural Biology
Agricultural Economics and Business Management
Agricultural Engineering
Agricultural Extension
Animal Science
Crop Science
Food Science and Technology
Soil Science
and Mahailuppallama sub-campus

Two members elected from among probationary lecturers

Two members elected from those imparting instructions in the Faculty and attached to Faculty centres/units

Three outside members nominated by the Faculty

Non Voting Members:

Two student representatives

Invited members:

Senior Assistant Librarian
Other Probationary Lecturers

STANDING MANAGEMENT COMMITTEES OF THE FACULTY

Presently, there are eighteen standing management committees in the Faculty that have been established to facilitate its smooth and effective functioning. Except for ex-officio members, the Faculty Board appoints members to these committees. The committees draw expertise of the large pool of qualified and experienced academic staff. The objectives and responsibilities of the committees are presented below:

Heads of Department Committee

The Heads of Department Committee is chaired by the Dean and comprises of all Heads of Departments. Its mandate covers all academic, administrative and financial matters related to the Departments and Faculty. The Lecturer In-Charge of the Mahailuppallama Sub Campus is an invited member to the committee. The AR/SAR is mandated to provide secretarial assistance to the committee.

Faculty of Agriculture Quality Assurance Cell (FQAC)

The Faculty Quality Assurance Cell (FQAC) was established in August 2016 with the view of assisting in the quality assurance of teaching, learning, assessment and administrative related activities at the Faculty. The major responsibilities of the FQAC are to:

- Liaise with Faculty Board of Agriculture appointed Sub-Committees and coordinate all Quality Assurance (QA) related activities within the Faculty.
- Liaise with Curriculum Development Committee and Teaching Methods Unit to implement teacher, course, peer, laboratory, field visits evaluations to assure quality of education and analyze the data and provide recommendations.
- Plan and implement quality assurance related training/capacity development workshops for the Faculty staff and students.
- Plan and organize activities related to Institutional Review and Programme Review
- Support to identify existing gaps and implement guidelines and policies in the teaching, learning and assessment process.

- Liaise with the Internal Quality Assurance Unit (IQAU) of University of Peradeniya and Quality Assurance and Accreditation Council (QAAC) of Sri Lanka on the implementation of the QA Framework.

The composition of the FQAC is: Dean/Agriculture (Chairman), SAR/Agriculture (Secretary), SAB/Agriculture, Heads of Departments (8), Lecturer in charge/MI, Deputy Proctor, Professor or Senior Professor appointed by the FB, Senior Lecturer I or II appointed by the FB, Probationary Lecturer appointed by the FB, Representative of Technical Staff Member, Representative of Other Non Academic Staff, Chairperson or Secretary of Curriculum Development Committee, e-learning Committee, Language Teaching Committee, Computer Unit Management Committee, Teaching Methods Unit, Student Advisory and Welfare Committee, Timetable Committee, Library Committee, Publication and Public Relation Committee, Faculty Research Committee (9), Coordinator/ELTU, Directors of AbC, AgBC and AEU (3), Student Union Representative, Two Representatives of Student Forum.

Faculty Research Committee (FRC)

The primary function of FRC is to administer the University Research grants received by the Faculty members. The FRC is also responsible in developing an appropriate research agenda for the Faculty keeping in line with the national priorities. The FRC also provides ethical clearance for research proposals/programmes, where appropriate. It helps guiding the Faculty Board in articulating its role in overall agricultural development, formulation of a human resource development plan for the Faculty and also developing inter-faculty and inter-university linkages and exchange programmes. The term of office of its members is three years.

Curriculum Development Committee (CDC)

The quality of the graduates produced primarily depends on the academic curriculum. The Curriculum Development Committee (CDC) recommends to the Faculty Board, appropriate improvements to the curriculum of the degree programs. It also guides the Faculty in implementation of the semester-based curriculum to meet the future needs of the country. Thus, the CDC is responsible for coordinating and making recommendations to the Faculty Board concerning policy and action with respect to planning for academic development of the Faculty including curriculum evaluation, review, teaching and learning. Usually the committee meets 10 times a year parallel to Faculty Board meetings. The committee also meets more frequently when there are matters for discussion. The committee submits progress reports to be discussed at the FB and also submits memos to the Faculty Board for discussion and approval.

e-Learning and Computer Unit Management Committee (eLCUMC)

Skills in use of computers have become mandatory for the present-day learning activities and employment. The facilities available with the computer unit of the Faculty help undergraduates to develop their skills in use of computers and web-based learning. The e-Learning and Computer Unit Management Committee eLCUMC is responsible for the preparation of guidelines and procedures for the efficient management of the Computer Unit of the faculty. It is also responsible for planning for future expansion and development of the unit to meet the needs of the Faculty. It also provides guidance for academic staff and students to enhance their teaching and learning experience through the process of blended learning. The committee conducts regular training programs for academic staff, non-academic staff and students on both basic and advanced features of eLearning. The committee works closely with curriculum development committee providing them with the necessary assistance to develop eLearning components of the courses. Usually, eLCUMC conduct ten meetings per year. However, eLCUMC meets more frequently when there are matters for discussion. Progress of the committee should report to the Faculty Board.

Teaching Methods Unit (TMU)

The Teaching Methods Unit (TMU) of the Faculty of Agriculture was established in September 1991. Academic staff members of the Faculty who has obtained specialized training on teaching methodologies have formed the core group of trainers of the TMU. The unit attempts to improve the skills and attitudes of teachers as a means of improving the quality of the teaching program and thus the graduates of higher education institutes. The Teaching Methods Unit currently supports the Staff Development Centre of the University of Peradeniya by providing resource persons and other facilities to hold workshops and other training programs of varying durations to help teachers improve the wide range of skills necessary to make them more effective and efficient. Each program is specially designed to achieve the stated objectives of improving the skills of the participants. The committee meets when there are matters for discussion. The progress of the committee should report to the Faculty Board.

Language Teaching Committee (LTC)

The Language Teaching Committee (LTC) supports the English Language Teaching Unit (ELTU) by facilitating the development of students' English language skills in order to help students to follow the academic program effectively. The LTC conducts mini lectures and practical and supports the development of teaching resources for the English program. The LTC also advises the Faculty Board on language policy and matters related to language in the curriculum. In addition, the LTC facilitates the provision of supplementary courses and examinations on students' second language, Sinhala or Tamil. Usually, LTC conduct ten meetings per year. However, LTC meets more frequently when there are matters for discussion. Progress of the committee should report to the Faculty Board.

Library Committee (LC)

Use of the library in an effective manner is essential for good academic training. The Library Committee (LC) develops appropriate guidelines and procedures for the management of the Agriculture Library in order to improve its' user efficiency. It helps identifying limitations and implementing appropriate strategies to increase the effectiveness of library services to students and other users. Usually, LC conducts ten meetings per year. However, LC meets more frequently when there are matters for discussion. Progress of the committee should report to the Faculty Board.

Student Advisory Welfare and Grievance Committee (SAWGC)

The Student Advisory Welfare and Grievance Committee (SAWGC) is responsible for implementing the orientation program for new entrants and student advisory program of the Faculty where each student is assigned to a voluntary advisor from the academic staff to assist them in times of difficulty. It also implements appropriate programs to develop staff-student relationships, takes action to improve the welfare of students of the Faculty and maintain discipline among students of the Faculty according to the university by-laws. Usually, SAWGC conduct ten meetings per year. However, SAWGC meets more frequently when there are matters for discussion. Progress of the committee should report to the Faculty Board.

Publications and Public Relations Committee (PPRC)

The Publication & Public Relations Committee (PPRC) is responsible in preparation documents/materials for the Faculty such as the Prospectus, Brochures, Abstracts of student research, and other documents related to publicity of the Faculty and its activities. The PPRC also implements suitable mechanisms to develop positive public relations. Usually, PPRC conduct ten meetings per year. However, PPRC meets more frequently when there are matters for discussion. Progress of the committee should report to the Faculty Board.

Time Table Committee (TTC)

The Time Table Committee (TTC) is comprised of Senior Assistant Registrar, one member from each department of study including Head/Food Science & Technology and Head/Animal Science. The Senior Assistant Registrar of the Faculty operates as the secretariat of the TTC Committee is responsible for setting up of semester time table and examination time table. Usually, the Chairman of the committee will be Head/AS or Head/FST. The committee meets when there are matters for discussion, usually two times per year. Progress of the committee should report to the Faculty Board.

Master Plan Committee (MPC)

The Master Plan Committee (MPC) is comprised of Dean, Former Dean, Heads of Departments, AR and AB. It presides over land, building and maintenance matters of the Faculty and implementation of the Faculty Master Plan.

MEMBERS OF THE ACADEMIC STAFF

Department of Agricultural Biology

DM De Costa	B.Sc. Agric. (Peradeniya, Sri Lanka), M.Sc. (Reading, UK), Ph.D. (Hiroshima, Japan)	Professor	Plant Pathology and Microbial Genomics
KS Hemachandra	B.Sc. Agric. (Peradeniya, Sri Lanka), M.Phil. (London, UK), Ph.D. (Manitoba, Canada)	Professor	Entomology
HMVG Herath	B.Sc. Agric. (Peradeniya, Sri Lanka), Ph.D. (Maine, USA)	Professor	Environmental Biology and Genomics
SACN Perera	B.Sc. Agric. (Peradeniya, Sri Lanka), Ph.D. (Birmingham, UK)	Professor	Developmental Biology and Molecular Breeding
NU Jayawardana	B. Sc. Agric., M. Sc. (Peradeniya, Sri Lanka), Ph.D. (Melbourne, Australia)	Senior Lecturer	Molecular Biology and Developmental Genetics
KKDV Jayatilake	B.Sc. Agric. (Peradeniya, Sri Lanka), M.Sc. (Kansas State, USA), Ph.D. (Adelaide, Australia)	Senior Lecturer	Plant Systematics and Molecular Breeding
VNS Sirimalwatta*	B. Sc. Agric., M. Sc. (Peradeniya, Sri Lanka), M.Sc. & Ph.D. (Hawaii, USA)	Senior Lecturer	Plant Systematics and Population Genomics
WH Jayasinghe	B.Sc. Ag. Tech & Mgt., M.Sc. (Peradeniya, Sri Lanka), Ph.D. (Hokkaido, Japan)	Senior Lecturer	Entomology
LHMYK Somaratne	B.Sc. Ag. Tech & Mgt., M.Sc. (Peradeniya, Sri Lanka), Ph.D. (UCAS, China)	Senior Lecturer	Molecular Biology and Bioinformatics
PAIU Hemachandra	B.Sc. Ag. Tech & Mgt., M.Sc. (Peradeniya, Sri Lanka), Ph.D. (Texas - Arlington, USA)	Lecturer	Agricultural and Environmental Microbiology
VND Bulathsinalage	B.Sc. Ag.Tech&Mgt., M.Sc. (Peradeniya, Sri Lanka)	Lecturer	Genetics and Plant Breeding
PGAS Warnasooriya	B.Sc. Ag.Tech&Mgt., M.Sc. (Peradeniya, Sri Lanka)	Lecturer	Entomology

KIS Thamali	B.Sc. Ag. Tech & Mgt. (Peradeniya, Sri Lanka)	Lecturer	Genetics and Plant Breeding
PBG Pathirana	B.Sc. Ag. Tech & Mgt. (Peradeniya, Sri Lanka)	Lecturer	Plant Physiology
KDRC Rienzie	B.Sc. Ag. Tech & Mgt., M.Sc. (Peradeniya, Sri Lanka)	Lecturer	Plant Pathology
NMN Liyanage	B.Sc. Ag. Resource Mgt & Tech. (University of Ruhuna, Sri Lanka)	Lecturer	Genetics and Plant Breeding

* Attached to Mahailuppallama Sub Campus

Department of Agricultural Economics and Business Management

KASS Kodithuwakku	B.Sc. Agric. (Peradeniya, Sri Lanka), M.B.A., Ph.D. (Stirling, UK), MSLIM, FIM (SL)	Senior Professor	Entrepreneurship, Marketing Management & Agribusiness Management
HLJ Weerahewa	B.Sc. Agric. , M.Phil (Peradeniya, Sri Lanka), Ph.D. (Guelph, Canada)	Senior Professor	Development Economics, International Trade & Policy Analysis
S Kumar	B.A. (Tennessee, USA), M.Sc. (Illinois, USA), Ph.D. (Purdue, USA)	Professor	Organizational Behaviour & Business Psychology
DVP Prasada	B.Sc. Agric. (Peradeniya, Sri Lanka) M.Sc. (Guelph, Canada), Ph.D. (New South Wales, Australia)	Professor	Development Economics
SP Weligamage*	B.Sc. Agric. , M.Sc. (Peradeniya, Sri Lanka) Ph.D. (Washington State, USA)	Senior Lecturer	Production & Consumption Economics
SDS Hemachandra	B.Sc. Agric. , M.Sc. (Peradeniya, Sri Lanka) M.A., Ph.D. (Hawaii, USA)	Senior Lecturer	Macroeconomics Production Economics
PM Korale Gedera	B.Sc. Agric. M.Sc. (Peradeniya, Sri Lanka) Ph.D. (Brisbane, Australia)	Senior Lecturer	Agriculture Marketing, Livestock Economist
SA Weerasooriya	B.Sc. Ag.Tech.&Mgt., M.Sc. (Peradeniya, Sri Lanka), M.Sc., Ph.D. (Oregon State, USA)	Senior Lecturer	Policy Analysis Econometrics
RMHM Rathnasekara	B.Sc. Ag.Tech.&Mgt., M.Sc. (Peradeniya, Sri Lanka)	Lecturer	Agricultural Economics
VW Jayaweera	B.Sc. Ag.Tech.&Mgt., MBA (Peradeniya, Sri Lanka)	Lecturer	Business Management
MHR Abhayarathne	B.Sc. Ag.Tech.&Mgt. (Peradeniya, Sri Lanka), MBA (PIM-SJP)	Lecturer	Business Management

* Attached to Mahailuppallama Sub Campus

Department of Agricultural Engineering

WP Ranjith Premalal De Silva	B.Sc. Agric. (Peradeniya, Sri Lanka), M.Sc. (AIT, Thailand), Ph.D. (Cranfield, UK)	Senior Professor	Natural Resource Engineering & Geo-informatics
DAN Dharmasena	B.Sc. Agric. (Peradeniya, Sri Lanka), Ph.D. (Cranfield, UK)	Professor	Post-harvest Engineering & Technology
MIM Mowjood	B.Sc. Agric. (Peradeniya, Sri Lanka), M.Sc., Ph.D. (Iwate, Japan)	Professor	Environmental Engineering
KSP Amaratunga	B.Sc. Agric. (Peradeniya, Sri Lanka), M.Agri., Ph.D. (Kyushu, Japan)	Professor	Agricultural Process Engineering
NDK Dayawansa	B.Sc. Agric. (Peradeniya, Sri Lanka), M.Sc. (AIT, Thailand), Ph.D. (New Castle, UK)	Professor	Water Resource Engineering & Geo-informatics
DN Jayatissa	B.Sc. Agric. (Peradeniya, Sri Lanka), M.Sc., Ph.D. (VPI&SU, USA)	Senior Lecturer	Agricultural Mechanization
S Pathmarajah*	B.Sc. Agric., M.Phil. (Peradeniya, Sri Lanka), D.Tech. (AIT, Thailand)	Senior Lecturer	Irrigation Engineering & Management
AK Karunarathne	B.Sc. Agric. (Peradeniya, Sri Lanka), M.Sc., Ph.D. (Saitama, Japan)	Senior Lecturer	Environmental Engineering
RMRD Abeyrathna	B.Sc. Agric., M. Sc. (Peradeniya, Sri Lanka)	Lecturer	Automation and Robotics in Agriculture
FHCA Silva	B.Sc. Agric., M. Sc. (Peradeniya, Sri Lanka)	Lecturer	Farm Power & Machinery
SSK Chandrasekara	B.Sc. Agric., M.Phil. (Peradeniya, Sri Lanka) PhD. (Sejong University, Republic of Korea)	Lecturer	Irrigation and Drainage
EMGP Hemachandra	B.Sc. Agric., M. Sc. (Peradeniya, Sri Lanka)	Lecturer	Water Resources Modelling and Management/ Groundwater
AMYM Alahakoon	B.Sc. Agric., M.Phil. (Peradeniya, Sri Lanka)	Lecturer	Energy Systems in Agriculture
ABP Bandara	B.Sc. Agric., M. Sc. (Peradeniya, Sri Lanka)	Lecturer	Water Quality & Pollution Control

* Attached to Mahailuppallama Sub Campus

Department of Agricultural Extension

LNAC Jayawardena	B.Sc. Agric. (Peradeniya, Sri Lanka), MBA (Colombo, SL), Chartered Marketer, Dip M (CIM-UK), Attorney-at-Law (Sri Lanka), NDHRM (CIPM), Ph.D. (Zlin, CR)	Senior Lecturer	Human Resource Management, Organizational Management & Professional Development
UI Dissanayake	B. Sc. Agric. (Peradeniya, Sri Lanka), M.Phil (Peradeniya, Sri Lanka), Ph.D. (Colombo, Sri Lanka)	Senior Lecturer	Information Systems, Agricultural Journalism & Media Use
RMS Wijerathna*	B.Sc. Agric. (Peradeniya, Sri Lanka), M.Sc., PG Dip. App. Stat., M.Phil. (Peradeniya, Sri Lanka)	Senior Lecturer	Agricultural Extension & Agricultural Media
JMPN Anuradha	B. Sc. Ag.Tech. & Mgt. (Peradeniya, Sri Lanka), HND (Edexcel-UK), M.Sc. (Saga, Japan), Ph.D. (Kagoshima, Japan)	Senior Lecturer	Environmental Sociology & Human Ecology
SMSP Kumara	B. Sc. Ag.Tech. & Mgt. (Peradeniya, Sri Lanka), M.A. (UMaine, USA) Ph.D. (Wayne State, USA) (Reading)	Lecturer	Environmental Risk Communication Agricultural Science Communication
BSAK Rathnayake	B. Sc. Ag.Tech. & Mgt. (Peradeniya, Sri Lanka), M.Sc. (Saga, Japan), Ph.D. (Massey, NZ) (Reading)	Lecturer	Agricultural Extension & Agricultural Education
PCB Alahakoon	B. Sc. Ag.Tech. & Mgt. (Peradeniya, Sri Lanka) PG Dip. (Peradeniya, Sri Lanka) M.Sc. (Nottingham Trent, UK), Ph.D. (RMIT, Australia) (Reading)	Lecturer	Organizational Management & Psychology
IDKSD Ariyawanse	B. Sc. Ag.Tech. & Mgt. (Peradeniya, Sri Lanka), M.Sc. (Peradeniya, Sri Lanka) Ph.D. (Kagoshima, Japan) (Reading)	Lecturer	Community Development

* Attached to Mahailuppallama Sub Campus

Department of Animal Science

MPB Wijegunawardene	B.V.Sc. (Peradeniya, Sri Lanka), Ph.D. (Obihiro, Japan) FSLCVS (Sri Lanka)	Senior Professor and Chair	Reproductive Endocrinology & Biotechnology
GLLP Silva	B.Sc. Agric. (Peradeniya, Sri Lanka), Ph.D. (Sydney, Australia)	Senior Professor	Animal Genetics & Breeding
CMB Dematawewa	B.Sc. Agric. (Peradeniya, Sri Lanka), PG Dip. (Edinburgh, UK), M.Sc., Ph.D. (Iowa, USA)	Professor	Animal Breeding
JK Vidanarachchi	B.Sc. Agric. (Sri Lanka), M. Sc. (Memorial, Canada), Ph.D. (New England, Australia)	Professor	Animal Product Technology & Microbiology
BC Jayawardana*	B.Sc. Agric. (Peradeniya, Sri Lanka), M.Sc., Ph.D. (Obihiro, Japan)	Professor	Animal Food Hygiene
RMC Deshapriya	B.V.Sc. M.Sc (Sri Lanka), M.Phil. (Reading, UK), Ph.D. (Yamaguchi, Japan)	Professor	Dairy Hygiene
PHP Prasanna	B.Sc. Agric., M.Phil. (Peradeniya, Sri Lanka), Ph.D. (Reading, UK)	Professor	Dairy Science
ARSB Athauda*	B.Sc. Agric. (Peradeniya, Sri Lanka), M.Sc. (AIT, Thailand), Ph.D. (James Cook, Australia)	Professor	Aquaculture & Fisheries Biotechnology
KKSP Kodithuwakku	B.Sc. Agric. (Peradeniya, Sri Lanka), Ph.D. (HKU, Hong Kong)	Professor	Animal Biotechnology
SMC Himali	B.Sc. Agric., M. Sc. (Peradeniya, Sri Lanka), Ph.D. (Iowa, USA)	Professor	Meat Science and Egg Technology
MBP Kumara Mahipala	B.Sc. Agric., M. Sc. (Peradeniya, Sri Lanka), M. Sc. (Kagawa, Japan)	Senior Lecturer	Ruminant Nutrition & Forage Science
TS Samarakone	B.Sc. Agric. (Sri Lanka), M.Sc. (Peradeniya, Sri Lanka), M.Sc. (Obihiro, Japan), Ph.D. (Saskatchewan, Canada)	Senior Lecturer	Animal Behaviour & Welfare
WEMIJ Ekanayake	B. Sc. Ag.Tech. & Mgt. (Peradeniya, Sri Lanka) M.Sc. (North Dakota, USA), Ph.D (Massey University, New Zealand)	Senior Lecturer	Ruminant Nutrition & Agrostology &

WNU Perera	B. Sc. Ag.Tech.&Mgt, M.Sc. (Peradeniya, Sri Lanka), Ph.D (Massey University, New Zealand)	Senior Lecturer	Monogastric Nutrition
P Weththasinghe	B.Sc. Animal Sci. & Fisheries. (Peradeniya, Sri Lanka), M.Sc. (Wageningen, Netherlands), Ph.D (NMBU, Norway)	Senior Lecturer	Fish Nutrition, Immunology & Microbiology
ETS Madhubhashini	B.Sc. Fisheries & Marine Sciences (Ruhuna, Sri Lanka), M.Sc. (Colombo, Sri Lanka), Ph.D. (University of Chinese academy of Sciences, China)	Lecturer	Fisheries, Aquaculture & Marine science
WMMP Hulugalla	B. Sc. Animal Sci & Fisheries (Peradeniya, Sri Lanka)	Lecturer	Animal Environmental Physiology
SGVB Warnasooriya	B. Sc. Animal Sci & Fisheries (Peradeniya, Sri Lanka)	Lecturer	Forage Science
LMJNK Disanayaka	B. Sc. Ag.Tech.&Mgt. (Peradeniya, Sri Lanka)	Lecturer	Poultry Science
PRMK Fernando	B. Sc. Ag.Tech.&Mgt. (Peradeniya, Sri Lanka)	Lecturer	Animal Genetics and Breeding

* Attached to Mahailuppallama Sub Campus

Department of Crop Science

WAJM De Costa	B.Sc. Agric. (Peradeniya, Sri Lanka), Ph.D. (Reading, UK)	Senior Professor	Stress Physiology
B Marambe	B.Sc. Agric. (Sri Lanka), M. Agr., D.Agr. (Hiroshima, Japan)	Senior Professor	Weed Science
S Samita	B.Sc. Agric., M.Phil. (Peradeniya, Sri Lanka), Ph.D. (Edinburgh, UK)	Senior Professor	Biostatistics/Statistics
DKNG Pushpakumara	B.Sc. Agric. (Peradeniya, Sri Lanka), M.Sc., Ph.D. (Oxford, UK)	Senior Professor	Forest Genetics/ Forestry/ Agroforestry
WAP Weerakkody	B.Sc. Agric. (Peradeniya, Sri Lanka), M.Agr. (Hiroshima, Japan), Ph.D. (Peradeniya, Sri Lanka)	Senior Professor	Vegetable Crops & Protected Culture
T Sivananthawerl	B.Sc. Agric. (Peradeniya, Sri Lanka), M.Sc. (AU, Norway), Ph.D. (Göttingen, Germany)	Professor	Silviculture/ Agroforestry
NAASP Nissanka	B.Sc. Agric. (Peradeniya, Sri Lanka), M.Sc., Ph.D. (Guelph, Canada)	Professor	Crop Physiology/ Agroforestry
LDB Suriyagoda	B.Sc. Agric. (Peradeniya, Sri Lanka), M.Sc.Crop Science (Saga, Japan), M.Sc. Biostatistics (Peradeniya, Sri Lanka), Ph.D. (University of Western Australia)	Professor	Crop Modeling/ Agronomy
CK Beneragama	B.Sc. Agric. (Peradeniya, Sri Lanka), M.Sc. (Obihiro, Japan), M.Phil. (Peradeniya, Sri Lanka), Ph.D. (Iwate, Japan)	Professor	Floriculture & Landscape Horticulture
HMGSB Hitinayake	B.Sc. Agric. (Peradeniya Sri Lanka), M.Phil. (Peradeniya, Sri Lanka), M.Sc. (Oxford, UK), Ph.D. (Wales, UK)	Professor	Agroforestry/ Plantation Agriculture
AJ Mohotti	B.Sc. Agric. (Peradeniya, Sri Lanka), Ph.D. (Reading, UK), C.Biol. (Sri Lanka)	Professor	Plantation Agriculture/ Plant Physiology
KWLK Weerasinghe	B.Sc. Agric., M.Phil. (Peradeniya, Sri Lanka), Ph.D. (ANU, Australia)	Professor	Plantation Agriculture / Ecophysiology

JP Eeswara	B.Sc. Agric., M.Phil. (Peradeniya, Sri Lanka), Ph.D. (Aberdeen, UK)	Associate Professor	Fruit Crops/ Tissue Culture
BL Peiris	B.Sc. Agric. (Peradeniya, Sri Lanka), M.Sc. Comp. Sci. (Colombo, Sri Lanka), M.Sc. Stat, Ph.D. (Iowa State, USA)	Senior Lecturer	Statistics
WMTP Ariyaratne*	B.Sc. Agric. (Peradeniya, Sri Lanka), M.Sc. (Obihiro, Japan), Ph.D. (Iwate, Japan)	Senior Lecturer	Molecular Genetics & Agronomy
RHG Ranil*	B.Sc. Agric., Ph.D. (Peradeniya, Sri Lanka)	Senior Lecturer	Agronomy/ Forestry/ Conservation Biology
DMSB Dissanayaka	B. Sc. Ag.Tech.&Mgt. M.Sc. (Peradeniya, Sri Lanka), M.Agr. (Hiroshima, Japan), Ph.D. (Hiroshima, Japan)	Senior Lecturer	Agronomy/ Plant Nutritional Physiology
SHNP De Silva*	B.Sc. Agric. (Peradeniya, Sri Lanka), M.Sc. (UTokyo, Japan), Ph.D. (UTokyo, Japan)	Senior Lecturer	Crop Modeling/ Agronomy
LM Rankoth*	B. Sc. Ag.Tech.&Mgt. (Peradeniya, Sri Lanka), Ph.D. (Missouri, USA)	Senior Lecturer	Organic Farming, Sustainable Agriculture, Agronomy
LVY Weeraratne	B. Sc. Ag.Tech.&Mgt. (Peradeniya, Sri Lanka), M. Sc. (Peradeniya, Sri Lanka), Ph.D. (Massey University, New Zealand)	Senior Lecturer	Plant Stress Physiology, Agronomy, Crop Improvement Techniques
HMPC Kumarihami	B.Sc. Agric. (Sabaragamuwa, Sri Lanka), M.Sc. Agric. (JEJUNU, ROK), Ph.D. Agric. (GNU, ROK)	Senior Lecturer	Postharvest Physiology & Technology of Horticultural Crops
HGJT Kumara	B. Sc. Ag.Tech.&Mgt. (Peradeniya, Sri Lanka)	Lecturer	Plantation Agriculture

* Attached to Mahailuppallama Sub Campus

Department of Food Science & Technology

DCK Illeperuma	B.Sc. Agric., M.Sc. Agric. (Peradeniya, Sri Lanka), Ph.D. (Maryland, USA)	Senior Professor	Postharvest Technology/Sensory Evaluation
WMT Madhujith	B.Sc. Agric. (Peradeniya, Sri Lanka), M.Sc., Ph.D. (Memorial, Canada), M.I. Biol. (Sri Lanka), Fulbright Fellow.	Professor	Food Safety/Lipid Chemistry
BDR Prasantha	B.Sc. Agric., M.Sc. Agric., (Peradeniya, Sri Lanka), Ph.D. (Berlin, Germany), C.Biol (Sri Lanka), F.I.Biol (Sri Lanka), Fulbright Fellow (USDA-ARS, California)	Professor	Food Preservation and Processing/Postharvest Technology of Grains
BEP Mendis	B.Sc. Agric. (Peradeniya, Sri Lanka), M.Sc., Ph.D. (S. Korea)	Professor	Food Quality and Safety /Microbiology
RPNP Rajapakse	B.Sc. Agric., M.Sc. Agric. (Peradeniya, Sri Lanka), M.Sc., Ph. D. (S. Korea)	Professor	Food Microbiology/ Biochemistry
KMS Wimalasiri	B.Sc., Ph.D. (Peradeniya, Sri Lanka), M.I.Chem.C. , C. Chem., (Sri Lanka)	Professor	Food Analysis /Carbohydrate Chemistry/Flavor Chemistry
PC Arampath	B.Sc. Agric. (Peradeniya, Sri Lanka), M. Sc. (AIT, Thailand)	Senior Lecturer	Food Process Engineering/Food Quality Management Systems
NY Jayanath	B.Sc. Food Sci. & Tech., M.Sc. Food & Nutrition (Peradeniya, Sri Lanka), M.Sc. Food Eng. (AIT, Thailand)	Lecturer	Food Process Engineering/ Food Packaging
DMSS Daundasekara	B.Sc. Food Sci. & Tech. (Peradeniya, Sri Lanka), M.Sc. (Peradeniya, Sri Lanka), Ph.D. (Houston, USA)	Senior Lecturer	Food Science and Nutrition
ERJ Samarakoon	B.Sc. Agri. Tech. & Mgt. (Peradeniya, Sri Lanka), Ph.D. (Memorial, Canada)	Lecturer	Carbohydrate Chemistry
GM Somaratne	B.Sc. Food Sci. & Tech. (Peradeniya, Sri Lanka), M.Sc. (Peradeniya, Sri Lanka),), Ph.D. (Massey, New Zealand)	Lecturer	Food and Nutrition

Department of Soil Science

RMCP Rajapaksa	B.Sc. Agric., M.Phil. (Peradeniya, Sri Lanka), Ph.D. (Saskatchewan, Canada)	Professor	Soil Microbiology
WAU Vitharana	B.Sc. Agric. (Peradeniya, Sri Lanka), M.Sc., Ph.D. (Ghent, Belgium)	Professor	Digital Soil mapping and land use planning
WS Dandeniya	B.Sc. Agric., M.Phil. (Peradeniya, Sri Lanka), Ph.D. (Cornel, USA)	Professor	Microbial ecology and genomics of soils
RS Dharmakeerthi	B.Sc. Agric., M.Sc. (Peradeniya, Sri Lanka) Ph.D. (Guelph, Canada)	Professor	Soil Fertility and Plant Nutrition
AMCPK Attanayaka	B.Sc. Agric., M.Sc. (Peradeniya, Sri Lanka) Ph.D. (Kansas State University, USA)	Senior Lecturer	Soil and Environmental Chemistry
DN Vidana Gamage	B.Sc. Agric., M.Phil. (Peradeniya, Sri Lanka), Ph.D. (McGill University, Canada)	Senior Lecturer	Soil Physics and Vadose-zone Hydrology
AD Igalavithana	B.Sc. Agric., M.Sc. (Peradeniya, Sri Lanka), Ph.D. (Kangwon National University, Korea)	Senior Lecturer	Soil Chemistry
HGK Hiranthika	B.Sc. Ag.Tech.&Mgt., M.Sc. (Peradeniya, Sri Lanka)	Lecturer	Soil Fertility and Plant Nutrition
PDBJ Palihakkara	B.Sc. Ag.Tech.&Mgt., M.Sc. (Peradeniya, Sri Lanka)	Lecturer	Soil Mineralogy
DMMR Dissanayaka*	B.Sc. Ag.Tech.&Mgt. (Peradeniya, Sri Lanka)	Lecturer	Soil Taxonomy and Land Use Planning

* Attached to Mahailuppallama Sub Campus

Mahailluppallama Sub-Campus

BC Jayawardana	B.Sc. Agric. (Peradeniya, Sri Lanka), M.Sc., Ph.D. (Obihiro, Japan)	Professor	Animal Food Hygiene
ARSB Athauda	B.Sc. Agric. (Peradeniya, Sri Lanka), M.Sc. (AIT, Thailand), Ph.D. (Australia)	Professor	Aquaculture & Fisheries Biotechnology
S Pathmarajah	B.Sc. Agric., M.Phil. (Peradeniya, Sri Lanka), D.Tech. (AIT, Thailand)	Senior Lecturer	Irrigation Engineering & Management
WMTP Ariyaratne	B.Sc. Agric. (Peradeniya, Sri Lanka), M.Sc. (Obihiro, Japan), Ph.D. (Iwate, Japan)	Senior Lecturer	Molecular Genetics & Agronomy
RHG Ranil	B.Sc. Agric., Ph.D. (Peradeniya, Sri Lanka)	Senior Lecturer	Agronomy/ Forestry/ Conservation Biology
SP Weligamage	B.Sc. Agric., M.Sc. (Peradeniya, Sri Lanka) Ph.D. (Washington State, USA)	Senior Lecturer	Production & Consumption Economics
RMS Wijerathna	B.Sc. Agric. (Peradeniya, Sri Lanka), M.Sc., PG Dip. App. Stat., M.Phil. (Peradeniya, Sri Lanka)	Senior Lecturer	Agricultural Extension & Agricultural Media
SHNP De Silva	B.Sc. Agric. (Peradeniya, Sri Lanka), M.Sc. (UTokyo, Japan), Ph.D. (UTokyo, Japan)	Senior Lecturer	Crop Modeling/ Agronomy
VNS Sirimalwatta	B. Sc. Agric., M. Sc. (Peradeniya, Sri Lanka), M.Sc. & Ph.D. (Hawaii, USA)	Senior Lecturer	Plant Systematics and Population Genomics
LM Rankoth	B. Sc. Ag.Tech.&Mgt. (Peradeniya, Sri Lanka), Ph.D. (Missouri, USA)	Senior Lecturer	Organic Farming, Sustainable Agriculture, Agronomy
DMMR Dissanayaka	B.Sc. Ag.Tech.&Mgt. (Peradeniya, Sri Lanka)	Lecturer	Soil Taxonomy and Land Use Planning

ADMISSION REQUIREMENTS

Admission under general admission policy implemented by the University Grants Commission (UGC)

(1) **B.Sc. in Agricultural Technology and Management**

- (a) G.C.E. (O/L)
Six passes in one sitting with 4 credit passes including Science.
- (b) Passes in at least three of the following G.C.E. (A/L) subjects; Chemistry, Physics, Biology, Geography and Agriculture, obtained at a single attempt.

(2) **B.Sc. in Food Science and Technology**

- (a) G.C.E. (O/L) as specified for admission to B.Sc. in Agriculture Technology and Management degree programme.
- (b) Advanced level with passes in Chemistry, Physics and Biology as subjects

(3) **B.Sc. in Animal Science and Fisheries**

As specified for B.Sc. in Agricultural Technology and Management degree programme.

Admission under Special Provision:

(1) B.Sc. in Agricultural Technology and Management

Every year, a maximum 10 students will be selected for admission to the B.Sc. in Agricultural Technology and Management Degree programme under special provision based on an entrance examination conducted by the Faculty. Permanent employees in the agricultural sector of government institutions who satisfy the requirements given below are eligible to sit the examination for admission.

- (a) A two year Diploma in Agriculture or in Animal Production from any School of Agriculture of the Department of Agriculture, Aquinas University College, Hardy Institute of Technical Training at Amparai, Affiliated University College or an equivalent from any other recognized institution approved by the Ministry of Higher Education.
- (b) G.C.E. (O/L)
Six passes in one sitting with 4 credit passes, including Science.
- (c) Passes in at least three of the following G.C.E. (A/L) subjects in one attempt; Biology (Botany/Zoology), Chemistry, Physics, Geography, and Agriculture.
- (d) Five years of experience in the field of Agriculture/Animal Production after passing the Diploma in Agriculture or Animal Production. This requirement is not applicable to Diploma holders from the former Affiliated University Colleges.
- (e) Age Limit: Should be below 40 years of age.

(2) B.Sc. in Food Science and Technology

Every year, a maximum 3 students will be selected for admission to the B.Sc. Food Science and Technology Degree programme under special provision based on an entrance examination conducted by the Faculty. Permanent employees in the Food Industry who satisfy the requirements given below are eligible to sit the examination for admission.

- (a) GCE (A/L) with passes in Chemistry, Physics and Biology as subjects

- (b) Five years of work experience in a government or private sector institution related to food science and technology
- (c) Age Limit: Should be below 40 years of age.

(3) B.Sc. in Animal Science and Fisheries

Every year, a maximum 5 students will be selected for admission to the B.Sc. in Animal Science and Fisheries Degree programme under special provision based on an entrance examination conducted by the Faculty. They will be charged a course fee determined by the Faculty. Permanent employees in the livestock sector of government institutions who satisfy the requirements given below are eligible to sit the examination for admission.

- (a) A two year Diploma in Animal Production from any School of Animal Husbandry of the Department of Animal Production and Health, Aquinas University College, Hardy Institute of Technical Training at Amparai, Affiliated University College or an equivalent from any other recognized institution approved by the Ministry of Higher Education.
- (b) G.C.E. (O/L)
Six passes in one sitting with 4 credit passes, including Science.
- (c) Passes in at least three of the following G.C.E. (A/L) subjects in one sitting; Biology (Botany/Zoology), Chemistry, Physics, Geography, and Agriculture.
- (d) Five years of experience in the field of Animal Production/Animal Product Processing after passing the Diploma in Animal Production. This requirement is not applicable to Diploma holders from the former Affiliated University Colleges.
- (e) Age Limit: Should be below 40 years of age.

For all three degree programmes, the maximum number of attempts to sit the entrance examination will be **THREE**. The selected candidates should make arrangements to obtain full-time leave to follow the four-year degree programme.

Application forms and other details can be obtained from the Assistant Registrar/Faculty of Agriculture, University of Peradeniya, Peradeniya. Perfected applications should be forwarded through the respective Heads of Institutions to reach the Assistant Registrar, Faculty of Agriculture. Those who wish to obtain application forms and other relevant particulars by post should send a self addressed stamped envelope of the size 9"x4" along with a MO/PO to the value of Rs. 50.00 drawn in favor of the Registrar.

Admission of Foreign Students:

Foreign students are accepted for all three degree programmes under the guidelines decided by the University Grants Commission (UGC). For further information candidates should visit the website of the UGC (<http://www.ugc.lk>).

ANNUAL STUDENT INTAKE (MAXIMUM)

Degree Programme	Under general admission policy	Under special provisions	Foreign students
B.Sc. Ag.Tech&Mgt.	200	10	10
B.Sc. FST	50	03	02
B.Sc. AS&F	50	05	05

MODE OF OPERATION OF ACADEMIC PROGRAMMES

All three degree programmes are offered for a four-year duration and conducted under a semester-based curricular (8 semesters) according to a course unit system. The medium of instruction used in the programmes is English.

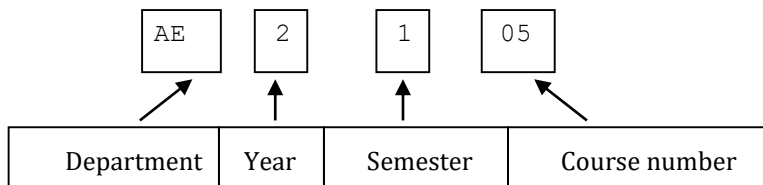
Semester System

A university semester consists of 15 weeks of academic work (teaching and learning) and assessment period. Each course is taught and assessed within the same semester.

Course Notation

The course notation includes a two-letter abbreviation denoting the name of the Department of Study responsible for coordinating the course, followed by a four digit number, of which the first digit represents the year of study, the second digit the semester of the year, the third and fourth digits the serial number of the course.

e.g. AE 2105 denotes the fifth course offered by the Department of Agricultural Engineering in the 1st semester of the second year.



The abbreviations used to denote the eight Departments of Study are as follows:

<u>Name of the Department</u>	<u>Abbreviation</u>
Department of Agricultural Biology	AB
Department of Agricultural Economics & Business Management	EB
Department of Agricultural Engineering	AE
Department of Agricultural Extension	EX
Department of Animal Science	AS
Department of Animal Science	ASF*
Department of Crop Science	CS
Department of Food Science & Technology	FT
Department of Food Science & Technology	BFST**
Department of Soil Science	SS

* Courses offered in B.Sc. Animal Science & Fisheries degree programme only.

** Courses offered in B.Sc. Food Science & Technology degree programme only.

Notes: The courses jointly offered by and equally contributed by several Departments of Study will carry abbreviated names of all involved departments separated by slashes in the notation. e. g., CS/AS

If the contribution by different Departments to the course is not equal, only the abbreviated name of the Department, which contributes to the major part of the said course, will be indicated in the notation.

A course jointly offered by several Departments is listed under one of the Departments for ease of administration.

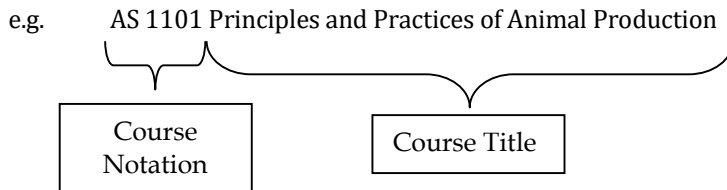
Supplementary and Complementary Courses

A series of compulsory courses designed to improve the language skills, mathematics, laboratory skills, and computer skills of the undergraduate students are offered before the degree programme (supplementary) and during the degree programme (complementary). These supplementary and complementary courses have a common three letter notation 'ATM'.

e.g. ATM 1

Course Title

This is the name of the course, indicated after the course notation.



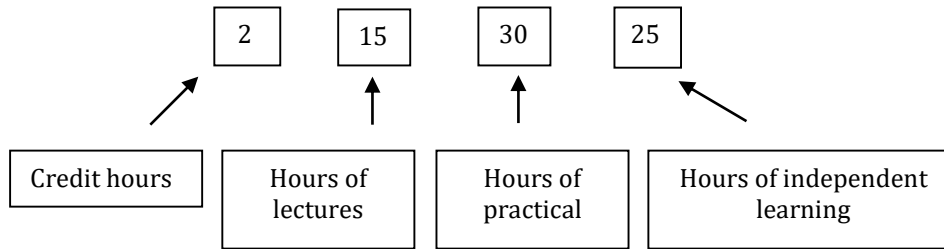
Credit Unit

This is the numeric value assigned to a course, which indicates its relative weight within the degree programme. The credit value of a course is indicated by a single digit following the course notation and course title. **One credit unit** is equivalent to either 15 hours of lectures or 30 hours of practical/tutorials/assignments/field visits.

The curriculum of the B.Sc. Agricultural Technology and Management and B.Sc. Animal Science and Fisheries degrees have been developed using a student learning outcomes based approach. Hence, each credit unit has been assigned a maximum total student work load of 40 hours including lectures, practical and specified independent learning (IL) activities.

A series of digits following the course title indicate the number of credit units, the number of lecture hours, practical hours and independent learning hours assigned to a particular course.

e.g. A 2 credit hour course consisting of 15 hours of lectures, 30 hours of practical and 25 hours of independent learning will be denoted as 2:15/30/25.



B.Sc. DEGREE IN AGRICULTURAL TECHNOLOGY AND MANAGEMENT (B.Sc. AgTech & Mgt)

Objectives and Graduate Profile of the Degree Programme

The B.Sc. AgTech & Mgt degree is offered to impart pertinent knowledge and skills on crop and animal production, agro-product processing technologies, sustainable management of natural resources, socio-economic development and business management; to build up professional attitudes and confidence required; and to produce graduates as specified in the “*Graduate Profile*” given below:

“*Graduate Profile*”: A graduate in AgTech & Mgt shall possess the necessary knowledge, skills and appropriate attitudes, that make him/her capable of making significant contributions to overall development focusing mainly on the issues related to agriculture and allied activities in the manner described below:

- identifying and analyzing problems in agriculture and related sectors at the farm, community, provincial, national and global level,
- proposing innovative, technologically appropriate, environmentally sound, economically feasible and socially acceptable solutions to challenges faced in the development of agriculture, and
- by becoming a professional in the areas of research /academia/management/ entrepreneurship and a socially responsible, ethical team player with effective communication skills.

Structure of the Degree Programme

This eight-semester degree programme comprises of a Core Programme jointly offered by the eight Departments of Study, and an Advanced Programme encompassing twelve Advanced Modules offered by the eight Departments of Study, individually or jointly.

The Core Programme is compulsory for all the students, whereas a student has the freedom of selecting one of the twelve Advanced Modules of his/her choice during the Advanced Programme. The Core

Programme comprises of 108 compulsory credit units including the project. Each Advanced Module comprises of a series of compulsory courses, which offer a minimum of 12 credit units 'unique' to that module, and a series of optional courses.

The courses of the Core Programme are offered during the 1st to 5th and 8th semester, where the 8th semester is devoted for an independent project. The courses of the Advanced Programme are offered during the 6th and 7th semesters. The 6th semester is a transitional semester comprising of courses from both Core and Advanced Programmes.

To be eligible for the award of the degree a student should complete a **minimum** of 126 credit units during the four academic years of the degree programme. The credit unit requirement should include the following:

- (a). 102 credit units from the specified compulsory courses of the Core Programme.
- (b). a minimum of 18 credit units from the specified compulsory and optional courses of the selected Advanced Module.
- (c). 06 credit units from the 'Project' in a selected field of study.

In addition to the above mentioned credited courses, a set of supplementary and complementary courses are offered to impart satisfactory proficiency in English, Sinhala, Tamil, Mathematics, Physics, Information and Communication Technology and Laboratory Skills among all students. It is mandatory for every student to pass the supplementary courses before the 6th semester, and the complementary courses before the 8th semester to be eligible for the award of the degree. While these courses are not credited for the degree programme, separate certificates will be awarded for English and Information and Communication Technology, upon successful completion.

Furthermore, to impart and strengthen the professional skills in students, specific training will be given in the following. The courses in the degree programme have also been formulated with in-built learning activities that facilitate acquisition of one or more specific professional skills.

- Life-skills (during 1st semester)
- Team working skills and leadership development (from 1st semester)
- Portfolio development (from 3rd semester)

- In-plant training (four weeks during long vacations)
- Communication and presentation skills (from 1st to 8th semester)

These trainings will be assessed on satisfactory/unsatisfactory basis and every student should perform at satisfactory level in order to eligible to obtain the degree.

The summary of the structure of the degree programme is given in the following Table. The details of the courses offered during the core programme and advanced programme (twelve modules) are given subsequently.

The Outline of the B.Sc. Degree in Agricultural Technology and Management

SEMESTER	SERIES	COURSES OFFERED	NO OF CREDIT UNITS	
			CORE	ADVANCED
1	1100	Courses of the core programme (compulsory)	16	
2	1200	Courses of the core programme (compulsory)	18	
3	2100	Courses of the core programme (compulsory)	19	
4	2200	Courses of the core programme (compulsory)	20	
5	3100	Courses of the core programme (compulsory)	21	
6	3200	Courses of the core programme (compulsory)	8	} 18*
		Courses of the Advanced modules (compulsory & optional)		
7	4100	Courses of the Advanced modules (compulsory & optional)		
8	4200	Research Project (compulsory)	6	
TOTAL CREDIT UNITS			108	18
TOTAL CREDIT UNITS FOR THE DEGREE			126	

* Every advanced module consists of a minimum total of 18 total credit units, of which at least 12 credit units are unique and compulsory for the given module.

Core Programme of the B.Sc. Agricultural Technology and Management Degree

The core programme comprises of 108 credit units. Courses of the Core Programme have been developed under five broad thematic areas to impart essential knowledge, skills and attitudes that every graduate holding a B.Sc. Agricultural Technology and Management degree should possess. The core courses form the major part of the curriculum and are compulsory for every student. The **five broad thematic areas of the core programme are as follows:**

1. Production and Management of Agricultural Commodities.
2. Agro-product Processing Technologies.
3. Natural Resource Management.
4. Socio-economic Development and Business Management.
5. Professional Development.

Capsules of the Courses of the Core Programme

The capsules of the courses offered during the core programme are listed below under the relevant thematic area.

Thematic Area 1 - Production and Management of Agricultural Commodities

AE 1101 Field Engineering I (2: 10/40/28)

Land suitability for agriculture; Land preparation, types of land development and preparation techniques; Crop establishment; Location for crop farming; Irrigation systems; Remedial measures for irrigation related problems; Farm operations and performance; Machinery and farm tools; Land survey and design of foundations; Water flows: natural and artificial water ways, pipes; Operation of irrigation systems and quantify water use.

AS 1101 Principles and Practices of Animal production (2: 15/30/35)

Present status, existing potentials and constraints in major agro-ecological regions of Sri Lanka for production and management of livestock, poultry and Fish; Classification of farm animals, characteristics of different breeds; Environmental effects on farm animal production and reproduction; Planning and establishing of an animal enterprise; Farm survey

CS 1101 Crop Production Technologies (5: 19/112/36)

Past and present status of agriculture; Overview of technology and management approaches; Dry zone agriculture: introduction, potentials and constraints, farming systems; Controlled environmental agriculture; Traditional and modern technologies; Crop growth and development; Site and crop selection; Propagation techniques; Nursery management techniques; Crop establishment techniques; Field management; Crop Protection: pests, diseases, weeds and management strategies; Harvesting techniques and Post-harvest handling.

SS 1201 Properties and Functions of Soil (3: 30/30/12)

Soil physical properties, conditions and processes: colour, bulk and particle densities, texture, structure and aggregate stability; Soil water: content, potential, retention and water movement; Soil rheology; Soil chemical properties: organic and inorganic colloids, ion exchange, soil reaction, redox potential, salinity and alkalinity; Soil as a habitat for organisms, growth controlling factors, diversity of soil organisms, role of soil organisms in agriculture; Interrelationships among soil properties.

AB 1201 Insect Biology (2: 15/30/35)

Evolution, diversity, adaptation, general biology of insects; External morphology, Growth and development of insects; Principles of insect classification and nomenclature; Characteristics of insects of some economically important taxonomic orders.

AE 1201 Field Engineering II (2: 17/26/32)

Appropriate machinery for land preparation, seeding, planting, weeding, spraying and harvesting in relation to soil consistency, timing of cultivation; Types of suitable farm structures for different types of users; Measure soil consistency and soil strength; Engineering drawings of farm structures and machinery.

AS 1201 Principles of Aquatic Resource Management (1: 11/08/20)

Definitions and classifications of fish; Aquatic resources; Aquatic resource management; Principles of aquaculture; Fisheries legislation; Water quality parameters; Fishing gear and crafts; Aquaculture based farming systems.

CS 1201 Principles of Crop Production (3: 40/10/19)

The science of agronomy and crop production; Agro-climate of Sri Lanka, impact of climate on crop production in the tropics with emphasis on Sri Lanka; Crop growth, growth indices and their value in crop production and yield determination; Fertilizer management in Crops; Fundamentals of weed biology and control; Crop water relationships and irrigation for optimizing yields; Physiology and growth of rice, tropical legumes and tubers in relation to optimizing yields; Introduction to other field crops grown in Tropical Asia.

CS 1202 Plantation Crop Production I (3: 15/60/06)

The tea industry; life cycle, origin, history, botany and tea cultivars; Climate and soil requirements and land selection; Theory and practical aspects of nursery; Replanting: uprooting, grasses and shade trees, soil conservation, planting; Plant nutrition and fertilizer application, pruning, plucking, manufacturing; Pest, disease and weed management; Record keeping.

AB 2101 Principles of Genetics and Breeding (2: 22/16/42)

Mendelian genetics; Chromosomal variations; Linkage and recombination; Hardy Weinberg Equilibrium and gene frequencies; Polygenic inheritance; Central dogma of molecular genetics; Structure and function of genes; Recombinant DNA technology; Genetic resources; Principles of plant breeding and animal breeding.

AS 2101 Anatomy, Physiology and Health Management of Farm Animals (3: 30/30/36)

Structures, functions and regulation of the neuro-endocrine system, digestive system, reproductive system and mammary system of farm animals; Mechanism of thermoregulation and adaptation; Principles of farm animal health management; Immune system and principles of vaccination; Prevalent infectious diseases, parasitic infestations and causal agents; Herd health management programmes; Notifiable diseases of animals in Sri Lanka and health-related legislation.

AS 2102 Principles of Animal Nutrition (2: 25/10/18)

Definitions; Classification of feeds; Digestion, absorption, utilization, assimilation, requirement and functions of nutrients; Deficiencies and toxicities; Unidentified growth factors; Feed additives; Protein and energy evaluation for livestock and poultry; Present status of feed industry, feed resources, Feed formulation and mixing, feeding standards, composition of formulated feeds.

AS 2103 Forage Production and Conservation (2: 23/14/19)

Common grasses and legumes used as animal feed: agronomic description, Establishment and management; Factors affecting quantity and quality; Role of legumes in pasture production; Defoliation and grazing management; Principles and techniques of forage conservation; Estimation of yield and quality of forage.

CS 2101 Principles of Horticulture (2: 20/20/13)

Importance of propagation and nursery management; Quality parameters of seeds; Seed germination; Micro-propagation; Physical and chemical plant growth regulation and manipulation

SS 2101 Soil Fertility and Plant Nutrition (3: 30/30/14)

Nutrient dynamics, availability in soil and cycling in environment; Functions of plant nutrients, deficiency and toxicity symptoms; Soil fertility and productivity; Soil properties and crop production; Sustainable fertility management; Composition, efficient use and fate of chemical fertilizers, manures and amendments; Basics of fertilizer recommendations; Soil nutrient contents as a guide for fertility evaluation; Fertility limitations/constraints and management of soils of Sri Lanka.

AB 2201 Plant Physiology (2: 20/20/40)

Principle physiological aspects of plants that determine the yields of agricultural produce: photosynthesis, respiration, plant-water relationships, translocation, mineral nutrition and plant growth regulation, case studies on each function; Structural features of relevant organelles, cells, tissues and organs. Effect of environmental factors and their interactions; Methods of manipulating interactions to optimize plant yields, measurement of physiological parameters related these functions.

AE 2201 Fluid Mechanics and Irrigation Principles (3: 40/10/33)

Availability and movement of soil water, evapo-transpiration to estimate the crop water requirement; irrigation efficiencies, irrigation scheduling and soil water budgeting; Types of irrigation systems for different crops and cropping systems, remedial measures for irrigation related problems; Principles of fluid mechanics, application to canal and pipe systems; Soil sampling and measurements; Relevance of hydro-meteorological and field data for efficient crop water management; Selection of an irrigation method based on soil, crop, climatic and economic factors; Measurement and quantification of the flows in water ways and pipes.

AS 2201 Ruminant Animal Production (2: 23/14/20)

Routine management practices and tools used; Types of housing; Management of Cattle and Buffalo: herd composition, new born calf, weaning, calf management, heifer management and breeding, pregnant and lactating cow management, clean milk production and milking, dry cow management, calving, stud bull management, semen collection, artificial insemination, draught animal management; Goat and sheep management: herd composition, herd management; techniques used in determining age, body weight, sex, body condition, production and reproduction performance of farm animals; Farm records and planning, interpretation of production/reproduction data.

AS 2202 Poultry and Swine Production (2: 25/10/26)

Management of functional groups of poultry: parent stock, incubation, brooder stock, growers, layers and broilers; Egg quality determination; Incubator and brooder management; Management of different functional groups of swine: management of boar, sow, piglings, growers/fatteners; Herd composition; Culling of unproductive poultry and swine; Housing systems for poultry and pigs; Identification systems for poultry and pigs; Farm planning and record keeping in poultry and pig farms.

CS 2201 Plantation Crop production II (3: 36/18/18)

Rubber industry; Establishment of rubber plantations: rootstock, budwood nurseries, bud-grafting techniques, field establishment, soil conservation, fertilizer application, weed control; Economic yields and tapping; Rubber manufacturing: types of products; Yield improvement: characteristics of commonly grown clones; Coconut sector; Soil and climatic requirements; Coconut varieties; Planting materials; Field planting systems, management of young plantations; Soil and moisture conservation, fertilizer management; Intercropping of coconut lands; Growth and yield physiology of coconut; Classification of export agriculture crops;

Cultivation, management and processing of beverage crops: cocoa and coffee; Spice crops: cardamom, clove, nutmeg, cinnamon and pepper; Oil crops: citronella and lemon grass; Miscellaneous crops: Betel, vanilla and papaya.

AB 3101 Insect Pests of Crops (2: 15/30/35)

Population biology of insect pests; Principles of insect pest management; Biological control, use of predators, parasitoids and microbial insect pathogens; Chemical control of insect pests; Host plant resistance; Integrated insect pest management; Bionomics and control of insect pests of rice and other cereals, plantation crops, export agriculture crops, fruit crops, field crops, vegetable crops, greenhouse crops, ornamental plants and stored products.

AB 3102 Diseases of Crops (3: 30/30/60)

Crop loss assessment and economic importance; Microorganisms associated with plant diseases, agents of plant diseases, causal organisms/ agents, types of damage; Diseases and management of vegetable and plantation crops; Postharvest diseases of fruits and vegetables; Fungicides; Beneficial microorganisms in disease management, microorganisms and quality of post-harvest products, microorganisms for the control of soil borne diseases.

CS 3101 Horticultural Crop Production (2: 26/08/06)

Horticulture industry: present status and future potential; Physiology of fruit set, growth, development and ripening; Non-seasonal bearing; Improvement of economically important fruit crops; Environmental requirement of vegetable crops; Improvement of crop yield; Environmental requirements for cut flowers and potted plants; Requirements for export markets; Propagation and cultivation practices; Problems and remedies; Principles of landscape gardening: elements, soft and hard landscape materials, basic planting design for a home garden, types of gardens.

CS/AS 3201 Farming Systems (2: 27/06/15)

Classification of important crops in Sri Lanka; Importance and contribution to the national economy and human diet: field crops, horticultural crops and plantation crops; Agronomic requirements influencing the crop selection by growers; Centers of crop production; Farming systems and patterns in Sri Lanka; Principles and potentials of organic farming; Potentials of medicinal and aromatic plants; Principles of animal based integrated farming systems: types, components, nutrient availability, bio-resource flow, resource allocation; Advantages, potential and constraints; Suitable animals and animal based farming systems for a given location

Thematic Area 2 - Agro-Product Processing Technology

FT 1201 Biochemistry and Human Nutrition (3: 33/24/30)

Chemistry and metabolism of carbohydrates, proteins, fat, mineral and vitamin; Nucleic acids and biosynthesis of protein; Chemical analysis of macronutrients; Nutritional aspects of major food groups: Vegetarianism; Analysis of milk; Nutritional labelling.

FT 2101 Agricultural Product Quality and Processing (2: 20/20/05)

Quality of raw material for agricultural processing; fruits, vegetables, grains and legumes, roots, tuber, fiber, flower and masticatory crops; Harvest maturity; Water quality in food processing; Proximate analysis of foods; Suitability of raw material for processing; Hygiene in food processing; Sensory properties of food; Quality standards in food processing.

FT 2201 Preservation of Agricultural Produce (2: 26/08/22)

Concepts of food deterioration; Factors affecting microbial activity; Effect of moisture on food quality; Chemical preservation; Food preservation through high and low temperature; Non thermal preservation of foods; Study of industrial processing of fruits and vegetables; Basic concepts of appropriate packaging.

AS 3101 Animal Product Processing Technology (2: 15/30/10)

Harvesting techniques to minimize losses, handling of animal produce during harvesting; Process of slaughtering poultry, swine and cattle; Instruments used in slaughtering; Evaluation of carcass quality; Nutritional aspects of milk, meat/fish and eggs; Quality of major animal produce with respect to processing; Post-harvest handling and storage of animal based produce; Preservation of animal based produce; Processing of milk, meat and fish: processing techniques and equipment.

AE 3201 Postharvest Technology (2: 21/18/31)

Importance in food security; Pre-harvest factors affecting quality and shelf life, sites of losses and loss management techniques; Harvesting techniques; Post-harvest handling; Pre-cooling, packaging and storage techniques for fruit, vegetables, grains, masticatory, medicinal and plantation crops. Physiological disorder prevention and management; Specific post-harvest treatments for locally important crops and fruit ripening.

Thematic Area 3 - Natural Resources Management**AB 1101 Botany of Field Crops (1: 05/20/15)**

Introduction to botanical nomenclature: scientific *vs* colloquial names, international code; Introduction to botanical terminology; Vegetative organs, reproductive organs, fruits; Vegetative morphology, floral morphology; Studies on family characters of field crops.

SS 1101 Soil Resource and Ecosystem (2: 15/30/20)

Significance of soil as a natural resource; Composition and constituents; Minerals and rocks: formation, properties and classification; Organic fractions; Rock weathering, organic matter decomposition and soil formation; Diagnostic horizons and profile description; Soil catena, landscape and elements of landform with special reference to dry-zone; Soil sampling and equipment.

AB 1202 Crop Systematics (1: 10/10/20)

Introduction to systematics; Taxonomic hierarchy, methods and principles of systematics, biosystematic methods, the evolutionary process; Agricultural uses of plants; Studies on family characters economically important plants

AE 3101 Land and Water Resources Engineering (3: 34/22/36)

Hydro-meteorological parameters, measurements and quantification, hydro-meteorological networks, past and present hydrological setup in Sri Lanka; Surface and subsurface water bodies: wells, large tanks, cascade systems, reservoirs; Soil erosion and impact on water yield, soil and water conservation, land productivity and sedimentation; Soil, water and air pollution; Use of wastewater in agriculture; Water quality analysis, Hydro-meteorological instruments and data collection, interpretation and utilization of maps, hydraulic conductivity and infiltration, rainfall-runoff relationships.

CS 3103 Principles of Forestry (1: 15/00/10)

Ecosystem concept; Nature, carrying capacity, energetics, productivity of forest ecosystems; Ecological succession, disturbances and recovery, species strategies; Characteristics and diversity of major forest types in Sri Lanka, crop-wild relatives; Forests and natural vegetations as resource base for development; Problems and strategies in Sri Lanka; Agroforestry, plantation forestry and natural forest management including wildlife management, potential of integration into sustainable land use management.

SS 3101 Management of Soils of Sri Lanka (2: 20/20/08)

Soil survey and soil classification systems; Classification of soils of Sri Lanka; Soil, water and air pollution due to agricultural and other activities; Fate of pollutants in soil; Impact of pollutants on soil, water and air quality: soil degradation and erosion, eutrophication and global warming; Pollution control; Potentials and limitations of Sri Lankan soils for land use planning with special emphasis on Agricultural management.

EX/EB 3201 Socio-Economic aspects of Natural Resources Management (1: 12/06/20)

Economic principles of sustainable management of natural resources; Management of natural resources: social, ethical and organizational issues; Social and organizational issues of abiotic resources: soil, mineral, water, and atmosphere; Evaluation of management interventions.

Thematic Area 4 - Socio-Economic Development and Business Management**EB 1101 Applied Agribusiness (2: 15/30/35)**

Concepts of Management; Role of marketing, marketing management in farm Business; Ideal farm layout and applications; Inventory taking and valuation techniques of farm assets; Elementary farm accounting, net-income and net-worth statements; Planning and budgeting techniques: partial budget, capital budgeting, total farm budget, cash flow budget, price and yield information. Farm management techniques.

EX 1101 Developmental Extension (2: 10/40/30)

Importance of agricultural extension; Rural social institutions; Importance of participatory planning and development; Socio-economic data collection, needs assessment, planning and organizing training programmes; Problems in a pluralistic society: economic, ethnic, religious, gender and regional differences; Liaise and communicate with stakeholders in a multi disciplinary environment.

EB 2101 Principles of Economics (3: 40/10/40)

Theory of production: Factor-product relations, factor-factor relations; Theory of Cost; Consumer choice and preferences; Theory of demand, demand elasticities; Theory of markets: perfectly and imperfectly competitive markets; National income accounting; Consumption, savings and income determination; Investment; Theory of money: demand and supply of money, market equilibrium; IS-LM curves, equilibrium; Aggregate demand, aggregate supply, equilibrium; Employment, unemployment inflation.

EX 2201 Principles of Human Behaviour (3: 40/10//60)

Role of social science in development; Sociology, psychology, communication and education concepts in agriculture and community development; Principles and objectives of agricultural extension; Adoption and diffusion of innovations; Extension teaching methods; Agricultural extension organizations in Sri Lanka.

EB 2201 Development Economics (2: 25/10/45)

Concept and evolution of growth and development; Characteristics of developing nations; Theories of economic development; Role of agriculture in development; Theories of agricultural development; Policy interventions in Agriculture in Sri Lanka; Linkages among population, poverty, trade, technology, human resources, environment and capital with development; Fundamentals of development planning; Interpretation of key development statistics.

EX 3101 Organizational Management (2: 15/30/35)

Basic concepts and common social problems in organizations; Contribution of Human Resource Management (HRM) procedures and techniques for enterprise development; Types of communication in organizations; Improving effectiveness and efficiency; Role of a leader and a team member; Skills for good inter- personal relationship with work group.

EB 3101 Business Creation and Management (2: 15/30/35)

The concept of business, business theories and the organizational environment; Agribusiness and non-agribusiness management; Concepts and principles of Marketing Management; Management functions, types, skills, role and their importance; Models of managerial decision making and their applications; the concept of a learning organization; Cooperate Social Responsibility and environmental responsibility; The concepts of Strategic Management; TQM; Concepts of entrepreneurship and intrapreneurship; Business Planning.

EB 3201 Project Analysis (1: 10/10/20)

Importance of project analysis; Project cycle and modules of project analysis; Identification of project costs and benefits; Valuation of project costs and benefits; Financial and economic aspects of project analysis; Discounted and undiscounted measures of projects worth; Collection of relevant data and performing a basic project analysis.

Thematic Area 5 - Professional Development**CS 3102 Statistical Methods (2: 30/00/15)**

Concept of variability, basic principles of sampling, parameters and estimates, measures of centre and dispersion, frequency distributions; Types of variables: discrete and continuous; Concept of probability: probability distributions and probability density functions; Normal distributions: t and F distributions; Concept of hypothesis testing: testing means, Z -test, and t -test, testing homogeneity of variance, F -test, types of errors and power of the test; Studying linear relationships: simple linear regression and correlation.

CS 3201 Design and Analysis of Experiments (2: 30/00/15)

Principles of experimental designs; Estimate of experimental error and precision of experiments; Basic designs used in agriculture: completely randomized design, randomized complete block design, Latin square design and modification to Latin square design; Principles of ANOVA and construction of ANOVA table for basic designs: Mean separation and commonly used mean separation procedures; Concept of interaction and factorial experiments, analysis of factorial experiments, two-factor and higher order, modifications to factorial experiments: split-plot design, strip-plot design, nested factor design; Methods to increase precision of experiments, analysis of covariance.

EX 2202 Career Development (1: 10/10/20)

Locally and globally available career opportunities; Competencies, qualifications and attributes required for different careers; Personal SWOT analysis and self-development plan; Preparation of a learning portfolio.

AB/AE/AS/CS/EB/EX/FT/SS 4201 Project (6)

Problem identification, investigation, data collection, analysis and interpretation, conclusions; Scientific writing; Scientific presentations.

Course Sequence of the Core Programme

Semester	Notation	Courses and Credit Hours	Credits
1100	AB 1101 AE 1101 AS 1101 CS 1101 EB 1101 EX 1101 SS 1101	Botany of Field Crops (1: 05/20/15) Field Engineering I (2: 10/40/28) Principles and Practices of Animal Production (2: 15/30/35) Crop Production Technologies (5: 19/112/36) Applied Agribusiness (2: 15/30/35) Developmental Extension (2: 10/40/30) Soil Resource and Ecosystem (2: 15/30/20)	16
1200	AB 1201 AB 1202 AE 1201 AS 1201 CS 1201 CS 1202 FT 1201 SS 1201	Insect Biology (2: 15/30/35) Crop Systematics (1: 10/10/20) Field Engineering II (2: 17/26/32) Principles of Aquatic Resource Management (1:11/08/20) Principles of Crop Production (3: 40/10/19) Plantation Crop Production I (3: 15/60/06) Biochemistry and Human Nutrition (3: 33/24/30) Properties and Functions of Soil (3: 30/30/12)	18
2100	AB 2101 AS 2101 AS 2102 AS 2103 CS 2101 EB 2101 FT 2101 SS 2101	Principles of Genetics and Breeding (2: 22/16/42) Anatomy, Physiology and Health Management of Farm Animals (3: 30/30/36) Principles of Animal Nutrition (2: 25/10/18) Forage Production and Conservation (2: 23/14/19) Principles of Horticulture (2: 20/20/13) Principles of Economics (3: 40/10//40) Agricultural Product Quality and Processing (2: 20/20/05) Soil Fertility and Plant Nutrition (3: 30/30/14)	19

2200	AB 2201 AE 2201 AS 2201 AS 2202 CS 2201 EB 2201 EX 2201 FT 2201 EX 2202	Plant Physiology (2: 20/20/40) Fluid Mechanics and Irrigation Principles (3: 40/10/33) Ruminant Animal Production (2: 23/14/20) Poultry and Swine Production (2: 25/10/26) Plantation Crop Production II (3: 36/18/18) Development Economics (2: 25/10/45) Principles of Human Behaviour (3: 40/10/60) Preservation of Agricultural Produce (2: 26/08/22) Career Development (1: 10/10/20)	20
3100	AB 3101 AB 3102 AE 3101 AS 3101 CS 3101 CS 3102 CS 3103 EB 3101 EX 3101 SS 3101	Insect Pests of Crops (2: 15/30/35) Diseases of Crops (3: 30/30/60) Land and Water Resources Engineering (3: 34/22/36) Animal Product Processing Technology (2: 15/30/10) Horticultural Crop Production (2: 26/08/06) Statistical Methods I (2: 30/00/15) Principles of Forestry (1: 15/00/10) Business Creation and Management (2: 15/30/35) Organizational Management (2: 15/30/35) Management of Soils of Sri Lanka (2: 20/20/08)	21
3200	AE 3201 CS 3201 CS/AS 3201 EB 3201 EX/EB 3201	Postharvest Technology (2: 21/18/31) Design and Analysis of Experiments (2: 30/00/15) Farming Systems (2: 27/06/15) Project Analysis (1: 10/10/20) Socio-Economic aspects of Natural Resource Management (1: 12/06/20)	8
4200	AB/AE/AS/ CS/EB/EX/ FT/SS 4201	Research Project	6
TOTAL			108

Capsules of the Supplementary Courses

- ATM 1 English I** (to acquire IELTS band 3 level of proficiency before the 2nd semester) **(200 hrs)**
Sentence patterns and grammar structures; importance of vocabulary and subject matter glossary; summarizing, skimming and scanning of texts; listening, understanding, making notes and feed back; Computer Aided Language Learning: CALL; communication, presentation.
- ATM 2 Information and Communication Technology** (before 2nd semester) **(100 hrs)**
Windows type Operating System for maintaining files and folders, commonly available Windows based word processing software, commonly available Windows based spreadsheet software, Windows based presentation software, Windows based database development software, internet browsing, electronic mail for effective communication.
- ATM 3 Basic Mathematics** (before 2nd semester) **(90 hrs)**
Equations of straight lines, circle and parabola, counting techniques, common mathematical series, set theory, 2nd and 3rd order polynomials, matrix algebra, functions and limits, derivatives of functions and differentiation, integration, application of differentiation and integration in agriculture.
- ATM 4 Basic physics** (only for students who have not followed Physics at G.C.E. A/L before 2nd semester) **(15 hrs)**
Mechanics of machines, potential and kinetic energy, motion in circular path, Concept of prime mover and self driven devices for land operations
- ATM 5 Basic Laboratory Skills** (to acquire before the 2nd semester) **(15 hrs)**
Laboratory safety; Analytical balances, Laboratory glassware and handling, Preparation of standard solutions, Acid base titrations

Capsules of the Complementary Courses

ATM 6 English II (to acquire IELTS band 6 level of English language proficiency by the 8th semester) **(180 hrs)**

Formal and informal writing, answering questions, report writing, group discussions, communication and feed back; error free sentence and equations, short descriptions, reading and reporting on editorials; Technical writing/ model reports, summarizing/ abstracting, social etiquette, CV writing and filling applications, facing interviews, presentation and short speeches, guided writing, communication, addressing at different fora.

ATM 7 National Language – Sinhala* (only for non-Sinhala speaking students to acquire minimum verbal communication skills in Sinhala by the eighth semester) **(90 hrs)**

Introduction to Sinhala language; Nature, potentials and unique features of modern spoken Sinhala; Popularly used terms and expressions; Communication used in places of common interest; Greetings; Jargon of traders, teachers, students and children; Small talks; Instructions; Colloquial Sinhala.

ATM 8 National Language – Tamil* (only for non-Tamil speaking students to acquire minimum verbal communication skills in Tamil) **(90 hrs)**

Introduction to Tamil language; Nature and unique features of modern spoken Tamil, Commonly used terms and expressions in Tamil: inquiring and giving directions to places of common interest, greetings, instructions, bidding farewell, small talk jargons of traders, students, teachers and children; Terms and expressions in colloquial Tamil.

ATM 9 Student Portfolio

Portfolio Development by the students will be a partial requirement of the degree programme. A portfolio document has to be perfected by each student during the degree programme and submitted at the end of the eighth semester for evaluation.

* The Faculty has partnered with the National Institute of Language Education and Training (NILET) since 2017 to offer Sinhala for Tamil students and Tamil for Sinhala students as a mechanism of social harmony. ATM 7 & 8 will be offered before starting the academic programme.

Advanced Programme of the B.Sc. Agricultural Technology and Management Degree

The Advanced programme of the B.Sc. AgTech & Mgt. degree consists of twelve Advanced Modules, each providing in-depth knowledge and skills 'unique' to a particular discipline. Each Advanced Module must have a minimum of 12 compulsory credit units unique to that module and a minimum total of 18 credit units.

A student can select an advanced module of his/her choice during the 5th semester (3100 series). The courses of the Advanced Modules are offered during the 6th (3200) and 7th (4100) semesters. Each Advanced Module comprises of a set of compulsory courses (*i.e.* all the students in a particular module must follow) and a set of optional courses (*i.e.* courses that are not compulsory, but a selected number could be chosen by students to follow based on their preference and the advice of the Department of Study).

Students in the 4200 series will have the freedom to follow advanced courses offered in 3200 series over and above the credit requirement of the degree programme.

To be eligible for the award of the degree, a student should successfully complete a minimum of 18 credit units from the selected advanced module, of which a minimum of 12 credit units should be from the compulsory courses unique to that module.

The 12 modules of the Advanced programme offered by the eight Departments of Study are as follows:

	Name of the Module	Department of Study
1	Advanced Crop Production Technology	Crop Science
2	Agricultural and Biosystems Engineering	Agricultural Engineering
3	Animal Science and Technology	Animal Science
4	Applied Economics and Business Management	Agricultural Economics and Business Management
5	Development Communication and Organizational Management	Agricultural Extension
6	Economic and Applied Entomology	Agricultural Biology
7	Food Science and Technology	Food Science and Technology
8	Genetic Improvement of Plants	Agricultural Biology
9	Molecular Biology and Biotechnology	Agricultural Biology
10	Plant Pathology and Microbiology	Agricultural Biology
11	Plantation Management and Forestry	Crop Science
12	Soil and Environment	Soil Science

The aim and the sets of compulsory and optional courses of each advanced module offered are given in the following section.

Module: Advanced Crop Production Technology
(Department of Crop Science)

Agriculture will become more intensified in the future with more land being used for non-agricultural purposes. Traditional crop production will diminish in accordance with the social changes taking place in the world especially with respect to environmental issues. New feasible and highly potential techniques as well as new concepts have recently been introduced into crop production systems. The public is also concerned about safe food. The suggested module addresses the constraints and limitations of present crop production technology and approaches to overcome these problems with advanced techniques that have been introduced. The courses of the module have been designed to impart knowledge and skills required to practice advanced crop production technology. After successful completion of the courses of this module students will have the ability to practice and disseminate the knowledge on advanced technology in order to ensure sustainability in crop production.

Compulsory courses	Optional courses
CS 3206 Tissue Culture (2: 20/20/08)	CS 3205 Commercial Nursery Management (1: 10/10/10)
CS 3207 Fruit and Vegetable Production (2: 25/10/20)	CS 3209 Post-harvest Quality Management in Horticultural Products (1: 12/06/10)
CS 3208 Crop Physiology (2: 25/10/20)	C S 3210 Organic Crop Production Systems (1: 10/10/10)
CS 4103 Statistical Methods II (2: 30/00/15)	CS 3211 Integrated Weed Management Systems (1: 12/06/12)
CS 4104 Scientific Research and Communication in Crop Science (1: 08/14/10)	CS 4106 Statistical Modelling (1: 15/00/10)
CS 4109 Protected Culture (1:10/10/10)	CS 4113 Urban Agriculture (1: 10/10/10)
CS 4110 Floriculture and Landscape Horticulture (2: 20/20/40)	
CS 4111 Rice Production Technology (1: 12/06/10)	
CS 4112 Advanced Field Crop Production (2: 30/00/05)	

Module: Agricultural & Bio-systems Engineering
(Department of Agricultural Engineering)

This advanced programme has been meticulously designed to provide the students with an in-depth knowledge on diverse engineering applications in Agriculture, Environment, and Post-harvest Processing to cater to the existing demand for the graduates who could meet the challenges in the field. The knowledge and skills imparted by this advanced programme will be based on the solid foundation given by the core programme of the Faculty, and would ensure that the essential advanced Engineering aspects are covered in the compulsory courses of the module. While achieving this objective, the students are given ample flexibility in acquiring knowledge on many attractive diverse topics through a very rich collection of optional courses. Upon completion of the advanced module the students will be able to analyze industrial problems in agriculture, post harvest processing, environmental and other biological systems in relation to its engineering aspects, and provide viable solutions based on engineering principles.

Compulsory courses	Optional courses
AE 3202 Thermodynamics (2: 30/00/12)	AE 3205 Engineering Mathematics (2: 26/08/15)
AE 3203 Irrigation Systems Design & Management (2: 25/10/12)	AE 3206 Farm Power & Machinery (2: 23/14/26)
AE 3204 Energy and Waste Management (2: 20/20/15)	AE 3207 Environmental Hydrology (2: 15/30/15)
AE 4101 Advanced Land & Water Resources Engineering (2: 20/20/20)	AE 4105 Remote Sensing in agricultural Resource Management (2: 20/20/16)
AE 4102 Food Process Engineering (2: 22/16/15)	AE 4106 Geographic Information Systems (2: 15/30/12)
AE 4103 Farm Mechanization (2: 20/20/30)	AE 4107 Electronics & Instrumentation (2: 25/10/08)
AE 4104 Engineering Design Philosophy (2: 20/20/40)	AE 4108 Post-harvest Handling of Perishable Crops (2: 22/16/20)
	AE 4109 Structural Designs for Commercial Farming (2: 20/20/20)
	AE 4110 Computer Applications in Agricultural Engineering (2: 20/20/30)
	AE 4111 Paddy Field Engineering (1: 05/20/10)
	AE 4112 Soil and Water Conservation Engineering (1: 10/10/08)
	CS 4106 Statistical Modelling (1: 15/00/10)

Module: Animal Science & Technology
(Department of Animal Science)

Improving animal production and product processing represent integral and essential components of agricultural development. Identified priority development areas such as diversifying agriculture with livestock, integrating livestock with crops under farming systems, and increasing productivity of animals are given major emphasis in the teaching and research programmes of the Department of Animal Science. In addition, training in product technology is provided in view of the anticipated expansion of the processed food production sub-sector and “convenience food” marketing sector. While the courses offered by the Department in the core programme of the curriculum are designed to provide sound background on the principles and practices in Animal Science, the courses in the advanced module are formulated to impart in-depth knowledge and skills in important specific aspects of Animal Science and Technology. Upon successful completion of this module, the graduates will be capable of addressing the issues and problems related to animal agriculture sector and effectively contribute to development by being engaged in research, academic, management and/or entrepreneurial activities.

Compulsory courses	Optional courses
AS 3201 Applied Animal Nutrition (3: 40/10/08)	AS 3204 Wildlife and Ecosystems (2: 20/20/06)
AS 3202 Dairy Product Technology (2: 25/10/08)	AS 3205 Forage Resources and Production (2: 14/32/20)
AS 3203 Applied Animal Physiology (2: 24/12/30)	AS 3206 Feed Processing Technology (1: 13/04/04)
AS 4101 Meat, Fish & Egg Product Technology (2: 25/10/34)	FT 3203 Food Preservation (2: 30/00/10)
AS 4102 Applied Genetics and Animal Breeding (2: 25/10/20)	AS 4106 Animal Biotechnology (2: 20/20/40)
AS 4103 Animal Health Management (2: 24/12/13)	AS 4107 Ornamental Fisheries Conservation and Management (2: 25/10/35)
AS 4104 Inland and Marine Fisheries Management (2: 20/20/40)	AS 4108 Livestock Economics (2: 30/00/15)
AS 4105 Scientific Research & Communication in Animal Science (1: 05/20/15)	AS 4109 Animal By-product Technology (2: 26/08/15)
	AS 4110 Livestock Farm Planning (2: 25/10/15)
	AS 4111 Integrated Animal Production Systems (2: 25/10/20)
	AS 4112 Beef Cattle and Micro-livestock Production (2: 25/10/08)
	CS 4103 Statistical Methods II (2: 30/00/15)
	EX 4102 Human Resource Management (2: 24/12/34)

Module: Applied Economics & Business Management
(Department of Agricultural Economics and Business Management)

Need assessment stage of the curriculum development process has indicated the importance of economics and business management for performing effectively in both the private and government sectors. The advanced module on Applied Economics and Business Management is designed to allow students to acquaint themselves in key areas of Economics as well as Business and Management. The array of courses offered has been designed in such a manner so that the graduate is equipped with knowledge and skills necessary to conceptualize and implement socio-economic development as well as business and management related strategies. As reflected in the name itself, emphasis is made both on theory as well as its practical applications. The naming of the module is in keeping with the trends observed in leading Universities in the world where the term "Agricultural Economics" is being replaced by "Applied Economics".

Compulsory courses	Optional courses
EB 3202 Microeconomics (2: 30/00/50)	EB 3205 Agricultural Marketing (2: 30/00/50)
EB 3203 Macroeconomics (2: 30/00/50)	EB 3206 Financial and Management Accounting (2: 25/10/45)
EB 3204 Marketing Management (2: 20/20/40)	EB 3207 Advanced Development Economics (2: 30/00/50)
EB 4101 Resource and Environmental Economics (2: 25/10/45)	EB 3208 Production Economics (2: 30/00/50)
EB 4102 Quantitative Techniques for Business & Economics (2: 20/20/40)	EB 3209 International Business and Trade (2: 20/20/40)
EB 4103 Research Methods for Business & Economics (2: 25/10/45)	EX 3203 Organizational Behaviour (2: 24/12/34)
EB 4104 Business Psychology (2: 25/10/45)	EB 4105 Financial Management (2: 30/00/50)
	EB 4106 Entrepreneurship (2: 25/10/45)
	EB 4107 Policy Analysis (2: 30/00/50)
	EB 4108 International Agribusiness (2: 25/10/45)
	EB 4109 Advanced Project Analysis (2: 30/00/50)
	EB 4110 Business Strategy (2: 20/20/40)
	EX 4102 Human Resource Management (2: 24/12/34)

Module: Development Communication & Organizational Management
(Department of Agricultural Extension)

Apart from the knowledge and skills related to technical agriculture, it is essential for the graduates to be trained as managers of organizations to enable them to effectively harness human and other organizational resources to achieve greater productivity. In developmental activities, it is also important to effectively communicate at different levels with various target groups using the most appropriate approaches. This module is designed to provide required in-depth knowledge and skills on effective communication and organizational management including the ability to analyze and develop suitable interventions in: communication, extension, education and training, managing human resources, organizational behaviour, Journalism and media use, project management, information management, community development, sociological and gender issues. In the process of learning the above, students will develop appropriate individual, interpersonal and team skills needed for successfully facing challenges in future careers.

Compulsory courses	Optional courses
EX 3201 Extension Education (2: 24/12/40)	EX 3203 Organizational Behaviour (2:24/12/34)
EX 3202 Communication: Theory & Practice (2: 24/12/40)	EX 3204 Information Management 2:15/30/35)
EX 4101 Rural Sociology (2: 24/12/34)	EB 3204 Marketing Management (2:20/20/40)
EX 4102 Human Resource Management (2:24/12/34)	EX 4106 Project Development & Management (2:24/12/34)
EX 4103 Productivity Enhancement Training (2:00/60/20)	EX 4107 Gender Issues in Development (2:24/12/34)
EX 4104 Journalism and Media Use (2:20/20/40)	EX 4108 Community Development Approaches (2:24/12/34)
EX 4105 Social Research Methods (2:24/12/44)	CS 4103 Statistical Methods II (2:30/00/15)
	EB 4106 Entrepreneurship (2:25/10/45)

Module: Economic & Applied Entomology
(Department of Agricultural Biology)

Entomology is an important area in Agricultural production, Agricultural Environment Management and Agriculture related industries. Research and development, and extension activities in Entomology are active in major government departments, research institutes, universities, pesticide related companies and national and international organizations demanding trained and skilled personnel. Hence, this advanced module is designed to produce graduates who are able to fulfil this urgent and continuous need. The courses in the advanced module in Economic and Applied Entomology have been designed to provide introductory yet comprehensive knowledge and skill in Entomology and related study areas. Students will also be introduced to broad concepts of Agricultural Entomology and apply them more specifically and in depth in the field. After successful completion of this module, students will become conversant in all aspects of Economic and Applied Entomology, and have the ability to critically analyze and effectively solve the Entomology related problems in research and development and in agricultural productions; to plan and implement innovative Entomology related ventures as a career development; to innovatively integrate entomological knowledge and skill with other study areas in agriculture. They will have better opportunities to take up postgraduate research work in Entomology without any further prerequisites locally or internationally.

Compulsory courses	Optional courses
AB 3201 Structure and Function of Insects (2:15/30/35)	CS 3210 Organic Crop Production Systems (1:10/10/10)
AB 3202 Ecological Insect Pest Management (2:25/10/40)	AB 4120 Nematology (1:10/10/20)
AB 3203 Insects in Farm Animals and Public Health (2:15/30/35)	AB 4122 Computer Applications in Entomology (2:10/40/30)
AB 3204 Honey Bee Culture (2:15/30/35)	
AB 4101 Insect Systematics (2:/15/30/35)	
AB 4102 Pesticide Management (2:25/10/40)	
AB 4103 Current Trends in Entomology (2:00/60/20)	
AB 4104 Product Entomology (2:15/30/35)	
AB 4105 Scientific Research & Communication in Biology (1:10/10/20)	

Module: Food Science & Technology
(Department of Food Science and Technology)

Food Science and Technology is one of the rapidly developing areas of current industrial importance in Sri Lanka. It is identified as one of the thrust areas for human resource development assistance by national and international agencies. About 120 large-scale industries and over 300 medium-small enterprises in Sri Lanka are engaged in food processing while more than 6 research institutes are involved in research on processing of foods. Absence of intense value addition and post-harvest handling and preservation technologies have become a major constraint in making available the agricultural produce to the consumers, thus creating economic losses to the farmers. The advanced module in Food Science and Technology is designed to provide knowledge and skills pertaining to Food Science and Technology to undergraduates in Agricultural Technology and Management so that they will be able to combine the concepts on production of agricultural raw materials for quality processing, and meet the demands of the food industry.

Compulsory courses	Optional courses
FT 3201 Food Chemistry (2:27/06/20)	FT 3204 Applied Human Nutrition (2: 25/10/20)
FT 3202 Food Microbiology (2:23/14/30)	AB 3211 Recombinant DNA Technology (2: 20/20/40)
FT 3203 Food Preservation (2:30/00/10)	AS 3202 Dairy Product Technology (2:25/10/08)
FT 4101 Food Analysis (2:20/20/20)	EB 3204 Marketing Management (2: 20/20/40)
FT 4102 Food Processing for Product Development (2:30/00/10)	FT 4105 Practical in Product Development (1:00/30/10)
FT 4103 Food Process Technology (1:15/00/15)	FT 4106 Food Sanitation and Sensory Evaluation (2:27/06/30)
FT 4104 Scientific Research & Communication in Food Science (1:10/10/20)	FT 4107 Food Packaging (1:15/00/15)
AS 4101 Meat, Fish and Egg Product Technology (2:25/10/34)	FT 4108 Advanced Post-harvest Technology of Fruits and Vegetables (1:15/00/20)
CS 4103 Statistical Method II (2:30/00/15)	FT 4109 Food Regulations & Food Quality Control (1:15/00/05)
	FT 4110 Fats and Oils Technology (1:15/00/15)
	EX 4102 Human Resource Management (2:24/12/34)

Module: Genetic Improvement of Plants
(Department of Agricultural Biology)

Genetic improvement is one of the most important areas for increasing the productivity of crop plants. To meet the increasing demand for food requirements of the ever increasing population, knowledge and skills on plant genetic improvement are needed. The advanced module in Genetic Improvement of Plants is designed to incorporate the areas of Genetics and Breeding, Plant Physiology, Plant Biochemistry and Biodiversity. It also addresses the conventional and modern crop breeding strategies, environmental interactions and *in vitro* techniques for more effective crop improvement programmes. Upon the completion of this module, the student will have the ability to effectively contribute to plant improvement programmes and development of new plant varieties.

Compulsory courses	Optional courses
AB 3205 Applied Genetics & Plant Breeding (2:20/20/40)	AB 3202 Ecological Insect Pest Management (2:25/10/40)
AB 3206 Plant Genetic Resources (1:10/10/20)	AB 3212 Plant Pathology (2:25/10/10)
AB 3207 Quantitative Genetics (2:20/20/40)	CS 3206 Tissue Culture (2:20/20/08)
AB 3211 Recombinant DNA Technology (2:20/20/40)	CS 4108 Conservation and Management of Medicinal Plants (1:12/06/10)
AB 4105 Scientific Research & Communication in Biology(1:10/10/20)	
AB 4106 Plant Eco Physiology (2:15/30/35)	
AB 4107 Developmental Biology of Plants (2:20/20/40)	
AB 4108 Post-harvest Physiology of Fruits and Vegetables (1:10/10/20)	
AB 4109 Economic Botany (1:15/00/25)	

Module: Molecular Biology & Biotechnology
(Department of Agricultural Biology)

Molecular Biology and Biotechnology is an important field with considerable future impact in agricultural technology and management. This module has been designed to equip the students with sound knowledge in Molecular Biology and hands-on-experience in relevant techniques. In addition, aspects of recombinant DNA technology, biosafety, bioprospecting and their applications in the industry at global level will be addressed, with emphasis on the prospects of practical usage of biotechnology in Sri Lanka. Upon the completion of this module the students will be able to apply various methodologies used in molecular biology and biotechnology to meet the future demand of the industry.

Compulsory courses	Optional courses
AB 3208 Cell Biology (2:20/20/40)	AE 3204 Energy and Waste Management (2:20/20/15)
AB 3209 Plant Biochemistry (2:20/20/40)	AB 4107 Developmental Biology of Plants (2:20/20/40)
AB 3210 Molecular genetics (2:20/20/40)	AB 4109 Economic Botany (1:15/00/25)
AB 3211 Recombinant DNA technology (2:20/20/40)	AB 4116 Microbial Biotechnology (1:10/10/20)
AB 4105 Scientific Research & Communication in Biology (1:10/10/20)	AS 4106 Animal Biotechnology (2:20/20/40)
AB 4110 Applied Biotechnology (1:15/00/25)	FT 4101 Food Analysis (2:20/20/20)
AB 4111 Bioinformatics (1:5/20/15)	
AB 4112 Practicum in Molecular Biology (1:00/30/00)	
AB 4113 <i>In vitro</i> Techniques (2:20/20/40)	

Module: Plant Pathology & Microbiology
(Department of Agricultural Biology)

Food and agricultural sector in Sri Lanka needs professionals trained in disease management with a sound background in microbiology to meet the demands stipulated by F.A.O. and W.H.O. for the industry. The advanced module in Plant Pathology and Microbiology is designed to provide a sound knowledge on the basic principals relating to molecular and cellular biology of plant pathogens and beneficial microorganisms, as well as their impacts on other organisms and their environment. In addition, the students will have proficiency in laboratory and communication skills. It is envisaged that a student upon completion of this advanced module will be able to acquire and articulate specialized knowledge and skills relevant to plant diseases and microorganisms and the ability to apply them to solve problems and contemporary issues in Plant Pathology and Microbiology.

Compulsory courses	Optional courses
AB 3212 Plant Pathology (2:25/10/10)	AB 3205 Applied Genetics and Plant Breeding (2:20/20/40)
AB 3213 Microbiology (2:25/10/10)	AB 4119 Immunology (1:15/00/25)
AB 3214 Clinical Plant Pathology (2:15/30/35)	AB 4120 Nematology (1:10/10/20)
AB 4102 Pesticide Management (2:25/10/40)	AB 4121 Yeast Microbiology and Fermentation Technology (1:10/10/20)
AB 4105 Scientific Research and Communication in Biology (1:10/10/20)	
AB 4114 Postharvest Pathology (1:10/10/20)	
AB 4115 Virology (1:10/10/20)	
AB 4116 Microbial Biotechnology (1:10/10/20)	
AB 4117 Agricultural and Environmental Microbiology (2:25/10/45)	
AB 4118 Practicum in Molecular Microbiology (1:00/30/50)	

Module: Plantation Management & Forestry
(Department of Crop Science)

Plantation industry is a well-established sector in the country whilst forestry and forest management is identified as an essential component of sustainable agricultural production and environmental management. However, the potential of plantation industry is much more than the level it exists at present and the lack of proper management seems to be the main hindrance for the development of the industry. Furthermore, an integrated approach to land use and environmental management is an important concern in plantation and forest management. The suggested module addresses the issues related to existing problems of the plantation industry and approaches to overcome these problems whilst providing an integrated approach to environmental and land management using recently introduced concepts of agroforestry and forestry. The courses of the module have been designed to impart knowledge and skills required for plantation management and forestry. After successful completion of the courses of this module students will have the ability to manage a plantation more efficiently and use forestry concepts in land and environmental management.

Compulsory courses	Optional courses
CS 3202 Management of Rubber, Coconut & Export Agricultural Crops (4:15/90/30)	CS 3205 Commercial Nursery Management (1:10/10/10)
CS 3203 Agroforestry Systems (2:25/10/10)	CS 3208 Crop Physiology (2: 25/10/20)
CS 3204 Tree Diversity and Improvement (2:20/20/15)	CS 4105 Farming System Analysis (1:10/10/10)
CS 4101 Tea Plantation Management (2:10/40/10)	CS 4106 Statistical Modelling (1:15/00/10)
CS 4102 Forest Management (2:25/10/10)	CS 4107 Crop Environment Interactions (1:10/10/20)
CS 4103 Statistical Methods II (2:30/00/15)	CS 4108 Conservation and Management of Medicinal Plants (1:12/06/10)
CS 4104 Scientific Research & Communication in Crop Science (1:08/14/10)	

Module: Soil & Environment
(Department of Soil Science)

Fertile soil has become one of the major limited natural resources for agriculture worldwide as a result of continuous degradation of usable land due to diverse natural and anthropogenic factors including agricultural practices. This has led to a wide range of environmental problems such as pollution of atmosphere and aquatic environments, and imposing health risks on all living organisms. Due to the growing public concern in this regard, new policies have been introduced aiming for a sustainable land management while ensuring food security and environmental health. The advanced module on Soil and Environment has been designed to address this vital issue providing an in-depth knowledge on soil as a natural resource, within the context of space and time, and use of traditional and modern technologies to sustain the soil productivity. After successful completion of the courses in this advanced module, a student will have the ability to identify the root causes of soil related agronomic and environmental problems and suggest and/or develop appropriate technologies to overcome those problems.

Compulsory courses	Optional courses
SS 3201 Soil Physics (2:20/20/04)	SS 3205 Soil Survey and Classification (2:20/20/12)
SS 3202 Soil Mineralogy (2:20/20/12)	CS 3210 Organic Crop Production Systems (1:10/10/10)
SS 3203 Soil Microbiology (2:20/20/10)	EB 3204 Marketing Management (2:20/20/40)
SS 3204 Sustainable Soil Fertility Management (2:20/20/08)	SS 4105 Land Use and Environment (2:20/20/10)
SS 4101 Soil Chemistry (2:20/20/12)	<i>Pre-requisite: SS 3205 Soil Survey and Classification</i>
SS 4102 Land Degradation and Conservation (2:25/10/04)	SS 4106 Research Techniques in Soil Science (2:25/10/04)
SS 4103 Soil and Environmental Quality (2:20/20/10)	AE 4105 Remote Sensing in Agricultural Resource Management (2:20/20/16)
SS 4104 Scientific Research and Communication in Soil Science (1:10/10/10)	CS 4103 Statistical Methods II (2:30/00/15)
	CS 4111 Rice Production Technology (1:12/06/10)
	EB 4101 Resource and Environmental Economics (2:25/10/45)
	EX 4102 Human Resource Management (2:24/12/34)

Capsules of the Courses of the Advanced Programme

The capsules of the courses in the 12 advanced modules of the B.Sc. Agricultural technology and Management degree is given below

Advanced Crop Production Technology

CS 3206 Tissue Culture (2: 20/20/08)

Tissue culture facilities; media preparation, aseptic environment; Regeneration methods; Tissue culture applications; Propagation: virus elimination, cost analysis, low cost applications; Crop improvement: androgenesis, somatic hybridization, in vitro fertilization, embryo rescue; Mutagenesis, genetic engineering; Secondary metabolite production; Germplasm conservation.

CS 3207 Fruit and Vegetable Production (2: 25/10/20)

Modern practices of orchard management; Fruit and vegetable based cropping systems; Physiological basis of vegetable crop growth; Fruit and vegetable crop improvements; Fruit and vegetable marketing and exports; Institutional support for fruit and vegetable sub sector.

CS 3208 Crop Physiology (2: 25/10/20)

Importance of crop physiology in yield improvement of agricultural crops; Methods of improving crop yield through manipulation of radiation interception and conversion, improved carbon balance and partitioning, optimizing environmental factors that determine crop development; Methods of improving crop yield in stressed environments; Investigating important physiological parameters.

CS 4103 Statistical Methods II (2:30/00/15)

Analysis of incomplete block designs: balanced and partially balanced incomplete block designs; confounding in factorial experiments; analysis of 2^n factorial experiments with confounding; non parametric procedures for 2-sample case; non parametric procedures to analyse data from designed experiments; analysis of proportions: 1-sample and 2-sample cases; analysis of 3-way tables.

CS 4104 Scientific Research and Communication in Crop Science (1:08/14/10)

Preparation and writing of an effective scientific proposal: justification, develop hypothesis, identification of research methods; Reporting results of statistical analysis; Communication theories and learning process: preparation of effective presentation, OHP and multimedia; Evaluation of seminar and presentation.

CS 4109 Protected Culture (1:10/10/10)

Recent advances of greenhouse structures and modifications; Environment control strategies; Hydroponics and micro irrigation applications; Management of high value crops; Sanitation and pest control in protected culture.

CS 4110 Floriculture and Landscape Horticulture (2: 20/20/40)

Major species in demand, cultivation of cut flowers and potted plants; Interior decorations; History, principles and elements of landscaping; Types of gardens; Landscaping requirements for home gardens and town planning; Selection of suitable soft and hard landscape materials; Drawing of landscape designs.

CS 4111 Rice Production Technology (1: 12/06/10)

New approaches to develop sustainable rice production systems for different agro-ecological zones; Application of new technologies on crop management and crop improvement; Necessity of mechanization of rice production.

CS 4112 Advanced Field Crop Production (2: 30/00/05)

Advanced aspects of field crop management tropical cereals other than rice: legumes, root and tuber crops, tobacco and narcotics, sugarcane, fibre crops and oil crops Crop-specific physiology of yield determination and avenues of crop yield improvement; Integrated management of field crops.

CS 3205 Commercial Nursery Management (1:10/10/10)

Classification of commercial nurseries; Selection and preparation of potting media; Management strategies in commercial nurseries; Planning and production of propagules of horticultural; crops coconut, rubber and export agricultural crops of Sri Lanka; Certification programmes of commercial nurseries.

CS 3209 Postharvest Quality Management in Horticultural Products (1: 12/06/10)

Anatomical and morphological characteristics of fruits, vegetables, ornamentals and cut flowers in relation to postharvest quality; Effect of nutrients and cultural practices on postharvest quality; Maturity concepts and harvesting indices; Quality aspects in marketing horticultural products; Postharvest treatments and packing, transport; Current trends in postharvest research.

CS 3210 Organic Crop Production Systems (1: 10/10/10)

Organic and alternative crop production; Organic and low input cropping systems; Development and management of organic systems; Nutrient management in organic and low input systems; Plant protection in alternative cropping; Biodynamic cropping; Research trends in organic farming; Organic systems in Sri Lanka.

CS 3211 Integrated Weed Management Systems (1: 12/06/12)

The world of weeds and invasive alien plants; Systems approach in weed management in agricultural and natural ecosystems; Economics and decision making in weed management; Use of bio-herbicides and bio-control agents in IWM; IWM systems in annual perennial cropping systems; Natural ecosystems; IWM systems and environment.

CS 4106 Statistical Modelling (1:15/00/10)

Regression diagnostic statistics; linearization techniques in regression; multiple linear regression; sequential and partial sum of squares; model selection procedures: stepwise, forward and backward; non linear regression; growth models: concept, development, testing and validation.

CS 4113 Urban Agriculture (1: 10/10/10)

Concepts and dimensions of urban agriculture; Urban agriculture related specific goals and targets; Urban environment and micro-climate of urban home gardens; Urban agricultural systems; Species characteristics; Species selection and management techniques in urban agriculture for food security and nutrition; Income generation and employment creation; Environmental conservation.

Agricultural and Biosystems Engineering**AE 3202 Thermodynamics (2: 30/00/12)**

Concepts and definitions of thermodynamics; work and heat; First law of thermodynamics and applications; Second law of thermodynamics and applications; Property relationships; Perfect gases; Power generation cycles; Vapor compression refrigeration cycle; Mixture of perfect gases and psychrometries.

AE 3203 Irrigation Systems Design & Management (2: 25/10/12)

Hydraulic phases of surface irrigation event; Infiltration and irrigation system designing; Designing surface irrigation system; Designing a best canal cross section; Bulk water allocation process, structural and organizational requirements; Designing micro irrigation system: selection of pump, selection of filters, fertigation equipment and other accessories; Basic indices used in irrigation system evaluation.

AE 3204 Energy and Waste Management (2: 20/20/15)

Waste characteristics: basic biological processes, biochemical transformation; Different effluent treatment methods and systems; Solid waste management; Bio-fuels and solar energy; Reduction of transport; Atmospheric pollution control by reduction of fossil fuel and fuel-wood use.

AE 4101 Advanced Land and Water Resources Engineering (2: 20/20/20)

Issues in land and water resources: sources of water, estimation of surface water yield; Reservoir water balance; Design of small reservoirs: operation and maintenance of a minor reservoirs, sedimentation, trap efficiency, control of siltation; Occurrence of groundwater, exploitation and geophysical methods; Determination of aquifer parameters; Ground water flow and flow-nets; Estimation of recharge, methods of

water conservation and improving recharge; Sustainability of surface and ground water resources.

AE 4102 Food Process Engineering (2: 22/16/15)

Primary and secondary food processing; Materials handling systems; Rheology; Fluid delivery systems and fluid flow applications; Peeling and size reduction; Drying and design of crop dryers; Theory of extrusion; Dielectric and IR heating; Microwave cooking; Separation; Processing plant layout design and application of cleaner production principles in processing; Field training of rice, spices, fruits and vegetables, milk handling and processing equipment.

AE 4103 Farm Mechanization (2: 20/20/30)

Socio-economic and management issues for mechanization; Advanced tillage operations; Methods, tools and equipment, Operations from planting to harvesting of cereals, pulse crops, vegetables, fruits and plantation crops; Machinery used in animal production.

AE 4104 Engineering Design Philosophy (2: 20/20/40)

Design philosophy: design concepts, existing designs, prototype development and industrial applications; Responsibilities of a design engineer; Engineering design process and the scientific methodology; Proposal formulation: problem definition, objectives, alternatives, synthesis, appraisal, user consideration, design specifications, computer aided design tools, planned creativity; Feasibility studies; Project implementation process; Testing and evaluation, Organizational structure and improvements; Patents and code of ethics.

AE 3205 Engineering Mathematics (2: 26/08/15)

Special algebraic functions and vector algebra; Advanced topics in calculus; partial differentiation, differential equations, multiple integration; Numerical methods; Solution to a system of equations: curve fitting, interpolation, computer based analyses.

AE 3206 Farm Power & Machinery (2: 23/14/26)

Alternate sources of energy; windmills and hydro-power generators, solar energy, Stress-strain relationships; Torsion; Beam deflection; Clutch mechanisms; Power transmitting methods: gears, belts, chains; Bearings; Systems in and operating principles of tractors.

AE 3207 Environmental Hydrology (2: 15/30/15)

Physical, chemical and biological properties of water; Fate and transport of contaminants in surface and subsurface water bodies; Modeling of contaminant transport; Urban hydrology; Atmospheric pollution, acid rain and eutrophication; Forest hydrology; Hydraulics of sediment transport and bioremediation; Wet and Marshy land hydrology; Natural filter systems and bioremediation.

AE 4105 Remote Sensing in Agricultural Resource Management (2: 20/20/16)

History of remote sensing; Remote Sensing principles; Aerial photographs and satellite images; Principles and techniques in interpretation of aerial photographs; Interpretation of digital satellite data, digital image processing; Application of remote sensing in agricultural resource management.

AE 4106 Geographic Information Systems (2: 15/30/12)

Introduction to GIS; History and concepts; Data models, raster and vector; Map projections and coordinate systems; Thematic mapping in GIS; Hardware and software for GIS; Analytical functions; Applications of GIS in agricultural and related disciplines.

AE 4107 Electronics & Instrumentation (2: 25/10/08)

DC circuit analysis, alternating currents and voltages, measurement; Hydro-electrical power generation; Electrical measurements and equipment; Cathode Ray Oscilloscope; Capacitors and inductors, operation, applications; Semiconductors, OPAMP and applications; Instrumentation fundamentals; Transducers for measurement of physical parameters; Control systems, analog to digital conversion; Modern measurement and control systems.

AE 4108 Postharvest Handling of Perishable Crops (2: 22/16/20)

Introduction to fresh produce industry, primary processing for fresh market: packaging, handling and residual waste management, fresh produce storage: design, ethylene

control, cooling time, operation, maintenance and management; Handling systems: modes of transport, tropical and sub tropical fruits and vegetables, root crops, fresh-cuts; Safety and quality control.

AE 4109 Structural Designs for Commercial Farming (2: 20/20/20)

Design of agricultural structures; Selection of building materials; Concrete and properties of concrete; Structural design requirements, simple and composite beams, columns, trusses, frames, stability; Retaining walls and foundations; Professional practice: computer aided calculations and designs, BOQs, specifications; Elements of construction and structural requirements; Crop storage, animal housing and protected agriculture, irrigation and soil conservation; Functional planning; Agricultural structures and roads.

AE 4110 Computer Applications in Agricultural Engineering (2: 20/20/30)

Concept of programming: flow charts, programme control, input and output; Advanced spreadsheet analyses; Computer interfacing; I/O control, computer based automatic data acquisition and control; Other applications in bio-systems.

AE 4111 Paddy Field Engineering (1: 05/20/10)

Engineering aspects of paddy fields; Plough layers and compaction; Conservation of farm lands; Percolation and seepage in paddy fields; Field drainage; Farm system layout and land consolidation; Engineering designs in water reuse systems; Paddy field reclamation; Modeling applications for paddy field management; Environmental issues.

AE 4112 Soil and Water Conservation Engineering (1: 10/10/08)

Water and wind erosion; Conservation structures; water ways, terracing, earth embankments: Farm ponds design of mechanical protection works; Head water flood control

CS 4106 Statistical Modeling (1: 15/00/10)

Refer Advanced Crop Production Technology module

AS 3201 Applied Animal Nutrition (3: 40/10/08)

Feed evaluation; Feeding trials; Nutrient balance experiments; Energy evaluation; Protein evaluation; Feed additives and deleterious substances; Feed formulation and practical feeding of swine, rabbit, poultry and ruminants; Fiber digestion in ruminants and non – ruminants; Protein supplements and rumen manipulation; Minerals and their interrelationships; Requirements and function of water; Roughage feed ; their improvements and rumen kinetics; Animal feed act.

AS 3202 Dairy Product Technology (2: 25/10/08)

Microbiological and physical properties of milk and milk constituents; Spoilage of milk; Milk born diseases and zoonotic diseases; Mechanism of milk coagulation; Processing of liquid milk; Production and beneficial effects of fermented milk products; Classification of manufacture of cheese; Manufacture of ghee and butter, ice cream, sweetened-condensed milk and dried milk powder.

AS 3203 Applied Animal Physiology (2: 24/12/30)

Growth and development: process, factors affecting and manipulation of growth; Physiology and endocrinology of female reproduction: puberty, reproduction cycles, conception, gestation, parturition and postpartum, seasonality; Physiology and endocrinology of male reproduction: puberty, spermatogenesis and cycles; seasonality; Techniques used to modify reproduction; Physiology and endocrinology of Lactation: mammogenesis, lactogenesis, lactation, galactopoiesis and mammary gland involution; Factors affecting milk yield and composition, techniques used to modify lactation.

AS 4101 Meat, Fish & Egg Product Technology (2: 25/10/34)

Meat and fish industry; Live animal transportation; Animal welfare; Carcass classification; Composition and structure of meat, fish, and egg; Post mortem glycolysis; Eating quality; Spoilage; By-product utilization; Value addition; New product development; HACCP; Quality parameters and Functional properties of eggs; Microbiology and preservation of meat, fish and eggs.

AS 4102 Applied Genetics and Animal Breeding (2: 25/10/20)

Estimation of breeding values; Estimation of heritability and repeatability; Single trait selection; Multiple trait selection; BLUP; Inbreeding and cross breeding; Inbreeding depression and heterosis; Breeding systems; Breeding objectives and designing of breeding programmes.

AS 4103 Animal Health Management (2: 24/12/13)

Anatomy and physiology of immune system; Common diseases of Cattle, Pigs, Sheep, Goat, Poultry, Micro-livestock and Fish, disease prevention and control; Herd health management of farm animals.

AS 4104 Inland and Marine Fisheries Management (2: 20/20/40)

Overview of fisheries management; Aquatic resources of the world; Economically important marine and inland fish species; Mariculture; Water quality: methods of purification; Breeding harvesting and transportation of fish; Fish marketing network; Fisheries extension; Fisheries Act: implementation of fishing laws in Sri Lanka.

AS 4105 Scientific Research and Communication in Animal Science (1: 05/20/15)

Scientific proposals: importance, components, organization; Situation analysis; Literature review, setting objectives, formulating hypothesis, identification of experimental design; Interpretation of results, drawing inferences; Scientific presentations; Preparation of seminar: development of structure, visuals aids, rehearsal and delivery; Discussion.

AS 3204 Wildlife and Ecosystems (2: 20/20/06)

Flora and Fauna ordinance; Protected area; Natural habitat; Degradation and management; Animal etiology; Migration; Feeds and feed resources; Adaptation; Human Elephant conflict; Marine eco system; Eco tourism; Legislations pertinent to wildlife conservation.

AS 3205 Forage Resources and Production (2: 14/32/20)

Natural grasslands and grassland systems in Sri Lanka; Sustainable management of Grassland resources for ruminant livestock production in Sri Lanka; Production of total

rations and leaf meal pellets; Biological residues and treatment techniques to improve the quality of residues.

AS 3206 Feed Processing Technology (1: 13/04/04)

Plant-animal-soil relationship; History of the feed industry; Vitamin & Mineral milestones; Feed microbiology; Field microorganisms and storage microorganisms; microbial spoilage of feed and its prevention; Feed Processing; needs for processing, methods of processing, processing equipment; Feed mixing and compounded feed production; Practical exposure to commercial feed production.

FT 3203 Food Preservation (2: 30/00/10)

Refer Food Science and Technology module.

AS 4106 Animal Biotechnology (2: 20/20/40)

Genomic analysis of farm animals; Genetic markers; Marker assisted selection; Animal transgenesis; Production of Recombinant/molecular vectors, molecular vaccine, probes and monoclonal antibodies, Assisted reproduction techniques (MOET, IVF, IVM, Cloning, fish breeding); Biotechnology in animal nutrition; Feed additives; Manipulation of rumen fermentation; GMF, feed modification.

AS 4107 Ornamental Fisheries Conservation and Management (2: 25/10/35)

Economically important ornamental fish species; Methods of capture and culture; fish feeds – formulation and preparation; Endangered fish and conservation; Fish breeding; Fish transport; Ornamental fish management; Marketing of fish and fish products.

AS 4108 Livestock Economics (2: 30/00/15)

Decision making principles in livestock production; Livestock systems; Role of budgeting in livestock industry; Management of livestock projects; Management of livestock marketing; Fisheries economics; Livestock agricultural business.

AS 4109 Animal By-product Technology (2: 26/08/15)

Edible by-products, upgrading of slaughter house waste for edible use; Rendering of by-products and animal feed; other uses of by-products; Production of hormones, drugs, enzymes; Hide and skin.

AS 4110 Livestock Farm Planning (2: 25/10/15)

Importance and types of livestock farms; National properties, policies and subsidy programs; Market survey, survey of resources; Site selection, resource planning, farm establishment, choice of resources; Management procedure of the farm operations; Marketing strategies; Farm records, accounting and budgeting; Farm evaluation, viability.

AS 4111 Integrated Animal Production Systems (2: 25/10/20)

Model to describe crop-livestock Integration; Integration of livestock/fish with field crops, minor export crops and other cash crops; Animal waste utilization and management; Agro-silvo-pastoral systems and other enterprises; Livestock-fish integration; Importance of livestock in Kandyan Forest Garden systems.

AS 4112 Beef Cattle and Micro-livestock Production (2: 25/10/08)

Importance of beef cattle and micro-livestock; Beef cattle production; Production of different micro-livestock species; Duck, geese, turkey, guinea fowl, quail, pigeon, ostrich, rabbit, deer, elk, earth worm, guinea pig, crocodile.

CS 4103 Statistical Methods II (2: 30/00/15)

Refer Advanced Crop Production Technology module

EX 4102 Human Resource Management (2: 24/12/34)

Refer Development Communication and Organizational Management module

EB 3202 Microeconomics (2: 30/00/50)

Economic theory; Theory of consumer behaviour and its applications; Theory of the firm and its applications; Theory of markets: Perfect competition and Imperfect competition; Theory of distribution: Labour, Capital, Land; General equilibrium analysis.

EB 3203 Macroeconomics (2: 30/00/50)

Macroeconomic indicators; Metrics of National accounts, Application of Monetary Economics and Monetary institutions; Static and dynamic Macroeconomic modelling; Analysis of fiscal and monetary policy.

EB 3204 Marketing Management (2: 20/20/40)

Concepts of marketing; Market and Consumer analysis: Consumer decision making process, relevance to market segmentation and market strategies; Defining and classification products, key terms associated with products, issues relating to product design, quality and management; Marketing communication and the use of promotional mix; Distribution channels and their contribution to efficient and effective marketing efforts; Types and role of intermediaries and the importance of customer service.

EB 4101 Resource and Environmental Economics (2: 25/10/45)

Principles of welfare economics; Concept of resource and scarcity; Market failure; Market failures as a cause of environmental degradation, externalities, public good and missing preferences; Introduction to environmental valuation; Principles of renewable natural resource management: forestry, fishery and water; Principles of non renewable natural resource management; Environmental pollution control; Sustainable development.

EB 4102 Quantitative Techniques for Business and Economics (2: 20/20/40)

Nature and scope of Econometrics; Regression Analysis; Empirical estimation of demand, supply and production functions; Detection, consequences and correction of heteroscedacity, autocorrelation and multicollinearity; Business forecasting; Linear Programming; Network Analysis; Queuing theory; Introduction to game theory and business simulation.

EB 4103 Research Methods for Business and Economics (2: 25/10/45)

Research philosophy, research problem identification and operationalization; Review of literature: importance, sources, critical analysis and synthesis; Deciding and justifying an appropriate research approach/strategy; Collection of data: Data types, data collection methods, sampling; Data Analysis and interpretation: Quantitative data analysis, qualitative data analysis; Research dissemination: writing the research proposal/report, making a presentation.

EB 4104 Business Psychology (2: 25/10/45)

Concept of business psychology; Psychological measurement and their applications in the business context; Tools used to apply psychology principles at the workplace and skills necessary on psychological techniques available; Psychological foundations of personnel decisions; Needs analysis, psychological constructs, psychological measurement; Psychometrics, judgment in the prediction of performance, analysis of bias and assessment methods.

EB 3205 Agricultural Marketing (2: 30/00/50)

Micro and macro approaches to agricultural marketing; Marketing definitions, market channel, economic integration, market environment, price discovery, marketing efficiency; Government intervention in marketing system: price support, subsidies, public and private storage, technology; Government policies in market system: regulatory and facilitative policies, S-C-P model; Farmer organizations, marketing orders and agreements, cooperative marketing; Derived demand for agric products, marketing margins; Market strategies.

EB 3206 Financial and Management Accounting (2: 25/10/45)

The nature and purpose of accounting; Recording, preparation and interpretation of financial statements, appreciating the key concepts depicted in published annual reports; Principles of Management Accounting.

EB 3207 Advanced Development Economics (2: 30/00/50)

Evolution and scope of development economics; Economic growth, theory-implications for development; Sectoral Roles in Economic development; Aspects of Economic development: development and environment, development and population, development and equity; Economic development in practice, leading development

issues: national, regional and global; Empirical investigation of a selected development issue.

EB 3208 Production Economics (2: 30/00/50)

Production function, stages of production and law of diminishing marginal returns; Cost function; Profit maximization: with single/more than one input(s), subjected to the budget constraint; Duality; Types of production functions: Cobb-Douglas, Transcendental, Translog and Leontiff; Elasticity of substitution; Returns to scale, homothetic functions and Eulers' theorem; Derived demand; Product transformation with more than one output; Production with variable input and output prices; Farm level risk analysis.

EB 3209 International Business and Trade (2: 20/20/40)

Economic perspective: trade and economic growth/development, theory of comparative advantage, effects of impediments to trade; Trade and Sri Lankan economy: Direction of trade, Trading partners, Trade policies, Balance of trade, Exchange Rates; Institutions of International Trade; Overview of International Business: Reasons for engaging in International Business; International Business operations: Country evaluation and selection, Collaborative arrangements, Control Strategies.

EX 3203 Organizational Behaviour (2: 24/12/34)

Refer Development Communication and Organizational Management module.

EB 4105 Financial Management (2: 30/00/50)

Corporate finance and the financial manager; Financial management decisions; Forms of business organisation; The goal of financial management; Financial markets and the corporation; Financial statements, taxes and cash flow; Use of financial statement information; Ratio analysis; Financial planning; Valuation of future cash flows; Capital budgeting; Capital Markets; Dividends and dividend policy.

EB 4106 Entrepreneurship (2: 25/10/45)

Concept and evolution of entrepreneurship; Economic theories of entrepreneurship, Sociology of entrepreneurship, Gender and entrepreneurship, Physiology of entrepreneurship; Myths of entrepreneurship; Approaches to study entrepreneurship: Indicative approach and process approach; Developing creativity and understanding

innovation: Creativity: importance to business, blocks to creativity, theories of creativity and creative problem solving process; Developing corporative entrepreneurship.

EB 4107 Policy Analysis (2: 30/00/50)

Role of quantitative policy analysis; Indicators of protection, comparative advantage and poverty; Partial equilibrium analysis; Household models; Input-output analysis; General equilibrium analysis.

EB 4108 International Agribusiness (2: 25/10/45)

Agribusiness overview; The future of the agri-food system; Economics of agribusiness; Agro-food marketing; Understanding the consumer; Nature of international agribusiness; Market entry strategies and methods; Cultural, political and legal aspects of international agribusiness; Export Documentation; Understanding the supply chain; Supply chain management as a tool of competitive advantages.

EB 4109 Advanced Project Analysis (2: 30/00/50)

Project environment: principles and practices, global, regional and national level projects; Welfare economic theories underlying project analysis; Introduction to logical framework analysis; Economic and financial analysis of projects; Principles of extended cost benefit analysis; Environmental impact assessment; Evaluation and appraisal of projects; Results based management, accountability for projects and the issue of sustainable outcomes.

EB 4110 Business Strategy (2: 20/20/40)

Introduction to strategic management; Determining objectives: vision, mission and goals; Environmental analysis, competitive advantages and vulnerabilities; Strategy section: corporate, business and functional strategies; Implementation of strategies and evaluating and controlling performances.

EX 4102 Human Resource Management (2: 24/12/34)

Refer Development Communication and Organizational Management module

Development Communication and Organizational Management

EX 3201 Extension Education (2: 24/12/40)

Domains and phases of learning; Principles of adult learning; Session planning; Methods of training; Preparation and use of teaching aids; Task of agricultural extension; Extension approaches; Problems and issues in agricultural extension; Agriculture support services.

EX 3202 Communication: Theory and Practice (2: 24/12/40)

Communication process, principles and models; Effective interpersonal communication; Presentations skills; Public speaking; Conducting seminar presentations; Marketing communication; Problems in and effectiveness of communication.

EX 4101 Rural Sociology (2: 24/12/34)

Sociological theories of change: modernization, dependency and underdevelopment; History and structure of agriculture; Agrarian social problems: vulnerability, dependency, bureaucracy, health and violence; Social stratifications; Social groups: community based organizations, group dynamics, leadership; Power and decision making in agriculture; Social values and norms; Design and management of human settlements.

EX 4102 Human Resource Management (2:24/12/34)

Definitions and principles of HRM; Strategic role of HRM; Process and functions of HRM; Training & development; Performance assessment and compensation; Job satisfaction and motivation; Employee relations and conflict management; Managing change.

EX 4103 Productivity Enhancement Training (2:00/60/20)

Exposure to field problems and issues in agricultural productivity enhancement; Field practice in training need assessment, training programme design, organizing and conducting training activities to enhance individual and group productivity.

EX 4104 Journalism and Media Use (2:20/20/40)

Concepts and definitions in journalism; Mass communication principles; Role of journalism in development; Managing agricultural information; Writing for print and electronic media; Production of media for publishing/ broadcasting; Media ethics.

EX 4105 Social Research Methods (2:24/12/44)

Social research process; Research problems; Contents of a research proposal; Criteria for evaluating a research proposal; Theories, propositions and hypotheses; Measurement of variables; Research design; Methods of sampling, data collection and analysis; Interpretations and conclusions; Ethics; Reporting research findings.

EX 3203 Organizational Behaviour (2:24/12/34)

Fundamentals of individual behaviour in organizations: Perception, personality, motivation, decision making; Fundamentals of group behaviour in organizations: group formation, organizational structure, leadership, power and authority, managing conflicts; Organizational structure and human behavior; Managing change.

EX 3204 Information Management (2:15/30/35)

Information as a resource, data-information-knowledge continuum; Information systems in an organization; Database concepts; Data storage and management, relational data model; Database management systems (DBMS), data manipulation; Image manipulation; Security; Information on the web; Design and implementation in access of a simple database application

EB 3204 Marketing Management (2:20/20/40)

Refer Applied Economics and Business Management module

EX 4106 Project Development & Management (2:24/12/34)

Project identification; Feasibility determination; Target group analysis; Setting of objectives and strategy; Financing; Monitoring and evaluation of programmes; Types of programmes.

EX 4107 Gender Issues in Development (2:24/12/34)

Gender *vs* sex-roles and economic change; Sex-role stereotyping; Family, work and social responsibilities; Career challenges and goals; Work ethics and conflicts in management; Gender issues in professional success; Role of women in agricultural development.

EX 4108 Community Development Approaches (2:24/12/34)

Community and facets of development; Historical perspective of development; Community development approaches: participatory, sustainable, rights-based, community driven, poverty reduction; Empowering people by transforming organizations; Empowering the disadvantaged, Programmes for rural development.

CS 4103 Statistical Methods II (2:30/00/15)

Refer Advanced Crop Production Technology module

EB 4106 Entrepreneurship (2:25/10/45)

Refer Applied Economics and Business Management module

AB 3201 Structure and Function of Insects (2:15/30/35)

Variation of external anatomical structures among major economically important insect groups; Functional anatomy of major insect systems; Application of some physiological functions in plant protection.

AB 3202 Ecological Insect Pest Management (2:25/10/40)

Ecological concepts in relation to insect pest managements; Population biology in relation to economically important insects; Scientific basis of conventional insect pest management strategies; Modern ecological insect pest management strategies; Biological control of insect pests; Designing of eco-friendly and sustainable insect pest management programmes in different farming systems using ecological principles; Economics of insect pest management.

AB 3203 Insects in Farm Animals and Public Health (2:15/30/35)

Economic impacts of insects in farm animals and public health; Identification, biology, transmission, and prevention & control of ectoparasitic arthropods: fleas, lice, blood sucking flies, nuisance insects, ticks and mites of farm animals. Bionomics and control of insect pests and vectors: mosquitoes, bedbugs, termites, cockroaches, flies and ants in human habitats.

AB 3204 Honey Bee Culture (2:15/30/35)

Honey bee species; Bee hives; Biology and behaviour of honey bees; Construction of bee hives and other related equipment; Establishment and management strategies of apiaries.

AB 4101 Insect Systematics (2:15/30/35)

Conventions of insect systematics; Phylogenetic relationships of economically important insect groups; Species differentiation of selected insect groups: Coccinellids, Carabids, Braconids, Ichneumonids, Aphids, Aleyrodids, Tephritids, and Papilionids.

AB 4102 Pesticide Management (2:25/10/40)

Pesticide use in Sri Lanka and Asia; Pesticide classification; Pesticide properties: chemistry of pesticides, mode of actions, types and properties of formulations, methods

of application; Safe use of pesticides; pesticide related accidents; Fate of pesticides in ecosystem, pesticide residual analysis; Pesticide act; Pesticide market in Sri Lanka.

AB 4103 Current Trends in Entomology (2:00/60/20)

Current trends in Entomology and Pest management; Major entomological activities in major research stations in Sri Lanka; Current approaches for Entomological problems; Current topics in Entomology.

AB 4104 Product Entomology (2:15/30/35)

Identification of insect based products; Commercial values and market potential; Production processes of insect based products: silk, lac, dyes, maggot therapy, insect based food, medicines and cosmetics; Production procedures of biocontrol agents: parasitoids and predators.

AB 4105 Scientific Research and Communication in Biology (1:10/10/20)

Proposal formulation and scientific writing: Organization, problem identification, justification, literature review, hypothesis formulation, identification of research methods, budget, work schedule, data analysis and interpretation; Presentation: oral and poster, effective presentation skills, handling questions; preparation of manuscripts and popular science articles.

CS 3210 Organic Crop Production Systems (1:10/10/10)

Refer Advanced Crop Production Technology module

AB 4122 Computer Applications in Entomology (2:10/40/30)

Use of Entomological software: populus, Intkey, Delta, Dymex and Biota; Development of entomological data bases; Development of educational interactive CDs to be used at primary and secondary educations; Designing of web pages.

AB 4120 Nematology (1:10/10/20)

Refer Plant Pathology and Microbiology module.

FT 3201 Food Chemistry (2:27/06/20)

Role of water activity in food stability; Freezing and food stability; Functions and reactions of carbohydrates; Reactions of lipids; Environmental effect on protein; Food pigments; Food flavors; Food additives; Enzymes and food industry; Enzymatic browning.

FT 3202 Food Microbiology (2:23/14/30)

Major groups of microorganisms, microbial action on foods; Intrinsic and extrinsic parameters controlling microbial activity; Ecology and distribution of spoilage & other microorganisms in food; Food borne illnesses and detection of causative microorganisms; Microbial food spoilage; Microbiological examination; Rapid detection and enumeration of microorganisms; Indices of food sanitary quality, microbiological standard and criteria; Molecular biology of microorganisms in foods, metabolic pathways for fermentation; Microbial activity and food safety: HACCP

FT 3203 Food Preservation (2:30/00/10)

Hurdle technology; Chemical preservation; Alcoholic and acidic fermentation, Preservation by radiation; Preservation through temperature reduction; Preservation through water removal; Preservation by heat; Controlled and modified atmosphere storage; Preservation by microwaves and electric resistance; Preservation using hydrostatic pressure and high voltage electric pulses; Preservation by microbial decontamination and use of natural anti-microbials.

FT 4101 Food Analysis (2:20/20/20)

Preparation of samples and reporting data; Chromatographic methods of food analysis: Thin layer, paper, column, HPLC and GLC, affinity, gel permeation and ion exchange; Spectrophotometric methods: UV visible, flame and atomic absorption; Spectrofluorometry; Analytical methods of macronutrients: Carbohydrates, fats and proteins and micronutrients: Vitamin and minerals; Analysis of food additives and contaminants; Use of biosensors in food analysis.

FT 4102 Food Processing for Product Development (2:30/00/10)

Sources of raw materials and need for food processing; Processes as a series of unit operations; Processing equipment and processing conditions; Thermal processing systems: Commercial sterilization, heat penetration determination and process calculation; Heat resistant characteristics of microorganisms and lethality; Extrusion technology in product development; Confectionaries and product development; Construction of flow charts; Strategies for product development; R & D process.

FT 4103 Food Process Technology (1:15/00/15)

Mass and energy balance; Kinetics of chemical reactions in foods; Heat transfer processes; Rheology; Behaviour of fluid flow; Mechanical separation processes; Drying mechanism and dryers; Refrigeration and freezing systems; Extraction processes.

FT 4104 Scientific Research and Communication in Food Science (1:10/10/20)

Elements and practices of research; Planning and preparation of a publication; Preparation of research proposal; Preparation of seminar manuscript; Seminar presentation.

AS 4101 Meat, Fish and Egg Product Technology (2:25/10/34)

Refer Animal Science and Technology module

CS 4103 Statistical Method II (2:30/00/15)

Refer Advanced Crop Production Technology module

FT 3204 Applied Human Nutrition (2:25/10/20)

Nutrition and population health; Direct and indirect methods of nutritional assessment: Anthropometric, biochemical and clinical assessments; Food consumption surveys; Contemporary issues in food, health and disease; Nutrition related diseases with special reference to Sri Lanka; PEM, micronutrient deficiencies and obesity; Guidelines for healthy living; Nutritional survey methodology; Nutritional intervention and rehabilitation programmes.

AB 3211 Recombinant DNA Technology (2:20/20/40)

Refer Molecular Biology and Biotechnology module.

AS 3202 Dairy Product Technology (2:25/10/08)

Refer Animal Science and Technology module.

EB 3204 Marketing Management (2:20/20/40)

Refer Applied Economics and Business Management module.

FT 4105 Practical in Product development (1:00/30/10)

Pre-requisites: FT 3201 and FT 3203

Identification of food ingredients, properties and application in product development; Production of jam, jelly and cordial; Development of RTS products; Dried/ Osmotically dehydrated fruit/vegetable products; Bottled/canned fruits and vegetables; Ready to cooked vegetable mixtures; Confectioneries, cereal based products.

FT 4106 Food Sanitation and Sensory Evaluation (2:27/06/30)

Food sanitation: food acceptability, health hazards, spoilage & pathogenic microorganisms; Food plant environment and sanitation; Good Hygienic Practices (GHP), personnel hygiene; Hygienic design of food plant and equipment: Hygienic design principles, plant construction and layout for different food products; Cleaning and disinfection; Fundamentals of cleaning and sterilization, detergents and sanitizers and their properties; Food safety management and regulations; Concepts of sensory evaluation, sensory attributes, product oriented tests, consumer oriented tests, conducting sensory tests, training panelists, application of sensory testing.

FT 4107 Food Packaging (1:15/00/15)

Need for protective packaging; Functions and requirements of packaging; Glass containers, types and systems of closures, metal containers, flexible packaging materials; Interactions of packaging materials and foods; Edible and biodegradable packaging; Design of packages.

FT 4108 Advanced Postharvest Technology of Fruits and Vegetables (1:15/00/20)

Desirable physico-chemical and nutritional characteristics of fruits and vegetables; Controlled ripening; Pack house operations; Postharvest protection; Minimal

processing; Modified atmosphere packaging; Controlled atmosphere storage; Effects of processing on sensory characteristics; Science based postharvest quality management systems.

FT 4109 Food Regulations and Food Quality Control (1;15/00/15)

Codex Alimentarius Commission; WTO and other international and national food standards; National food laws, regulations, guidelines and specifications; National food regulatory system; Food testing and regulatory mechanism; Food inspections; Quality control in food industry; Role of quality controllers; Quality assurance, GMP, HACCP, ISO and laboratory accreditation; Total quality management in food industries.

FT 4110 Fats and Oils Technology (1:15/00/05)

Physico-chemical properties of edible fats and oils; Commercial oil sources; Extraction, separation and purification of fats and oils; Preparation of cooking oils; Margarines and shortening agents; Use of antioxidants, emulsifiers and stabilizers; Blended oils, fat replacers, fat mimics, process induced anti-nutrients in oils.

EX 4102 Human Resource Management (2:24/12/34)

Refer Development Communication and Organizational Management module

Genetic Improvement of Plants

AB 3205 Applied Genetics & Plant Breeding (2:20/20/40)

Reproductive biology & breeding behaviour; Isolating mechanisms; Breeding of self and cross pollinated crops; Hybrid variety production; Cytogenetics and polygenes in breeding; Biotechnological breeding.

AB 3206 Plant Genetic Resources (1:10/10/20)

Importance of PGR and biodiversity in genetic improvement of plants; Policies for sustainable use of PGR; Crop evolution and crop domestication; Methods of conserving PGR; Utilization of PGR.

AB 3207 Quantitative Genetics (2:20/20/40)

Quantitative & qualitative characters; Environmental effects; Components of means & variances; Additive, dominance, epistatic & cytoplasmic effects; Heterosis / hybrid vigour; Heritability & G×E correlations; Genetic designs: basic generations, BIPs; Diallele; Use of computer simulated populations.

AB 3211 Recombinant DNA Technology (2:20/20/40)

Refer Molecular Biology and Biotechnology module

AB 4105 Scientific Research and Communication in Biology (1:10/10/20)

Refer Economic and Applied Entomology module

AB 4106 Plant Eco Physiology (2:15/30/35)

Significance of Eco Physiology in agriculture; Principles of plant responses to environment; Effects of environmental changes on photosynthesis and respiration. Stressful environments: natural and imposed; Mechanisms of plant responses to stress, symptoms of injury; Hardening process; Phytoremediation and Phytobial remediation; CO₂ enrichment

AB 4107 Developmental Biology of Plants (2:20/20/40)

Cell lineage & organogenesis; Influence of environmental factors on plant development: Photo-morphogenesis, circadian rhythm, CO₂ partial pressure on leaf development; Hormonal control of plant development.

AB 4108 Postharvest Physiology of Fruits and Vegetables (1:10/10/20)

Physiology of maturity, ripening and ageing; Role of endoglucanases and carbohydrate binding modules in cell wall disassembly during ripening; Genetic control of ripening; Changing parameters; Effects of ethylene on gene expression; Auxin: role and auxin-ethylene interplay; Phytochemicals related to quality of fresh-cut products; Physiological disorders; Use of ethylene antagonists, stress physiology (chilling injury, mechanical injury); Effects of insect quarantine methods on physiology of fruits and vegetables.

AB 4109 Economic Botany (1:15/00/25)

Plant manipulation; Origins of agriculture; Fruits & nuts, legumes, vegetables, spices, herbs and perfumes, vegetable oils and waxes, latexes & resins, medicinal plants, psychoactive drugs and poisons from plants, stimulating beverages, alcoholic beverages, fibres, dyes and tannins, wood, cork and bamboo, ornamental plants; Plants for the future.

AB 3202 Ecological Insect Pest Management (2:25/10/40)

Refer Economic and Applied Entomology module

AB 3212 Plant Pathology (2:25/10/10)

Refer Plant Pathology and Microbiology module

CS 3206 Tissue Culture (2:20/20/08)

Refer Advanced Crop Production Technology module

CS 4108 Conservation and Management of Medicinal Plants (1:12/06/10)

Refer Plantation Management and Forestry module

Molecular Biology and Biotechnology

AB 3208 Cell Biology (2:20/20/40)

Biomembranes and cell organization; Membrane potential: Ionic equilibrium, Ionic steady state; Membrane trafficking, Ligand gated ion channels; Structure and function of Cytoskeleton; Protein tertiary structure and functions, protein movement, secretion and endocytosis; Cell cycle; Intracellular messengers, Cellular signal transduction and homeostasis. Methods in cell biology: Advanced techniques in microscopy, spectrophotometry, flowcytometry, chromatography, centrifugation; Cell membrane and organelle isolation and authentication.

AB 3209 Plant Biochemistry (2:20/20/40)

Chemical constituents of plants; Macromolecules and their metabolism and biosynthesis- carbohydrates, lipids, isoprenoids and phenylpropanoids; Biochemistry of nitrogen fixation; Biosynthesis of secondary metabolites in plants; Biochemistry and molecular basis of important secondary metabolite groups, Gene regulation in secondary metabolism

AB 3210 Molecular genetics (2:20/20/40)

Genetic information transfer; DNA replication and repair; Transcription and posttranscriptional modifications; Regulation of gene expression: Prokaryotes and eukaryotes; Posttranslational modifications; Mutation; Gene families; Transposons. DNA, RNA and protein extractions: Theory and practice.

AB 3211 Recombinant DNA technology (2:20/20/40)

Restriction enzymes; Restriction mapping; Vectors; Transformation and transfection, Cloning strategies; Screening and analysis of recombinants, gene sequencing and genome mapping; Tools of rDNA technology: PCR, electrophoresis, electroporation and biolistic bombardment, blotting techniques.

AB 4105 Scientific Research and Communication in Biology (1:10/10/20)

Refer Economic and Applied Entomology module

AB 4110 Applied Biotechnology (1:15/00/25)

DNA fingerprinting; Transgenic plants; Biosafety: GMO /GMF, laboratory and field safety; Bioreactors: biopharmaceuticals, biofertilizers, biopesticides, bioherbicides; Enzyme biotechnology.

AB 4111 Bioinformatics (1:5/20/15)

Internet search of literature; Databases on DNA and Proteins: NCBI, EMBL, DDBJ, ExPaSy; Retrieving sequence data; Data Mining; BLAST: Homology alignment, Gene Prediction.

AB 4112 Practicum in Molecular Biology (1:00/30/00)

Lab safety, Genomic DNA extraction, Vector construction, Gene transformation, Restriction digestion, PCR amplification, Designing probes, Southern, Northern and Western blotting, Scoring of gels

AB 4113 *In vitro* Techniques (2:20/20/40)

Floating hydroponic systems; Immature inflorescence cultures; Microplast-mediated chromosome transfer, chromosome elimination; Protoplast culture; *In vitro* mutagenesis; Transformation techniques: *Agrobacterium* mediated gene transfer, particle bombardment, protoplast and tissue electroporation, silicon carbide whiskers; *In vitro* transcription system from BmN Cells of the Silkworm (*Bombyx mori*); Structure–function studies based on *in vitro* expression; *In vitro* diagnostics; Protein microarrays.

AE 3204 Energy and Waste Management (2:20/20/15)

Refer Agricultural and Biosystems Engineering module

AB 4107 Developmental Biology of Plants (2:20/20/40)

Refer Genetic Improvement of Plants module

AB 4109 Economic Botany (1:15/00/25)

Refer Genetic Improvement of Plants module

AB 4116 Microbial Biotechnology (1:10/10/20)

Refer Plant Pathology and Microbiology module

AS 4106 Animal Biotechnology (2:20/20/40)

Refer Animal Science and Technology module

FT 4101 Food Analysis (2:20/20/20)

Refer Food Science and Technology module

Plant Pathology and Microbiology

AB 3212 Plant Pathology (2:25/10/10)

Causal agents and abiotic factors; Principles of disease development; Types of infections; Damages caused by causal agents and economic importance of damages; Disease defense mechanisms; Proving Pathogenicity; Integrated plant disease management; Genetics of host parasite interactions; Recent developments.

AB 3213 Microbiology (2:25/10/10)

Prokaryotic and Eukaryotic cell; Microbial energetics, Biosynthesis and nutrition; Autotrophic way of life; Synthesis, Growth and differentiation; Microbial interactions: Symbiotic and host–parasite relationships; Microbial activities in nature; Evolution and phylogenetics.

AB 3214 Clinical Plant Pathology (2:15/30/35)

Isolation, culturing, identification and preservation techniques of plant pathogens; Systematic approach in diagnosis of unknown diseases/disorders; *Case studies*: Conventional and molecular biological techniques in detection and identification of plant pathogens, management and recommendations.

AB 4102 Pesticide Management (2:25/10/40)

Refer Economic and Applied Entomology module

AB 4105 Scientific Research and Communication in Biology (1:10/10/20)

Refer Economic and Applied Entomology module

AB 4114 Postharvest Pathology (1:10/10/20)

Postharvest losses and factors causing losses; Postharvest diseases and pathogens; Types of infections; Integrated management of postharvest diseases of fruits, vegetables and cereals: Agronomic, chemical, biological, genetic, physical, biotechnological methods; Mycotoxins and health hazards; Current trends.

AB 4115 Virology (1:10/10/20)

Structure, nomenclature and taxonomy of plant viruses; Transmission of plant viruses; Replication of viruses; Plant viral diseases: Case studies; Control, identification and detection techniques: Conventional, immunological and molecular biological; Viroids and phytoplasma; Recent developments.

AB 4116 Microbial Biotechnology (1:10/10/20)

Gene transfer in microorganisms; Uses of microorganisms in biotechnology; Techniques involved in microbial biotechnology; Applications: Case studies.

AB 4117 Agricultural and Environmental Microbiology (2:25/10/45)

Mechanisms of molecular nitrogen fixation; Degradation of waste and natural substances; Mycorrhizal associations; Mushroom cultivation; Effect of microorganisms on water and air quality; Bioremediation; Microorganisms as biocontrol agents; Biofilm formation; Biomining; Concept of efficient microorganisms.

AB 4118 Practicum in Molecular Microbiology (1:00/30/50)

Culturing and maintenance of microorganisms; Extraction of genomic and plasmid DNA; Gene transfer in bacteria, *Agrobacterium* mediated gene transformation and its applications; Application of transposons in Microbiology; Phages and vectors.

AB 3205 Applied Genetics and Plant Breeding (2:20/20/40)

Refer Genetic Improvement of Plants module

AB 4119 Immunology (1:15/00/25)

Immunity to bacteria and viruses; Complement proteins; Humoral and cell mediated immunity; Techniques in immunology; Monoclonal and polyclonal antibodies.

AB 4120 Nematology (1:10/10/20)

Morphology and biology of plant pathogenic nematodes; Isolation and identification techniques; Parasitism and damage caused; Integrated management; Beneficial nematodes.

AB 4121 Yeast Microbiology and Fermentation Technology (1:10/10/20)

Biology and molecular biology of yeast; Role of yeast in industrial microbiology; Fermentation technology; Microbial enzymes; Fermented food.

Plantation Management and Forestry

CS 3202 Management of Rubber, Coconut and Export Agricultural Crops (4:15/90/30)

Rubber: management aspects of rubber estates, management aspects of rubber smallholdings, processing of rubber latex; Coconut: management aspects of coconut smallholdings, processing of coconut; Export Agricultural Crops: management aspects of export agricultural crops production systems, processing and products of export agricultural crops.

CS 3203 Agroforestry Systems (2:25/10/10)

Origin, definitions and concept of agroforestry; Classification and characteristics of common agroforestry practices; Nature of abiotic and biotic interactions in tree-crop systems; Resource capture mechanisms used by plants; Social forestry practices and community-based systems of tree; Forest management.

CS 3204 Tree Diversity and Improvement (2:20/20/15)

Tree diversity, importance to agriculture; Important tree families and their agricultural uses; Ethnobotany of trees; Need for quality planting materials and seeds for forestry, agroforestry and fruit trees; Introduction to tree improvement philosophies; Domestication of trees: timber, medicinal and fruit trees; Application of tree improvement in forestry, agroforestry and horticulture.

CS 4101 Tea Plantation Management (2:10/40/10)

Issues, challenges, opportunities and strategies in tea industry; Present-day challenges of managing tea estates; Managing tea estates; Forestry in tea lands; Methods of

processing tea; Tea smallholding sector; Functions of Tea Smallholding Development Authority and Tea Board; Management of tea factories; Tea marketing.

CS 4102 Forest Management (2:25/10/10)

Role of forest management; Forest composition, tree classification, stand structure; Silvicultural treatments for tree and stand manipulation; Regeneration of stand; Forest mensuration; Application of silvicultural principles in plantation forests; Sustainable management of non timber forest products; Natural forest management for timber production.

CS 4103 Statistical Methods II (2: 30/00/15)

Refer Advanced Crop Production Technology module

CS 4104 Scientific Research and Communication in Crop Science (1: 08/14/10)

Refer Advanced Crop Production Technology module

CS 3205 Commercial Nursery Management (1:10/10/10)

Classification of commercial nurseries; Selection and preparation of potting media; Management strategies in commercial nurseries; Planning and production of propagules of horticultural; crops coconut, rubber and export agricultural crops of Sri Lanka; Certification programmes of commercial nurseries.

CS 3208 Crop Physiology (2:25/10/20)

Refer Advanced Crop Production Technology module

CS 4105 Farming System Analysis (1:10/10/10)

Farming systems, types and determinants; Approaches and methods used in the evaluation; Evaluation of crop-based farming systems; Use of traditional farming practices and new conservation agricultural techniques in improving farming practices; Rural issues and small farmers; Policies and farming practices of Sri Lanka.

CS 4106 Statistical Modelling (1:15/00/10)

Regression diagnostic statistics; linearization techniques in regression; multiple linear regression; sequential and partial sum of squares; model selection procedures: stepwise, forward and backward; non linear regression; growth models: concept, development, testing and validation.

CS 4107 Crop Environment Interactions (1:10/10/20)

Interactions between agricultural/forest ecosystems and environment; Influence of the environment on major biogeochemical cycles: food webs, nutrient cycles, atmospheric gases, Short- and long-term variations in the crop/forest environment; Impacts of global warming and climate change on crop and forest ecosystems; Environmental impact assessment (EIA); Clean development mechanisms (CDM).

CS 4108 Conservation and Management of Medicinal Plants (1:12/06/10)

Importance and potential of medicinal plants in agricultural development; Historical and modern perspectives on collection, conservation and use of medicinal plants; Agronomy of medicinal plants; Potential for postharvest handling and associated value added product development; Medicinal plants and SME development; Impacts of cultivation and processing of medicinal plants on product quality; Improvement of medicinal plants.

Soil and Environment

SS 3201 Soil Physics (2:20/20/04)

Dimensional analysis; Particle size distribution, summation percentage in soil particles; Soil structure development and stability, aggregate size distribution; Soil water potentials, soil-plant water relations, soil water retention, measurement of field capacity and pore size distribution; Soil rheological properties and tillage; Soil water, air and heat flow.

SS 3202 Soil Mineralogy (2:20/20/12)

Chemical composition of the lithosphere; Coordination number, radius ratio Pauling's rules, bond types; Mineral classifications: silicates and non-silicates; Chemical and structural properties of minerals; Clay mineral structures and characteristics; Identification of clay minerals; Stability of minerals and weathering pathways of minerals; Mineralogy in soils of Sri Lanka.

SS 3203 Soil Microbiology (2:20/20/10)

Bioenergetics of soil microorganisms; Diversity, distribution and isolation of soil microorganisms. Organic matter turnover in soil; Biochemical pathways of N, P and S transformation; Plant – microbe interactions in the rhizosphere, di-nitrogen fixation and mycorrhizae; Response of soil microorganisms to environmental perturbation; Agronomic and environmental importance of soil gene pool: biofertilizer, biopesticide, bioremediation.

SS 3204 Sustainable Soil Fertility Management (2:20/20/08)

Fertility parameters: evaluation, interrelationships and interpretations; Role of nutrients in fertility management: contents, dynamics and plant relations; Fertilizers, manures and amendments in managing fertility; Fertility assessment systems; Management approaches for soils of Sri Lanka; Fertilizer recommendation in Sri Lanka; Environmental impacts of fertility management.

SS 4101 Soil Chemistry (2:20/20/12)

Organic and inorganic colloids in soils; Inorganic colloids their characteristics and charge developments; Organic colloids: classification, properties and charge developments; Soil solution and its significance; Ion exchange: dynamic equilibrium reactions in soils; Ion adsorption and exchange, adsorption / desorption isotherms, ion exchange equations, flocculation and dispersion; Soil acidity salinity and sodicity, developments and reclamation methods; pH buffering in soils; Reactions of submerged soils.

SS 4102 Land Degradation and Conservation (2:25/10/04)

Concept of land degradation; Need for combating land degradation; Causes and processes of land degradation; Impact of land degradation on soil, water and forest resources, society and economy; Land degradation assessment; Conservation and rehabilitation measures /techniques for different types of land degradation; Encountering land degradation in Sri Lanka: problems, legislation, policies, and strategies.

SS 4103 Soil and Environmental Quality (2:20/20/10)

Composition and persistence of organic and inorganic pollutants in soil; Chemical and biochemical pathways of transforming pollutants; Bioavailability of pollutants and food chain contamination; Impacts of pollutants on ecosystem health; Indicators of soil and water pollution; Techniques for remediation of polluted environments; Managing organic wastes.

SS 4104 Scientific Research and Communication in Soil Science (1:10/10/10)

Types and structures of effective scientific proposals; Gathering information, review of literature and problem identification; Formulating hypothesis and setting up objectives; Planning of research: data collection, time frame and budget. Scientific communications, Seminar presentation: features of an effective seminar, preparation for the seminar, writing abstract, developing effective visuals (OHP, Power point) and delivery, handling of questions and evaluation.

SS 3205 Soil Survey and Classification (2:20/20/12)

Types of soil surveys, soil survey reports and soil maps; Conducting a soil survey, Use of aerial photography and remote sensing in soil surveys; Soil survey reports in sampling; Soil classification systems: Soil taxonomy and FAO methods; Classification of soils of Sri Lanka; Agro-Technology Transfer; Potentials and limitations of Sri Lankan soils.

CS 3210 Organic Crop Production Systems (1:10/10/10)

Refer Advanced Crop Production Technology module

EB 3204 Marketing Management (2:20/20/40)

Refer Applied Economics and Business Management module

SS 4105 Land Use and Environment (2:20/20/10)

Pre-requisite: SS 3205 Soil Survey and Classification

Land evaluation; Land use resources, types and requirements; Approaches for evaluation; Qualitative land evaluation methods based on data base; Land capability classification, irrigation suitability classification and engineering classification for humid tropics; FAO land suitability classification; Principles of the analysis of land use sustainability; Current trends and tools in agricultural land use planning; Digital soil data bases and uses.

SS 4106 Research Techniques in Soil Science (2:25/10/04)

Need of and errors in quantitative analysis; Sampling, preparation and storage of soil, plant and water; Total elemental analysis of soil, plant, compost and fertilizer materials; Extraction of nutrient fractions from organic matter and soil samples; Field and greenhouse techniques; Instrumentation: principles of Colorimetry, Spectrophotometry, Flame Emission and Atomic Absorption Spectroscopy, Potentiometry, Conductimetry. Basics on Tracer Techniques.

AE 4105 Remote Sensing in Agricultural Resource Management (2:20/20/16)

Refer Agricultural and Biosystems Engineering module

CS 4103 Statistical Methods II 2:30/00/15)

Refer Advanced Crop Production Technology module

CS 4111 Rice Production Technology (1:12/06/10)

Refer Advanced Crop Production Technology module

EB 4101 Resource and Environmental Economics (2:25/10/45)

Refer Applied Economics and Business Management module

EX 4102 Human Resource Management (2:24/12/34)

Refer Development Communication and Organizational Management module

B.Sc. Degree in Food Science and Technology (B.Sc. FST)

Introduction

Food Science is the discipline in which chemical, physical, biological and engineering sciences are used to study the nature of foods, the causes of deterioration, the principles of underlying processing and the improvements of foods for the consuming public. Food Technology is the application of food science to the selection, preservation, processing, packaging, distribution and use of safe, nutritious and wholesome foods. Food Science & Technology is one of the rapidly developing areas of current industrial importance in Sri Lanka and many parts of the world. It is a major contributor to the goods and the services sector of the gross domestic product (GDP) of the country. More than 120 large-scale industries, over 300 medium-small enterprises and several government and private research institutes are engaged in the food processing sector of the country. Identifying the growing demand for higher level skilled manpower requirement in the production, research and allied disciplines of the food sector, the Department of Food Science and Technology of the Faculty of Agriculture took the initiative in introducing the B.Sc. FST degree in the year 2004, targeting the qualifiers from G.C.E. (A/L) bioscience stream. The Faculty provides academic support from the other departments, namely Agricultural Economics & Business Management, Agricultural Extension, Crop Science, Animal Science, Agricultural Engineering, and Agricultural Biology while providing applied and success skills to the graduands reading for the degree.

Objectives and Graduate Profile of the Degree Programme

The B.Sc. FST is offered to impart pertinent knowledge and skills on handling and processing of agro food produce, analyzing physico-chemical and sensory properties, ensuring quality and safety of food, enquiring biochemical and functional aspects of food, attending to human nutrition and wellbeing and building up of professional attitudes and confidence for producing graduates as specified in the “graduate profile” given below.

A graduate in B.Sc. FST shall possess the necessary knowledge, skills and attitudes to make her/him capable of making significant contributions to local and international related arenas, focusing mainly on issues pertaining to food science and technology and allied disciplines in the manner described below:

- Identifying physico-chemical changes in food and performing analytical functions in food, nutrition and allied disciplines

- Handling technical, engineering, marketing and managerial functions of the food industry
- Processing and preserving of agro-food produce in managing food quality and safety
- Applying and incorporating principles of food science in real-world situations and taking up research leading to inventions and innovations in the food sector
- Becoming a professional in the areas of academia and entrepreneurship and a socially responsible, ethical team player with effective communication and leadership skills

Structure of the Degree Programme

The B.Sc. FST is a full-time 4-year (8-semester) degree program offered in English medium, designed following the requirements for Food Science education established by the Institute of Food Technology (IFT), USA. The guidelines were modified to meet the needs of the local food industry and the potential for higher studies and employment abroad. To be eligible for the award of the degree, a student should complete minimum of 126 credit units offered in the eight semesters. The degree program offers a total of 138 credits of which 110 are compulsory and 28 are optional. Final semester of the program is fully allocated for a student research project. Two third of the compulsory courses comprising 73 credits are offered by the Department of Food Science & Technology and the balance 37 credits are offered by the other departments of the Faculty. Allocation of 62% of the time on practical components in the compulsory courses offered by the Department of Food Science & Technology is one of the important features of the curriculum. The time allocated for practical components of all the compulsory courses of the degree program is 56%, targeting hands-on experiences. The students are given the opportunity to get exposed to new situations outside the lecture room activities through the eight self-learning activities spread in 8 semesters. This approach exposes the students draw their knowledge through diverse experiences involving both individual and team-work activities. The participation of the students in the this learning process is continuously assessed through a series of class room activities that makes it necessary for the students to move away from passive learning. In addition to the above mentioned credited courses, students are required to obtain proficiency in English, Information & Communication Technology, Basic Mathematics offered through a set of supplementary and complementary courses.

Outline of the B.Sc. Food Science and Technology Degree

Semester	Notation	Courses and Credit Hours	Credits
	<i>English & Other Complementary Courses</i>		
1100	BFST 1101	Introduction to Food Science & Technology (2: 30/00)	14
	BFST 1102	Basic Science Practical (1: 00/30)	
	BFST 1103	Chemistry for Food Science (3: 45/00)	
	BFST 1104	Task Project (4: 00/120)	
	BFST 1105	Food Regulation & Food Quality Control (1: 15/00)	
	BFST 1106	Unit Operations in Food Processing (1: 15/00)	
	BFST 1107	Techniques in Research & Scientific Writing in Food Science (2: 20/20)	
1200	BFST 1201	Biochemistry (4: 45/30)	16
	BFST 1202	Food Sampling (1: 10/10)	
	BFST 1203	Food Chemistry (2: 27/06)	
	BFST 1204	Food Microbiology (2: 23/14)	
	BFST 1205	Food Preservation (2: 30/00)	
	BFST 1206	Food Sanitation (1: 15/00)	
	BFST 1207	Food Physics (2: 25/10)	
	AB 2201	Plant Physiology (2: 20/20/40)	
2100	BFST 2101	Food Analysis (4: 40/40)	18
	BFST 2102	Seminar in Food Science & Technology (1:3/24)	
	BFST 2103	Sensory Evaluation of Foods (1: 12/06)	
	BFST 2104	Applied Mechanics (2: 30/00)	
	BFST 2105	Principles of Human Nutrition (2: 30/00)	
	EB 2101	Principles of Economics (3: 40/10/40)	
	CS 2102	Handling of Products from Perennial, Field & Horticultural Crops (3: 30/30/00)	
	AB 2111	Postharvest Biology (2: 15/30/25)	
	BFST 2201	Food & Nutrition (2: 30/00)	18
	BFST 2202	Kernal and Nut Products (1: 15/00) Optional	
	BFST 2203	Food Proteins and Hydrocolloids (1: 15/00) Optional	
	BFST 2204	Study Report on Market Foods or Processing Potential of an	

2200		Agricultural Commodity (2:2/56)	C: 9 O: 9
	BFST 2205	Food Safety (2: 28/04)	
	BFST 2206	Processing of Beverages (2: 30/00) Optional	
	BFST 2207	Edible Lipid Technology (1:15/00) Optional	
	BFST 2208	Chemistry and Technology of Essences & Flavors in Food (2:30/00) Optional	
	EX 2201	Principles of Human Behaviour (3: 40/10/60)	
	AE 3204	Energy and Waste Management (2: 20/20/15) Optional	20 C: 19 O: 01
3100	BFST 3101	Post-harvest Technology of Fruits and Vegetables (2: 20/20)	
	BFST 3102	Group Project (3: 00/45)	
	BFST3103	Food Packaging (1: 15/00)	
	BFST 3104	Food Process Engineering (2: 20/20)	
	BFST 3105	Food processing for Product Development (2: 30/00)	
	BFST 3106	Foods for the Future (1: 15/00) Optional	
	AB 3101	Insect Pests of Crops (2: 15/30/35)	
	AB 4114	Postharvest Pathology (1: 10/10/20)	
	EB 3101	Business Creation and Management (2:15/30/35)	
	AS 3101	Animal Products Processing Technology (2:15/30/10)	
	CS 3102	Statistical Methods I (2: 30/00/15)	

3200	BFST 3201	Practical in Product Development (2:00/60)	22 C: 14 O: 08
	BFST3202	Applied Human Nutrition (1: 15/00)	
	BFST 3203	Seafood Processing (2: 25/10) Optional	
	BFST 3204	Industrial Visit (1: 00/30)	
	BFST 3205	Grain and Starch Products Technology (2:30/00) Optional	
	AB 3211	Recombinant DNA Technology (2: 20/20/40) Optional	
	AE 3201	Postharvest Technology (2: 21/18/31)	
	AE 3202	Thermodynamics (2: 30/00/12)	
	EB 3201	Project Analysis (1: 10/10/20)	
	EB 3204	Marketing Management (2:20/20/40)	
	EB 3205	Agricultural Marketing (2: 30/00/50) Optional	
	CS 3201	Design and Analysis of Experiments (2: 30/00/15)	
	EX 2202	Career Development (1: 10/10/20)	
4100	BFST 4101	Review on Modern Food Technology (2: 00/60)	22 C: 12 O: 10
	BFST 4102	Processing of Milk and Milk Products (2: 20/20)	
	BFST 4103	Production & Marketing Operations in Food Manufacturing Organizations (1:15/00) Optional	
	BFST 4104	Design of a Food Processing Factory (2: 00/60)	
	BFST 4105	Food Biotechnology (1: 15/00) Optional	
	BFST 4106	Experimental Biochemistry (2: 20/20) Optional	
	AS 4101	Meat, Fish & Egg Product Technology (2: 25/10)	
	CS 4103	Statistical Methods II (2: 30/00/15)	
	EB 4106	Entrepreneurship (2: 25/10/45) Optional	
	EB 4108	International Agribusiness (2: 25/10/45) Optional	
EB 4109	Advanced Project Analysis (2: 30/00/50) Optional		
EX 4102	Human Resource Management (2: 24/12)		
4200	BFST 4201	Research Project	8

C = Compulsory courses, O = Optional courses

Capsules of the Courses of the Degree Programme

Compulsory Courses

BFST 1101 Introduction to Food Science & Technology (2: 30/00)

Introduction to course; Scope of food science & technology, Role of food science & technology graduates in the industry, Responsibilities of food scientists; Global food production; Food production in Sri Lanka; Raw materials for food processing, Food industries in Sri Lanka; Science & Technology of processing of foods; Hygiene & food processing, Future trends in food processing; Processing and nutrients in foods, Globalization and food processing, Trends in food research; Food regulatory organizations, Resource bases for food processing, Food balance sheets; Food processing and market forces; Tutorial.

BFST 1102 Basic Science Practical (1: 00/30)

Information on laboratory work safety; Handling of apparatus; Handling of chemicals and precautionary measures, Laboratory discipline and methodology to be imparted through disciplined practical sessions; First Aid; Accuracy and precision in measurement.

BFST1103 Chemistry for Food Science (3: 45/00)

Searching information in chemistry; Chemical structure and properties- overview; Isomerism [structural, position and stereoisomerism]; Resonance structures and Conjugated systems; Acidity and basicity; Solvents and solvent properties; General study of symmetry; asymmetry, chirality & optical activity of compounds and polarimetry, Conformation of straight and branched chain alkanes and cycloalkanes; chair and boat conformations, Importance and utilization of natural products in foods; Alkaloids, terpenes, saponins, flavanoids, and related compounds, their chemical structures and properties, Molecular structure; Interactions between electromagnetic radiation and components in molecules Molecular structural features and spectroscopic techniques; Theoretical background of UV, IR, Mass, NMR and Fluorescence spectroscopic techniques, Phase equilibria; Potentiometry; Conductometry and electrodes & electrode reactions; Oxidation and reduction; Free radicals and photochemical reactions; Tutorial.

BFST 1104 Task Project (4: 00/120)

The students will work in the floor of a food processing factory attending to duties related to receipt of raw materials, processing, and packaging for 3 weeks to gain knowledge on operational aspects of a factory. Discussion on job analysis.

BFST 1105 Food Regulations & Food Quality Control (1: 15/00)

Codex Alimentarius Commission; WTO; International and national food standards; National food laws, regulations, guidelines and specifications; National food regulatory system; Food testing and regulatory mechanisms; Food inspections; Quality control and food industry; Role of quality controllers; Quality assurance, GMP, HACCP, ISO and laboratory accreditation; Total quality management in food industries.

BFST 1106 Unit Operations in Food Processing (1: 15/00)

Material handling; Size reduction of foods; Mechanical separations; Mixing, homogenizing & blending; Drying; Cold storage; Heat processing; Extrusion; Concentration and Crystallization; Process control; Distillations and solvent extractions; Packaging; Tutorial.

BFST 1107 Techniques in Research & Scientific Writing in Food Science (2: 20/20)

Planning research; Aims of research (Fact finding, Critical interpretation, Problem solving); Elements of research (Problem identification, Gathering pertinent data, Scientific method & specifications, Design & conducting experiments, Data collection, Data interpretation); Variations of practice from basic elements; Causes of poor quality research; Planning publications; Writing materials & methods, and references; Analysis of information; Preparation of tables & figures; Results; Introduction; Discussion; Abstracts; Restructuring; Style; Grammar and Editing.

Supplementary and Complementary Courses

ATM 1 English I (before the 2nd semester)

Refer to the course capsules under B. Sc. Agricultural Technology & Management (B.Sc. AgTech & Mgt) degree

ATM 2 Information and Communication Technology (before the 2nd semester)

Refer to the course capsules under B. Sc. AgTech & Mgt degree

ATM 3 Basic Mathematics (before the 2nd semester)

Refer to the course capsules under B. Sc. AgTech & Mgt degree

ATM 6 English II (before the 8th semester)

Refer to the course capsules under B. Sc. AgTech & Mgt degree

BFST 1201 Biochemistry (4: 45/30)

Carbohydrates; Structures, properties and reactions; Lipids: Structures, properties and reactions; Proteins: Structures, properties and reactions; Nucleoproteins Structures, properties and protein synthesis; Enzymes: Properties, classification, activity and inhibition; Vitamins: Structures, properties, deficiency symptoms & coenzyme relationships; Digestion and energy relationships; Carbohydrate metabolism; Lipid metabolism; Protein metabolism; Mineral metabolism; Metabolic interrelationships, Hormone action. Tutorial.

BFST 1202 Food Sampling (1: 10/10)

Objectives of food sampling; Errors associated with sampling, sub-sampling and analysis; Sampling plans for foods; Statistical considerations for sampling for quantitative analysis; Practical limitations in sampling; Sample size and regulatory criteria; Sampling plans and techniques for microbiological analysis; Sampling for chemical analysis; Sample storage and transport.

BFST 1203 Food Chemistry (2: 27/06)

Role of water activity in food stability; Freezing and food stability; Functions and reactions of carbohydrates; Reactions of lipids; Environmental effect on protein; Food pigments; Food flavours, food additives, enzymes and food industry; Enzymatic browning.

BFST 1204 Food Microbiology (2: 23/14)

Major groups of microorganisms and their action on foods; Intrinsic and extrinsic parameters in foods controlling microbial activity; Ecology and distribution of spoilage and other microorganisms in food; Food borne illnesses and detection of causative microorganisms; Microbial food spoilage; Microbiological examination of foods; Rapid methods for detection and enumeration of microorganisms; Indices of food sanitary quality and microbiological standard and criteria; Molecular biology of microorganisms in foods; Metabolic pathways for fermentation and fermentation products; Microbial activity, food safety and HACCP.

BFST 1205 Food Preservation (2: 30/00)

Principles and application of Hurdle technology; Chemical preservation [sugar, salt, chemicals, acids, smoke]; Alcoholic and acidic fermentations; Preservation by radiation; Preservation through temperature reduction [chilling, refrigeration, freezing]; Preservation through water removal [drying, dehydration, evaporation, freeze concentration, concentration by membrane processes, freeze drying]; Preservation by heat [cooking, blanching, pasteurization, sterilization]; Controlled and modified atmosphere storage; Preservation by microwaves and electric resistance, preservation using hydrostatic pressure and high voltage electric pulses; Preservation by microbial decontamination and use of natural antimicrobials.

BFST 1206 Food Sanitation (1: 15/00)

Introduction to food sanitation; Food acceptability; Health hazards; Spoilage and pathogenic microorganisms; Hygienic design of food plants and equipment; Hygienic design principles; Plant construction and layout for different food products; Food plant environment and sanitation; Cleaning and disinfection: fundamentals of cleaning and sterilization; Detergents & sanitizers and their properties; Personnel hygiene: regulations, supervision, and health.

BFST 1207 Food Physics (2: 25/10)

Units & dimensions; Physical concepts [size, surface area, volume, volumetric flow rate, laws of motion, force, energy, density, specific gravity and bulk density]; Laws of motion; Circular motion; Force and energy; Properties of gases and vapours; Rheological properties [elasticity,

plasticity, flow characteristics, viscosity, Newtonian & non-Newtonian liquids, lamina and turbulent flow]; Surface properties [surface tension & surface activity, interfacial phenomena]; Electrical properties & measurement techniques; Colloidal stability; Electrostatic and steric stabilization of emulsions & foams; Destabilization processes; Separation, adsorption, flocculation and bridging behaviour of food emulsions and foams; Role of surfactants in the above processes and methods of determining changes in system stability; Use of microscopy to study the food structures.

AB 2201 Plant Physiology (2: 20/20/40)

Refer to the course capsules under B. Sc. AgTech & Mgt degree.

BFST 2101 Food Analysis (4: 40/40)

Proximate analysis; Kjeldahl nitrogen estimation; Potentiometry, pH and ion selective electrodes; Colorimetry. Chromatography; Spectroscopy; Spectrophotometry; Flame photometry; Atomic absorption spectrophotometry; Fluorometry; Refractometry and Polarimetry; Food microscopy; Food texture measurements; Analysis of milk and milk products; Laboratory quality assurance; Micro-analytical methods for pesticides, vitamins and mycotoxins; Interpretation and presentation of results; Product evaluation based on laboratory analysis.

BFST 2102 Seminar in Food Science & Technology (1: 3/24)

Identification of three topics through effective learning techniques; Identification of relevant literature from data bases; Preparation of 10 -15 page typed 1.5 line space document; Preparation of transparencies; Presentation for 20 min followed by 10 minutes discussion.

BFST 2103 Sensory Evaluation of Foods (1: 12/06)

Concepts of sensory evaluation; Sensory quality attributes; Product oriented tests; Consumer oriented tests; Conducting sensory tests; Training panelists; Application of sensory testing.

BFST 2104 Applied Mechanics (2: 30/00)

Introduction to applied mechanics; Statics; Forces in equilibrium; Introduction to framework, strength of materials, friction, and simple machines; Dynamics: Linear and angular motion, relative velocity, Newton's laws; Potential and kinetic energy; Motion in a circular path; Principles of fluid mechanics; Bernoulli's equation; Pipe flow measurements; Discharge coefficients and energy losses; Darcy's formula; Impacts of liquid jets and its applications.

BFST 2105 Principles of Human Nutrition (2: 30/00)

Composition and compartments of human body; Growth and energy needs; Energy balance and control of body weight; Protein requirements, turn over, protein quality and deficiency; Distribution, deposition and dietary needs of fats; Overview of vitamins and minerals; Food sources, interactions, deficiencies, toxicities, and recommendations; Integrated metabolism, and metabolic adaptations; Basis of determining nutrient requirements.

AB 2111 Postharvest Biology (2:15/30/25)

Physiology and Biochemistry of maturity, ripening and aging of fruits and vegetables and their physico-chemical changes; Respiration and the role of ethylene in post harvest products; Physiological disorders; Economic significance of post-harvest diseases; Factors influencing and responsible for post-harvest diseases; Post-harvest diseases and causal organisms; Integrated management of post-harvest diseases; Overview of Insect Biology related to stored product insects; Insects attacking stored products and their control.

EB 2101 Principles of Economics (3: 40/10/40)

Refer to the course capsules under B.Sc. AgTech & Mgt degree.

CS 2102 Handling of Products from Perennial, Field and Horticultural Crops (3: 30/30/00)

Annual production and yield patterns of agricultural crops; Coconut industry and its development, harvesting and processing; Harvesting and processing of export agricultural crops; Production of rice, highland cereals, legumes, tuber crops and other field crops; Viz. onion, sugarcane and oil crops; Tea production, harvesting and processing; Fruit production: nutritional value, origin and distribution, physiological disorders; Vegetable production: nutritional values and physiological disorders; Effects of pre-harvest activities on product quality of fruits & vegetables.

BFST 2201 Food and Nutrition (2: 30/00)

Global and Sri Lankan nutrition situation; Role of nutrition in human development and its impacts on the society; Nutritional aspects of cereals and tubers; Legumes and animal proteins; Milk, fats & oils; Alcoholic and non-alcoholic beverages; Role of fibre in nutrition; Vegetarianism; Organic foods, health foods and natural foods; Use of food composition tables.

BFST 2204 Study Report on Market Foods or Processing Potential of a Agricultural Commodity**(2: 2/56)**

Self study by small groups of students.

BFST 2205 Food Safety (2: 28/04)

Concepts of food toxicology; Epidemiology of food borne diseases; Adulterants and contaminants; Chemical contaminants [Natural toxicants of plant origin, mycotoxins, seafood toxins, environmental contaminants]; Toxic substances generated during processing; Chemical residues; Microbiological contaminants [toxicants and infective agents]; Food borne parasites; Preservatives and additives; Genetically modified materials; Scientific basis of safe use of additives.

EX 2201 Principles of Human Behaviour (3: 40/10/60)

Refer to the course capsules under B.Sc. AgTech & Mgt degree.

BFST 3101 Post-harvest Technology of Fruits & Vegetables (2: 20/20)

Post-harvest losses; Post-harvest handling in perspective; Biological aspects of postharvest handling; Physiological and commercial maturity of fruits, maturity indices considerations in harvesting; Ripening, degreening and pre-cooling; Packaging house operations; Trimming, cleaning, drying of excess moisture, curing, waxing, standardization, grading and inspection; Packaging and produce handling during transport; low temperature, modified atmosphere and controlled atmosphere storage; Minimal processing of fruits and vegetables; Technologies for value addition to fruits and vegetables.

BFST 3102 Group Project (3: 00/45)

Engage in identification and examination of a food related problem in the field in a team of 6 to 8 students.

BFST 3103 Food Packaging (1: 15/00)

Need for protective packaging, Functions and requirements of packaging; glass containers, types and systems of closures, metal containers, flexible packaging materials; Interactions of packaging materials and foods, edible and biodegradable packaging; Design of packages.

BFST 3104 Food Process Engineering (2: 20/20)

Physical characteristics of food materials; Mass and energy balance; Rheology of foods; Stress strain behaviour, rheological parameters & models in materials; Viscoelastic behaviour and rheometers; lamina and turbulent flow, friction factor, pressure drop and pumping of fluid foods; Heat transfer; Forms of steam; Conditioned, forced and free convection; Radiation; Steady and unsteady state heat transfer; Overall heat transfer coefficient; Types and performance of heat exchangers; Food dehydration and drying; Psychometrics; Equilibrium moisture content; Estimation of drying rates and drying time for dryer types; Properties of frozen foods; Ice crystal formation, freezing point depression and cooling rate determination; Aero & hydrodynamic characteristics; Size reduction equipment/ machines; Mechanical separation techniques; Tutorial.

BFST 3105 Food Processing for Product Development (2: 30/00)

Sources of food materials and the needs for food processing; Processes as a series of unit operations; Processing equipment and processing conditions; Thermal processing systems; Commercial sterilization, heat penetration determinations and process calculations; Heat resistant characteristics of microorganisms and lethality; Extrusion technology in product development; Applications of dehydration and drying; Applications of IQF, freezing and refrigeration; Confectionaries and product development; Construction of flow charts, cost estimation and work force; Strategies and Research for product development; Tutorial.

AB 3101 Insect Pests of Crops (2: 15/30/35)

Refer to the course capsules in under B.Sc. AgTech & Mgt degree.

AB 4114 Postharvest Pathology (1: 10/10/20)

Refer to the course capsules under B.Sc. AgTech & Mgt degree.

EB 3101 Business Creation and Management (2: 15/30/35)

Refer to the course capsules under B.Sc. AgTech & Mgt degree.

AS 3101 Animal Products Processing Technology (2: 15/30/10)

Refer to the course capsules under B.Sc. AgTech & Mgt degree.

CS 3102 Statistical Methods I (2: 30/00/15)

Refer to the course capsules under B.Sc. AgTech & Mgt degree.

BFST 3201 Practical in Product Development (2: 00/60)

Production of jam, jelly and cordial; Development of RTS products; Sugar balance in crystallization of sugar and jaggery; Candies; Soft and hard boiled confectionaries; Control of microorganisms during alcoholic fermentations; Fermentation of vegetables; Microwave heating and caramalization of foods; Water activity in use of salts and solar drying of foods; Dehydration of fruits and vegetables; Food canning; Pasteurization of juice; Development of new products.

BFST 3202 Applied Human Nutrition (1: 15/00)

Assessing nutritional status in the community-indirect and direct methods; Anthropometrics, biochemical and, clinical assessments; Common nutritional deficiency diseases with special reference to Sri Lanka; Guidelines for healthy living; Nutrition surveillance; Nutrition intervention programmes.

BFST 3204 Industrial Visit (1: 00/30)

The students are expected to visit 2 industries, observe and make notes of all aspects of processing, hygiene and storage.

AE 3201 Post-harvest Technology (2: 21/18/31)

Refer to the course capsules under B.Sc. AgTech & Mgt degree.

AE 3202 Thermodynamics (2: 30/00/12)

Refer to the course capsules under B.Sc. AgTech & Mgt degree.

EB 3201 Project Analysis (1: 10/10/20)

Refer to the course capsules under B.Sc. AgTech & Mgt degree.

EB 3204 Marketing Management (2: 20/20/40)

Refer to the course capsules under B.Sc. AgTech & Mgt degree.

EX 2202 Career Development (1 :10/10/20)

Refer to the course capsules under B.Sc. AgTech & Mgt degree.

CS 3201 Design & Analysis of Experiments (2: 30/00/15)

Refer to the course capsules under B.Sc. AgTech & Mgt degree.

BFST 4101 Review on Modern Food Technology (2: 00/60)

Self learning exercise

BFST 4102 Processing of Milk & Milk Products (2: 20/20)

Potentials in milk product development; Dairy chemistry; Types of fluid milk and their composition; Handling of milk prior to processing; Processing of condensed milk, evaporated milk, powdered milk, flavoured milk, pasteurized milk, sterilized milk, low fat milk and enriched milk products; Toned milk; Fermented milk products; bio yoghurt, ice cream; Testing and quality control of milk and milk products; Adulterants antioxidants, emulsifiers and stabilizers; Blended oils, fat replacers and fat mimics, Process induced anti-nutrients in oils.

BFST 4104 Design of a Food Processing Factory (2: 00/60)

The students will be designing a food processing factory for an identified location and a process as a group of 5 students.

AS 4101 Meat, Fish and Egg Product Technology (2: 25/10/34)

Refer to the course capsules under B. Sc. AgTech & Mgt degree.

CS 4103 Statistical Methods II (2: 30/00/15)

Refer to the course capsules under B. Sc. AgTech & Mgt degree.

EX 4102 Human Resource Management (2: 24/12/34)

Refer to the course capsules under B. Sc. AgTech & Mgt degree.

BFST 4201 Research project (8)

Self learning exercise guided by a supervisor

Optional Courses

BFST 2202 Kernel and Nut Products (1:15/00)

World trends in kernel products usage; Composition of coconut, cashew nut and peanut kernels and their food value; Processing of copra and palm kernels; Processing of coconut cream and desiccated coconuts; Processing of cashew nuts; Processing of peanuts; Quality characteristics of nut products; Other nuts used in the food industry; Nutritional importance of nut products.

BFST 2203 Food Proteins and Hydrocolloids (1:15/00)

Introduction to proteins and hydrocolloids; Functional properties of proteins; Protein quality and texture; Chemical and enzymatic modification of proteins; Fabricated vegetable proteins; Unconventional protein sources; Protein by-product and waste product management; Role of emulsifiers; Hydrocolloids and gels.

BFST 2206 Processing of Beverages (2: 30/00)

Global trends in beverage products; Tea [Introduction, statistics and trends, grades and blends, tea chemistry, tea processing, sensory attributes and tea tasting, quality and standards, tea products and purchasing, health and nutrition of tea]; Cocoa [Introduction, statistics, cocoa bean and quality attributes, cocoa bean processing, coco products]; *Coffee* [Introduction, statistics, processing of coffee, quality attributes and products]; Other beverages; Carbonated and non carbonated beverages; Sports and health drinks; Herbal tea and local traditional beverages; Cordial and fruit concentrates; Potable and mineral water.

BFST 2207 Edible Lipid Technology (1: 15/00)

Physicochemical properties of edible oils and fats; Extraction, separation, and purification; Preparation of cooking oils, margarines and shortening agents; Use of antioxidants, emulsifiers and stabilizers; Blended oils, fat replacers and fat mimics, Process induced anti-nutrients in oils.

BFST 2208 Chemistry and Technology of Essences & Flavours in Foods (2: 30/00)

Perception of flavour and aroma; Flavour chemistry, chemical compounds and their structural relationships; Flavour development- biochemical pathways and changes during processing; Essences; Artificial and non caloric sweeteners; Natural sweeteners; Flavouring agents and flavour enhancers; Smoke based flavours; Spices, condiments and their constituents; Processing of essential oils; Electronic tongue technique; Regulatory limits for use off-flavouring agents; Tutorial.

AE 3204 Energy and Waste Management (2: 20/20/15)

Refer to the course capsules under B. Sc. AgTech & Mgt degree

BFST 3106 Foods for the Future (1: 15/00)

Topics of current food issues; Organic foods; Functional foods Genetically Modified Foods; Health Foods and diet foods; Low calorie and low fat foods; Dietary fiber in foods; Street foods; Fast foods; Properties novel food ingredients; Forest foods; Frozen dinners; Sport drinks *etc.*

BFST 3203 Seafood Processing (2: 25/10)

Introduction to edible products from sea and global processing patterns; Sea plants - their processing and preservation; Extraction of food ingredients; Temperature modeling in fish transportation; predictive modeling based on fish characters; Cooling gels; Containers; Seafood quality and safety; Biochemistry and technology of seafood processing; Unit operations in filleting of white and oily fish; Fish canning: inputs and outputs; Fish processing: use of bactericidal and bacteriostatic agents, antioxidants and glazing; Biological zero chilling; Surimi and minced fish products; Edible/biodegradable films and MA packaging; Fish pellets, fish breads and fish concentrates, fish oils and fish fermentations; Biochemical dynamics of processed fish; Influence of processing on flavour of sea foods; Water activity in dried fish; Quality management practices (QMP), and HACCP in seafood processing and export inspection schemes for fish products; Identification of processed fish products by electrophoresis and DNA techniques; Nutrients and toxins associated with marine foods; Environmental concerns

in seafood processing.

BFST 3205 Grains and Starch Products Technology (2: 30/00)

Introduction, Production and statistics; Post-harvest handling of grains; Grain storage; Rice processing; Processed rice products; Grain and commercial starch processing; Physicochemical properties & Functional properties; Hydrolyzed starch products and uses; Modified starches; Extruded starch based products; Bakery products and role of ingredients; Quality assurance of processed starch based products; Tutorial.

AB 3211 Recombinant DNA Technology (2: 20/20/40)

Refer to the course capsules under B. Sc. AgTech & Mgt degree.

EB 3205 Agricultural Marketing (2: 30/00/50)

Refer to the course capsules under B.Sc. AgTech & Mgt degree.

BFST 4103 Production & Marketing Operations in Food Manufacturing Organizations (1: 15/00)

Environment of business organizations; Financial aspects of a business organizations, Work study and productivity; Concepts of quality, quality control, quality assurance and ISO series; Total quality management; Production planning and control; Marketing and customer orientation; Information for marketing decisions, marketing mix considerations, and integration of total marketing efforts; Tutorial.

BFST 4105 Food Biotechnology (1: 15/00)

Introduction to food biotechnology; Brewing and fermentation of foods and beverages; Enzymatic and microbial production of sweeteners, flavours and colours; Food proteins and proteases; Lipases, emulsifiers, stabilizer and flavours; Enzyme infusion technology; Application of molecular biological methods to improve quality of foods; Biotechnological methods in food analysis and quality control; Consumer knowledge and concern on biotechnology products; Molecular farming.

BFST 4106 Experimental Biochemistry (2: 20/20)

Introduction to the biochemistry laboratory and general laboratory procedures; Biological buffers, dialysis, micro-filtration, lyophilization, protein quantification; Separation and identification of biomolecules by chromatography; Characterization of biomolecules by electrophoresis methods, SDS-page, native-page, isoelectric focusing, two dimensional gel electrophoresis, enzyme activity staining techniques; Radioisotopes in biochemistry; Centrifugation and its applications; Enzyme extraction, purification and assays, Protein precipitation; Introduction to molecular cloning of DNA.

EB 4106 Entrepreneurship (2: 25/10/45)

Refer to the course capsules under B. Sc. AgTech & Mgt degree

EB 4108 International Agribusiness (2: 25/10/45)

Refer to the course capsules under B. Sc. AgTech & Mgt degree

EB 4109 Advanced Project Analysis (2: 30/00/50)

Refer to the course capsules under B. Sc. AgTech & Mgt degree

B.Sc. Degree in Animal Science and Fisheries (B.Sc. AS&F)

The Department of Animal Science of the University of Peradeniya has been in existence since the inception of the Faculty of Agriculture. During the past few decades, the Department has developed infrastructure and human resources required to provide training in all aspects of animal production and fisheries. Today not only the students from other Universities but also school children, staff from public and private institutions, farmers and various other stakeholders seek our facilities for their training needs.

The Department of Animal Science offers courses required for the degree programmes offered by the Faculty of Agriculture. These include courses in the core programme to address the basic principles of Animal Science and a limited number of courses in the advanced module of the degree programme. In addition to the courses offered in the existing academic programme, the Department introduced a Degree Programme on Animal Science and Fisheries to cater to the anticipated future demand for specialized graduates for the livestock and fisheries sectors of the country.

Objectives and Graduate Profile of the Degree Programme

Livestock industry and Fisheries play a crucial role in the economy of Sri Lanka where livelihood of many depends on direct or indirect involvement in those sectors. With the expansion and development of those industries, the need and demand has risen for graduates specialized in those fields having capabilities to solve problems and boost growth of those sectors. B.Sc. in Animal Science and Fisheries degree programme was meticulously designed to cater to the growing need for such graduates locally and internationally.

Following are the essential features of the programme:

- Thorough and well balanced theoretical knowledge as well as practical skills on the subject matter. (Theory : Practical = 1,437 h:1,286 h)
- Series of On-farm/industrial training in all major disciplines, periodically scheduled during semester and vacation periods.
- Supplementary minor projects/assignments, and a research oriented major project which will provide an in-depth knowledge on a specific field (Dairy, Poultry, Fisheries etc.).

Graduate Profile

The AS & F graduate will have the necessary knowledge, skills and attitudes to pursue a career as an academic, researcher, manager, planner, implementer and entrepreneur in the field of animal science and fisheries.

Main Features of the Degree Programme

The B.Sc. AS & F degree curriculum was formulated after a series of consultations with various stakeholders, features of the degree programmes offered by the Faculty of Agriculture of University of Peradeniya and of other Universities.

The Curriculum

Apart from relevant courses of the B.Sc. AgTech & Mgt. degree programme, the B.Sc. AS & F degree programme is comprised of 35 courses, which have been specially designed and introduced in line with the current and future needs of the Livestock and Fisheries sectors.

Compulsory and Optional courses

There are compulsory (C) and optional (O) components in the curriculum. The compulsory components include mandatory courses which are designed to impart knowledge and skills essential for a student. Students have a choice in selecting courses from the optional components.

Credit and Non-credit courses

There are credited and non-credited courses in the Degree programme. The grade point of the credited courses will be used in calculating the Grade Point Average (GPA)(see the relevant section below for more details of GPA), while the non-credit course (supplementary course) will not carry a grade point and therefore will not be used in the calculation of the GPA. However, these courses are required to be completed successfully in order to be eligible for the award of the Degree. Non-credit courses are designed to develop practical skills, communication skills and career development of students.

Structure of the Curriculum

The four-year Degree programme includes compulsory, optional and supplementary courses offered during 1-7 semesters. Taught courses in the 1st semester will be completed within the first seven weeks while the remaining time will be devoted for Industrial training courses. All students will undergo one livestock practices course, and three industrial training courses, each of two weeks duration on rotation basis. In addition all students will undergo in-plant training of 4 weeks duration at the end of the 2nd and 3rd academic years, and should obtain a 'Pass' grade.

The final semester (8th) is devoted for a Research Project which will be carried out by individual students on a specific topic under the supervision of a senior academic. Students are required to submit a thesis on the Research Project in order to complete the Project work successfully.

Outline of the B.Sc. AS & F degree

Semester	Series	Type of courses offered	No. of Credits Offered/ required ¹
1	1100	Compulsory courses	16
2	1200	Compulsory courses	18
3	2100	Compulsory and optional courses	18 (16 C + 2 O)
4	2200	Compulsory and optional courses	18 (16 C + 2 O)
4 weeks In-Plant training During Vacation ²			
5	3100	Compulsory and optional courses	17 (15 C + 2 O)
6	3200	Compulsory and optional courses	17 (15 C + 2 O)
4 weeks In-Plant training During Vacation ²			
7	4100	Compulsory and optional courses	18 (16 C + 2 O)
8	4200	Compulsory course (Project)	6
Total Credit Units			128 (118 C + 10 O)

¹ C = Compulsory courses, O = Optional courses

² Consists of 160 hrs of involvement and evaluated on Pass/Fail basis

Courses Offered in B.Sc. AS & F Degree

The courses offered in B.Sc. AS & F degree have been formulated by incorporating the essential knowledge, skills and attitudes that require fulfilling the objectives of the degree programme. The theoretical and practical skills have been incorporated in a balanced recipe in designing each course. In total, the compulsory courses and practical training alone (before considering the 10 credit hours of optional courses) provides 1,321 hours of theoretical knowledge and 1,218 hours of practical skills. The identified courses have been sequenced in such a way to deliver especially the knowledge and skills pertinent to Animal Science and Fisheries themes evolving from principles to synthesis and application.

Course Sequence of the B.Sc. AS & F degree

Semester	Notation	Courses and Credit Hours	Credits ¹
1100	ASF 1101	Animal Biochemistry (2: 30/00/00)	16
	ASF 1102	Anatomy & Physiology of Farm Animals (2:25/10/15)	
	ASF 1103	Anatomy and Physiology of Fish (1: 12/06/10)	
	ASF 1104	Livestock Farm Practice (1:00/30/10)	
	ASF 1105	Industrial Training in Animal Production & Fisheries (3:00/90/30)	
	ASF 1106	Immunology (1:13/04/10)	
	ASF 1107	Principles of Genetics & Animal Breeding (2:22/16/18)	
	AS 2102	Principles of Animal Nutrition (2:25/10/18)	
	AS2103	Forage Production and Conservation (2:23/14/19)	
1200	ASF 1201	Fish Nutrition (1:15/00/10)	18
	ASF 1202	Aquatic Plants & Live Feeds (2:25/10/10)	
	ASF 1203	Fish Breeding & Fish Seed Production (3:35/20/30)	
	ASF 1204	Analytical Techniques in Animal Feed & and Products (2:10/40/20)	
	AS 2201	Ruminant Animal Production (2:23/14/33)	
	AS 2202	Poultry and Swine Production (2:25/10/35)	
	SS 1201	Properties & Functions of Soils (3:30/30/12)	
	CS 1201	Principles of Crop Production (3:40/10/19)	
	ASF 2101	Marine & Inland Fisheries (3:35/20/40)	
	ASF 2102	Animal Environmental Physiology (1:10/10/10)	

2100	ASF 2103	Poultry, Cattle & Swine Diseases (3:35/20/10)	18 C: 16 O: 02
	ASF 2104	Shrimp and Prawn Farming (2: 26/08/10)	
	ASF 2105	Animal Behaviour & Welfare (2: 26/08/15)	
	ASF 2106	Microlivestock Production (2: 22/16/20)	
	EB 2101	Principles of Economics (3:40/10/40)	
	ASF 2107	Pet Animal Nutrition (2:25/10/15) OPTIONAL	
	ASF 2108	Equine Nutrition & Management (2:27/06/10) OPTIONAL	
	ASF 2109	Agro-ecotourism (1:12/06/10) OPTIONAL	
2200	ASF 2201	Beef Cattle Production (1:15/00/06)	18 C: 16 O: 02
	ASF 2202	Animal Waste Management (2:25/10/10)	
	ASF 2203	Ornamental Fisheries Management (2:25/10/35)	
	ASF 2204	Diseases of Fin Fish & Shell Fish (1:10/10/10)	
	AS 3201	Applied Animal Nutrition (3:40/10/08)	
	AS 3206	Feed Processing Technology (1:13/04/04)	
	EX 2201	Principles of Human Behaviour (3:40/10/60)	
	EX 2202	Career Development (1:10/10/20)	
	FT 3202	Food Microbiology (2:23/14/30)	
	ASF 2205	Traditional Practices in Livestock Production (1:12/06/10) OPTIONAL	
	FT 2202	Preservation of Agricultural Produce (2:26/08/22) OPTIONAL	
	FT 1201	Biochemistry and Human Nutrition (3:33/24/30) OPTIONAL	
	EB 2201	Development Economics (2:25/10/45) OPTIONAL	

4 weeks In-Plant Training During Vacation			
3100	ASF 3101	Meat and Fish Processing Technology (2:25/10/34)	17 C: 15 O: 02
	ASF 3102	Fisheries Resource Management (2:26/08/10)	
	CS 3102	Statistical Methods I (2:30/00/15)	
	ASF 3103	Livestock Farm Structures and Machinery (1:12/06/20)	
	AS 4102	Applied Genetics and Animal Breeding (2:25/10/20)	
	ASF 3104	Milk Procurement and Marketing (1/12/06/15)	
	ASF 3105	Slaughterhouse Management (1:12/06/15)	
	ASF 3106	Livestock & Fish Legislation (2:30/00/15)	
	ASF 3107	Wildlife Management (2:20/20/06)	
	EB 3101	Business Creation and Management (2:15/30/35) OPTIONAL	
	EX 3101	Organizational Management (2:15/30/35) OPTIONAL	
	FT 4101	Food Analysis (2:20/20/20) OPTIONAL	
	3200	AS 3202	
ASF 3201		Poultry Meat Processing and Egg Technology (2:25/10/30)	
AS 3203		Applied Animal Physiology (2:24/12/30)	
AS 3205		Forage Resources and Production (2:14/32/20)	
CS 3201		Design and Analysis of Experiments (2:30/00/15)	
EB 3204		Marketing Management (2:20/20/40)	
CS/AS 3201		Farming Systems (2:27/06/15)	
EB 3201		Project Analysis (1:10/10/20)	
EX 3201		Extension Education (2:24/12/40) OPTIONAL	
EX 3202		Communication: Theory and Practice (2:24/12/40) OPTIONAL	
EB 3205		Agricultural Marketing (2:30/00/50) OPTIONAL	

4 weeks In-Plant Training During Vacation			
4100	AS 4109	Animal By-product Technology (2:26/08/15)	18 C: 16 O: 02
	AS 4110	Livestock Farm Planning 2:25/10/15)	
	AS 4105	Scientific Research & Communication in Animal Science (1:05/20/15)	
	AS 4111	Integrated Animal Production Systems (2:25/10/20)	
	AS 4106	Animal Biotechnology (2:20/20/40)	
	ASF 4102	Animal Quarantine and Bio-security (1:15/00/15)	
	CS 4103	Statistical Methods II (2:30/00/15)	
	EB 4111	Livestock and Fisheries Economics (2:30/00/15)	
	EB 4109	Advanced Project Analysis (2:30/00/50)	
	EX 4107	Gender Issues in Development (2:24/12/34) OPTIONAL	
	EX 4102	Human Resource Management (2:24/12/34) OPTIONAL	
4200	ASF 4200	Research Project (6:00/180)	6

C = Compulsory courses, O = Optional courses

¹Total number of credits required to be completed in each semester

Capsules of the Courses of the Degree Programme

Courses offered in Semester I

ASF 1101 Animal Biochemistry (2: 30/00/00)

Structure, properties and metabolism of carbohydrates, lipids, proteins and nucleoproteins, Enzymes: properties, classification and activity, metabolic pathways, interactions and regulation in farm animals.

ASF 1102 Anatomy and Physiology of Farm Animals (2: 25/10/15)

Structures, functions and regulation of the neuro-endocrine system, Digestive system, Reproductive system and mammary system of farm animals. Dissections and demonstrations of the systems.

ASF 1103 Anatomy and Physiology of Fish (1: 12/06/10)

Anatomical and physiological characteristics of fish; Anatomy and physiology of digestive system, reproductive system, endocrine system and osmo-regulatory system of fish; Dissections and demonstrations of the systems.

ASF 1104 Livestock Farm Practice (1:00/30/10)

On-farm and hands-on training on breed evaluation, selection and breeding, feeding, management and marketing of all livestock species and fish. Prevention, control and treatment of infectious, metabolic and deficiency diseases and parasitic infestations in livestock and fish. Handling and restraining of farm animals for routine practices. Pasture and fodder establishment, management and conservation. Investigation into specific farm problems and develop immediate plan of actions. Record keeping and their uses in routine management practices.

ASF 1105 Industrial Training in Animal Production and Fisheries (3:00/90/30)

Exposure and training in small, medium and commercial operations on dairy, poultry, swine and fisheries.

ASF 1106 Immunology (1:13/04/10)

Introduction: Immunity, serology, immunological reactions and other major histo-compatibility complexes, macrophages and antigen processing cells, B and T Lymphocytes, Immunoglobins and lymphokins, Biological aspect of the immune system, The complement system, Immunity: natural and acquired immunity, Demonstrations of serological tests.

ASF 1107 Principles of Genetics & Animal Breeding (2:22/16/18)

Mendelian genetics; Structure and function of genes; Recombinant DNA technology, Animal genetic diversity, Hardy Weinberg Equilibrium and changes of gene frequency; Qualitative and quantitative traits, Additive, dominance and epistatic variance, Response to selection, Principles of animal breeding, economic traits for livestock species.

AS 2102 Principles of Animal Nutrition (2:25/10/18)

Refer to the course capsules under B. Sc. AgTech & Mgt degree.

AS 2103 Forage Production and Conservation (2:23/14/19)

Refer to the course capsules under B. Sc. AgTech & Mgt degree.

Courses offered in Semester II**ASF 1201 Fish Nutrition (1:15/00/10)**

Introduction: Energy; Lipids; Amino acids and proteins; vitamins and mineral requirements of fish; Nutritional requirements and deficiencies of shellfish and fin-fish larvae, post-larvae, and adults; metabolism of nutrients in fish; Feeding rates; Forms of fish feeds; Feed quality; Methods of feeding and feeding standards; estimation of digestibility and metabolism of nutrients and energy.

ASF 1202 Aquatic Plants & Live Feeds (2:25/10/10)

Role of live food organisms in aquaculture; Planktons; Algae; Floating, Sub-merged and Merged aquatic plants, Propagation and management of aquatic plants; Live feeds; Production of live feeds, Selection of live food organisms for feeding. Identification and propagation of aquatic plants.

ASF 1203 Fish Breeding and Fish Seed Production (3:35/20/30)

Importance of fish breeding, reproductive behaviours of fish, factors affecting reproduction, techniques in fish reproduction, breeding of different fish species, Development of fish breeds, management of brood stock; Practice on fish breeding techniques. Establishment of hatchery, fertilization, counting, factors affecting seed production, assessment of seed quality, feeding and management of larvae, fry and fingerling, processing and preservation of gametes, transportation of seeds, field visit to a breeding station.

ASF 1204 Analytical Techniques in Animal Feed and Products (2:10/40/20)

Safety & procedures for analytical techniques, Chemical waste disposal, maintenance of laboratory record book. Guidelines for preparation of stock-solutions and buffers. Sampling and sample preparation, Preparation of a standard curve and spiking, Importance of feed and product analysis; laboratory techniques in chemical analysis of animal feeds and products. Culturing and enumeration of microbial populations from animal products, Gram-staining and microscopic examination of major microbes. Determination of water activity in animal products.

AS 2201 Ruminant Animal Production (2:23/14/20)

Refer to the course capsules under B. Sc. AgTech & Mgt degree.

AS 2202 Poultry and Swine Production (2:25/10/26)

Refer to the course capsules under B. Sc. AgTech & Mgt degree.

SS 1201 Properties and Functions of Soils (3:30/30/12)

Refer to the course capsules under B. Sc. AgTech & Mgt degree.

CS 1201 Principles of Crop Production (3:40/10/19)

Refer to the course capsules under B. Sc. AgTech & Mgt degree.

Courses offered in Semester III

ASF 2101 Marine & Inland Fisheries (3:35/20/40)

Aquatic resources of the world; Classification of fish, Economically important marine and inland fish species, Selection of fish for farming, Fish culture systems: Pond fish culture; Site selection, pond construction, Pond management; Reservoir fish culture; Coastal aquaculture; Principles of water quality management; Feeding and management of farmed fish, Effect of predators and control; New technologies used in fisheries management.; Fishing gear and crafts, Fish harvesting, storage and transportation; Marketing of fish and fishery products,; Fisheries extension; Field visits to aquaculture farms.

ASF 2102 Animal Environmental Physiology (1:10/10/10)

Abiotic and biotic components of farm animals environment; Thermoregulation in farm animals, thermal zones, thermal stress, integrated responses, Genotype – environment interactions; Effects on nutrient requirements, growth, Production and reproduction; Biological rhythms, photoperiodism, and seasonality; Psychometrics and environmental modifications; estimation of integrated responses.

ASF 2103 Poultry, Cattle and Swine Diseases (3:35/20/10)

Common diseases of cattle, buffalo, swine, sheep, goat, poultry and Micro-livestock, disease prevention and control; Herd/flock health and hygienic management of farm animals, measurement of physiological parameters, collection and processing of samples for identification of common parasites/diseases.

ASF 2104 Shrimp and Prawn Farming (2: 26/08/10)

Importance of fish and shellfish breeding, Broodstock shellfish and their management, Reproductive behaviour of Shrimp and Prawn, Factors affecting reproduction of Shrimp and Prawn, Techniques in Shrimp and Prawn reproduction, Breeding of different shellfish species, Development of shellfish breeds, Practical on shellfish (Shrimp & Prawn) breeding techniques.

ASF 2105 Animal Behaviour and Welfare (2: 26/08/15)

Principles of animal behaviour: evolution, learning, genetics, physiology, parental and sexual behaviours; Social behaviour of wild and domesticated animals and relevance to management of domestic animal species; fundamentals of animal welfare and it's relationship with

behaviour of animals. Human-Animal interactions; Principles of livestock handling and transportation; monitoring & recording of behavioural patterns of animals.

ASF 2106 Microlivestock Production (2: 22/16/20)

The importance of microlivestock; Production of different microlivestock species; Duck, geese, turkey, guinea fowl, quail, pigeon, ostrich, rabbit, deer, elk, earth worm, guinea pig, crocodile, wild pig/ boar.

EB 2101 Principles of Economics (3:40/10/40)

Refer to the course capsules under B. Sc. AgTech & Mgt degree.

ASF 2107 Pet Animal Nutrition (2:25/10/15)

Pet food industry; Nutrients requirements of pet animals; Special aspects of pet nutrition; Feed resources for pet food; Processing of pet food; Feeding standards and feeding of pet animals, metabolic disorders, management of various pet animal species.

ASF 2108 Equine Nutrition & Management (2:27/06/10)

Types of feeds and feeding, digestion, absorption and utilization of nutrients, hind gut fermentation and microbiology, nutritional requirements and feeding standards, nutritional disorders. Housing and management of different groups of equines, management systems.

ASF 2109 Agro-ecotourism (1:12/06/10)

Definitions, importance and potentials, types of agro-eco tourism, planning of agro-eco tourism systems.

Courses offered in Semester IV

ASF 2201 Beef Cattle Production (1:15/00/06)

Beef industry, beef breeds, growth and development, management of calves, beef cows and bulls, veal production, beef cattle production systems.

ASF 2202 Animal Waste Management (2:25/10/10)

Introduction, problems related to animal and fish waste, types of waste, characteristics, collection & storage, methods of waste handling and management.

ASF 2203 Ornamental Fisheries Management (2:25/10/35)

Ornamental fish industry; Economically important ornamental fish species, Methods of capture and culture of ornamental fish, Maintenance of ornamental fish tanks; Management: feeds and feeding of ornamental fish, Water quality management in ornamental fish culture, Common diseases in ornamental fish, Commercial farms; brood stocks and back-ups; Farm lay out; Endangered fish and conservation; Transportation and Marketing of ornamental fish.

ASF 2204 Diseases of Fin Fish and Shell Fish (1:10/10/10)

Common diseases of fish (viral, bacterial, fungal and parasitic), control and prevention, health management; effect of environment on diseases.

AS 3201 Applied Animal Nutrition (3:40/10/08)

Refer to the course capsules under B. Sc. AgTech & Mgt degree

AS 3206 Feed Processing Technology (1:13/04/04)

Refer to the course capsules under B. Sc. AgTech & Mgt degree.

EX 2201 Principles of Human Behavior (3:40/10/60)

Refer to the course capsules under B. Sc. AgTech & Mgt degree.

EX 2202 Career Development (1:10/10/20)

Refer to the course capsules under B. Sc. AgTech & Mgt degree.

FT 2202 Food Microbiology (2:23/14/30)

Refer to the course capsule under B.Sc. FST degree

ASF 2205 Traditional Practices in Livestock Production (1:12/06/10)

Indigenous practices related to feeding, breeding, management, disease prevention, treatments and pest control of animals; harvesting and storage of animal feed.

FT 3202 Preservation of Agricultural Produce (2:26/08/22)

Refer to the course capsule under B.Sc. FST degree

FT 1201 Biochemistry and Human Nutrition (3:33/24/30)

Refer to the course capsule under B.Sc. FST degree

EB 2201 Development Economics (2:25/10/45)

Refer to the course capsules under B. Sc. AgTech & Mgt degree.

Courses offered in Semester V

ASF 3101 Meat & Fish Processing Technology (2:25/10/34)

Meat and fish industry; Live animal transportation; Carcass classification; Composition and structure of meat and fish; Post mortem glycolysis; rigormortis; Eating quality; Spoilage; Value addition; New product development; HACCP; Biochemical changes in seafood; Microbiology and preservation of meat and fish. Pathogenic diseases, anti-nutrients and toxins associated with sea food; identification of fish and meat products using modern techniques.

ASF 3102 Fisheries Resource Management (2:26/08/10)

Importance of Fisheries, Types of fisheries resources, Water as source for fisheries, Anthropogenic influence and role of fish in fisheries resources (Impact of aquaculture on environment, Environmental impact on different culture systems and management practices, Influence of introduced fish on aquatic ecosystem, Aquaculture based farming systems; Resource use planning.

CS 3102 Statistical Methods I (2:30/00/15)

Refer to the course capsules under B. Sc. AgTech & Mgt degree.

ASF 3103 Livestock Farm Structures & Machinery (1:12/06/20)

Structures and machinery related to livestock farming, fisheries, feed manufacturing, harvesting, processing, storage. Fundamentals related to requirements, installation and commissioning, operations, maintenance and repair of equipment and machineries used in livestock farms, fisheries and processing plants.

AS 4102 Applied Genetics & Animal Breeding (2:25/10/20)

Refer to the course capsules under B. Sc. AgTech & Mgt degree.

3104 Milk Procurement & Marketing (1/12/06/15)

Production zones, milk collection and marketing network in Sri Lanka, clean milk production, handling and quality control of liquid milk, economics and marketing, visits to collecting centers.

ASF 3105 Slaughter House Management (1:12/06/15)

Introduction, Site selection, requirements and layout of slaughter house, planning and designing of slaughter house, sanitary and hygienic conditions, slaughter house equipment, operation management, labour management, capital and running cost, quality assurance.

ASF 3106 Livestock & Fish Legislation (2:30/00/15)

Importance of legislation for management of livestock and fisheries; Local and international livestock laws; Animal act, Animal feed act, Animal diseases act, Veterinary drugs, cosmetics and devices act, Fisheries and aquatic resources act, Fisheries Act and implementation of fishing laws in Sri Lanka, legal aspects of import and export of ornamental fish and aquatic plants; Animal welfare act, Butchers act.

ASF 3107 Wildlife Management (2:20/20/06)

Wildlife: definitions, Fauna and Flora Protection Ordinance; Wildlife as an integral component of the Eco System; Protected Areas, Characteristics and Management; Wildlife habitats, Capacities, Degradation and Enrichment; Feeds and Feed Resources; Inter and Intra Species Competition; Animal Behaviour; Adaptation; Migration and Translocation; Management of Animal Orphanage and Refuge; Management and Conservation of Wild and Tamed Elephants; Human-Animal Conflict and Mitigation Techniques; Marine Eco Systems and their Management; Sea Turtle Conservation; Eco-tourism Potentials and Limitations.

EB 3101 Business Creation & Management (2:15/30/35)

Refer to the course capsules under B. Sc. AgTech & Mgt degree.

EX 3101 Organizational Management (2:15/30/35)

Refer to the course capsules under B. Sc. AgTech & Mgt degree.

FT 4101 Food Analysis (2:20/20/20)

Refer to the course capsule under B.Sc. FST degree

Courses offered in Semester VI

AS 3202 Dairy Product Technology (2:25/10/08)

Refer to the course capsules under B. Sc. AgTech & Mgt degree.

ASF 3201 Poultry Meat Processing and Egg Technology (2:25/10/30)

Introduction to poultry meat industry; Processing fresh poultry; Quality of poultry carcass and maintenance; Microbiology of poultry meat; Composition and nutritive value of poultry meat; Poultry meat products and processing; Preservation of poultry meat; refrigeration, caning, dehydration, curing and smoking; Introduction to egg technology; Structure and composition and egg; Physical, chemical, nutritional and functional properties of egg; Egg quality; Grading of eggs and storage; Processing of eggs; Microbiology of egg and egg products.

AS 3203 Applied Animal Physiology (2:24/12/30)

Refer to the course capsules under B. Sc. AgTech & Mgt degree.

AS 3205 Forage Resources and Production (2:14/32/20)

Refer to the course capsules under B. Sc. AgTech & Mgt degree

CS 3201 Design & Analysis of Experiments (2:30/00/15)

Refer to the course capsules under B. Sc. AgTech & Mgt degree

EB 3204 Marketing Management (2:20/20/40)

Refer to the course capsules under B. Sc. AgTech & Mgt degree

CS/AS 3201 Farming Systems (2:27/06/15)

Refer to the course capsules under B. Sc. AgTech & Mgt degree

EB 3201 Project Analysis (1:10/10/20)

Refer to the course capsules under B. Sc. AgTech & Mgt degree

EX 3201 Extension Education (2:24/12/40)

Refer to the course capsules under B. Sc. AgTech & Mgt degree

EX 3202 Communication: Theory and Practice (2:24/12/40)

Refer to the course capsules under B. Sc. AgTech & Mgt degree

EB 3205 Agricultural Marketing (2:30/00/50)

Refer to the course capsules under B. Sc. AgTech & Mgt degree

Courses offered in Semester VII

AS 4109 Animal By-product Technology (2:26/08/15)

Refer to the course capsules under B. Sc. AgTech & Mgt degree

AS 4110 Livestock Farm Planning (2:25/10/15)

Refer to the course capsules under B. Sc. AgTech & Mgt degree

AS 4105 Scientific Research & Communication in Animal Science (1:05/20/15)

Refer to the course capsules under B. Sc. AgTech & Mgt degree

AS 4111 Integrated Animal Production Systems (2:25/10/20)

Refer to the course capsules under B. Sc. AgTech & Mgt degree

AS 4106 Animal Biotechnology (2:20/20/40)

Refer to the course capsules under B. Sc. AgTech & Mgt degree

ASF 4102 Animal Quarantine & Bio-security (1:15/00/15)

Animal quarantine and bio-security measures; internal and external sources of contaminations and infections, between-herd risk factors, livestock exhibitions, visitor bio-security, wildlife bio-security, disposal of dead animals, levels of isolation, bio-terrorism against animal populations; quarantine facilities; animal quarantine act; recommended bio-security measures for livestock and fisheries industries; farm assessment and bio-security planning, emergency preparedness.

CS 4103 Statistical Methods II (2:30/00/15)

Refer to the course capsule under B.Sc. AgTech & Mgt. degree

EB 4109 Advanced Project Analysis (2:30/00/50)

Refer to the course capsules under B. Sc. AgTech & Mgt degree

EB 4111 Livestock & Fisheries Economics (2:30/00/15)

Application of economic principles in livestock and fisheries: Static & dynamic optimization models in intensive and extensive production systems; Fisheries resource management; Optimal extraction of fisheries resources; Bio-economic models of fisheries and aquaculture; Price determination in livestock and fisheries market; Supply chain analysis; Risk analysis.

EX 4102 Human Resource Management (2:24/12/34)

Refer to the course capsules under B. Sc. AgTech & Mgt degree

EX 4107 Gender Issues in Development (2:24/12/34)

Refer to the course capsules under B. Sc. AgTech & Mgt degree

Courses offered in Semester VIII

ASF 4200 Research Project (6:00/180)

Problem identification, investigation, data collection, analysis and interpretation, conclusions; Scientific writing; Scientific presentations.

Supplementary and Complementary courses

Supplementary Courses

- ATM 1 English I** (to acquire IELTS band 3 level of proficiency before the 2nd semester **(300 hrs)**
Refer to the course capsules under B. Sc. AgTech & Mgt degree
- ATM 2 Information and Communication Technology** (before the 2nd semester) **(100 hrs)**
Refer to the course capsules under B. Sc. AgTech & Mgt degree
- ATM 3 Basic Mathematics** (before the 2nd semester) **(90hrs)**
Refer to the course capsules under B. Sc. AgTech & Mgt degree
- ATM 4 Basic Physics**
(Offered only for students who have not followed Physics at GCE A/L before the 2nd semester)
(15 hrs)
Refer to the course capsules under B. Sc. AgTech & Mgt degree
- ATM 5 Basic Laboratory Skills** (before the 2nd semester) **(15hrs)**
Refer to the course capsules under B. Sc. AgTech & Mgt degree

Complementary Courses

ATM 6 English II (to acquire IELTS band 6 level of proficiency before the 8nd semester **(180 hrs)**)

Refer to the course capsules under B. Sc. AgTech & Mgt degree

ATM 7 National Language – Sinhala (only for non-Sinhala speaking students to acquire minimum verbal communication skills in Sinhala) **(90 hrs)**

Refer to the course capsules under B. Sc. AgTech & Mgt degree

ATM 8 National Language – Tamil (only for non-Tamil speaking students to acquire minimum verbal communication skills in Tamil) **(90 hrs)**

Refer to the course capsules under B. Sc. AgTech & Mgt degree

EXAMINATION REGULATIONS

B.Sc. AgTech & Mgt Degree, B.Sc. FST Degree and B.Sc. AS & F Degree

Examination and Assessment Procedure

Assessment Policy

The courses will be assessed on a continuous basis to provide an opportunity for a student to receive a feedback on his/her performance during the course.

Every course will have more than one assessment, conducted at the critical stages of learning of the course.

Appropriate assessment procedure/s, the percentage contribution of each assessment including independent learning activities to the final mark, and the appropriate stage (time/level) of assessment for each course will be determined by the course coordinator and should be approved by the relevant Department of Study.

The approved assessment procedure for a given course will be made known to the students at the commencement of the course.

Assessment of Theory

The minimum total duration of assessment per course will vary according to the number of credit units of the course as follows:

≤ 2 credit units	2 hrs
> 2 credit units	3 hrs

Scrutiny and moderation of examination papers and evaluation of answer scripts will be made according to the regulations and guidelines of the University of Peradeniya.

Make-up examinations will be arranged only for the in-course assessments under valid circumstances, as decided by the teacher/course coordinator.

Those students who fail in the final assessment, but have passed all other in-course assessments, will have to repeat **only the final assessment** of the course in the next available attempt, to fulfil the requirement.

To pass a course, a student should achieve a minimum of 'C-' grade for a credited course and a 'satisfactory' grade for a non-credited course.

Assessment of Practical

Assessment of the practical component shall be conducted within the semester and at the end of the semester, if necessary. All practical components will have a minimum of two assessments.

Assessment of the Project (Dissertation)

The Project shall have a continuous assessment and marks will be allocated as follows:

Conduct of the project	30%
Preparation of the project report	20%
Student profile	10%
Seminar examination	30%
Viva examination	10%

Assessment of Non-credited courses

Non-credited courses will be assessed on a satisfactory/unsatisfactory basis and will not contribute to the Final Grade Point Average (FGPA). However, obtaining a 'satisfactory' grade for a non-credited course is mandatory to be eligible for the award of the degree.

Assessment of in-plant training

In-plant training (a non-credited course) will be assessed through a final report by student, completed log book, viva examination/presentation, and a report from the work place.

Completed log book	30%
Viva Examination/Presentation	40%
Report by the student	30%

Student should fulfil all three components and obtain a satisfactory grade to pass the course.

Grading Procedure

Grading procedure recommended by the Senate of the University of Peradeniya will be adopted. Accordingly, the grade for a course shall not correspond to a cut-off mark, but based on the distribution of marks for the course.

Credited Courses: Letter Grade and Equivalent Grade Point

A 4-point scale will be adopted for grading the performance of students in credited courses. A letter grade shall be awarded to every credited course. The letter grades and corresponding grade points are given below.

Letter Grade*	Grade Point	Letter Grade	Grade Point
A+ / A	4.0	C	2.0
A-	3.7	C-	1.7
B+	3.3	D+	1.3
B	3.0	D	1.0
B-	2.7	E	0.0
C+	2.3		

Notes: * A+ is given only to those who obtain a distinctly high mark (over 90) and are outliers of the marks' distribution.

The threshold level of grading is equivalent to a C- (38 marks). To pass a credited course a student should achieve a minimum of 'C-' grade.

Calculation of Final Grade Point Average (FGPA)

An aggregate index will be calculated as the weighted average of the grade points obtained from grades of different courses and the number of corresponding course units. This aggregate index shall be called the Grade Point Average (GPA).

$$i.e. \quad GPA = \frac{\sum G_i C_i}{\sum C_i}$$

where, G_i = grade point of the i^{th} course

C_i = number of units of the i^{th} course

The Final GPA (FGPA) for the degree programme will be calculated at the completion of all requirements for the degree, as follows:

$$FGPA = \frac{\sum(a_j T_j P_j)}{\sum(a_j T_j)}$$

where, $a_j = 20, 25, 25$ and 30 percentages for the first, second, third and fourth academic years, respectively.

$T_j =$ total course units credited in year j

$P_j =$ GPA in year j

The FGPA will be rounded to the second decimal place.

Non-credited Courses

It is compulsory for every student to achieve a 'Pass' or 'Satisfactory' grade from every non-credited course that he/she offers.

Eligibility to Follow the Advanced Programme in the B.Sc. Agricultural Technology and Management Degree

To follow the courses in the Advanced programme of the B.Sc. Agricultural Technology and Management degree, a student must obtain a minimum CGPA of 2.0 in the core programme.

Award of Classes

The classes will be awarded based on the FGPA as given below:

<u>Level of performance</u>	<u>FGPA</u>
First class	≥ 3.70
Second class (upper)	3.30-3.69
Second class (lower)	3.00-3.29
Pass	2.00-2.90

To be eligible for a class, the requirements for any of the three degree programmes should be successfully completed within four (04) academic years, except on grounds acceptable to the University Senate. Students must obtain a minimum FGPA of 2.00 to be eligible for the award of respective degree.

Repeat Students

The maximum number of repeat attempts of a course shall be two (02). All grades below C- should be improved at the first available opportunity.

The maximum grade for a repeated course shall be C.

A student who obtains any grade less than a C has the option to repeat a course and upgrade to a maximum of a 'C'.

STUDENT PORTFOLIO FOR B.Sc. AgTech. & Mgt. DEGREE

A portfolio document should be perfected by every undergraduate student by recording the following information during the course of the degree programme and submitted for the approval of the academic body. A student will be responsible for the collection, recording of authentic information, obtaining certification and safe maintenance of his/her portfolio document.

1. Personal Information
2. Supplementary Courses
3. Academic Courses (1st to 8th Semester)
4. Professional Development
5. Language Skills
6. Information Technology Skills
7. Numerical and Analytical Skill
8. In-plant Training
9. Co-curricular Activities
10. Students Self Assessment (1st to 4th Year)
11. Outstanding Performances
12. Other Awards
13. Change of Address/Hall of Residence

SCHOLARSHIPS, BURSARIES, AWARDS AND PRIZES

List of Scholarships, Medals, Prizes, etc.

General

1. The *Arunachalam Hall Scholarships* endowed by Prof. ST Seneviratne in 1955 and awarded to a final year resident student of Arunachalam Hall.
2. The *University Scholarships* endowed from the University of Peradeniya Scholarship Fund and awarded on the performance at the Final Examination in each Faculty.
3. The *Jubilee Walk Studentships for Disabled/Handicapped Students of this University* Endowed by proceeds obtained from the Jubilee Walk organized by students to commemorate the Jubilee Year in 1992 and awarded on the recommendation of the Faculty Board of the respective Faculty when such requests are received from disabled/handicapped students enrolled in their relevant faculty.
4. The *Sri Lanka Tyre Corporation Prizes* (Established to commemorate the Jubilee Year) endowed by the Sri Lanka Tyre Corporation and awarded to children of employees of the Sri Lanka Tyre Corporation. The two prizes shall rotate amongst the seven Faculties and shall be awarded on the performance at the First Examination of the relevant Faculty.

Faculty of Agriculture

1. The *Ananda Amerasinghe Memorial Scholarship* donated by the Committee for the Ananda Amerasinghe Memorial Fund in 1980 and awarded for the best performance at the examinations held during the advanced programme in B.Sc. degree in Agricultural Technology and Management (3200 and 4100 series).
2. The *RR Appadurai Memorial Scholarship* donated by past students, well-wishers and members of the family of Prof. RR Appadurai in 1981 and awarded on the performance at the Examinations held during the core programme in Agricultural Technology and Management.

3. The *RR Appadurai Memorial Prize* donated by past students, well-wishers and members of the family of Prof. RR Appadurai in 1981 and awarded on the performance in Animal Science up to the 4100 series Examinations in Agricultural Technology and Management.
4. The *Upali Ekanayake Memorial Prize* donated by Dr. D T Wettasinghe in 1978 and awarded to the student who obtains the highest marks in all courses offered in Entomology in the core programme in Agricultural Technology and Management with a minimum of "B" grade.
5. The *Kundanmal Scholarship* endowed by Mr. M Kundanmal in 1973 and awarded for meritorious performance at the 2000 series Examination in Agricultural Technology and Management.
6. The *SFH Perera Memorial Prize* donated by Southern Province Planters Association in 1962 and awarded to the student who shows the greatest competence at the 4000 series Examination in Agricultural Technology and Management.
7. The *C de SW Siriwardena Scholarship* donated by the Public Trustee and awarded for the best performance at the Farm Practice Course in Agricultural Technology and Management.
8. The *University scholarships* endowed from the University of Peradeniya Scholarship Fund and awarded for the best performance at the 1000 examination in Agricultural Technology and Management.
9. The *EMRB Ekanayake Memorial Prize* in Agriculture endowed by Mr. Nissanka Ekanayake is awarded based on the best overall performance at the Final Examination in Agricultural Technology and Management degree.
10. "*CIC Charitable and Educational Trust Fund Awards*" are awarded to students selected from the batch following the third year exam of the Degree course in Agricultural Technology and Management. Two awards of Rs. 6,000.00 each to the most deserving students. One award of Rs. 1,500.00 to the student who obtained the highest marks in the third year exam.
11. "*Golden Jubilee Gold Medal for the most outstanding performance in the core programme of the B.Sc. Agricultural Technology and Management Curriculum*" is presented by the academic staff members of the Faculty of Agriculture of 1997. The gold medal is awarded to the student

who obtains the highest GPA in the core programme of the B.Sc. Agricultural Technology and Management degree.

12. *"Prof. YDA Senanayake Gold Medal for Crop Science"* is awarded to a student who obtains, in the first attempt, highest average grade of not less than "B+" for all examinations in Crop Science held for the B.Sc. Agricultural Technology and Management Degree. Examinations in Crop Science shall include courses on principles and production practices of field crops, horticultural crops, plantation crops and industrial crops (in all modules) conducted by the academic department responsible for them. The award is presented by Professor YDA Senanayake.
13. *"Dr. JWL Peiris Gold Medal in Agricultural Biology"* is awarded to a student who obtains, in the first attempt, the highest grade of not less than A- (GPA 3.7) for the compulsory courses of the advanced programme (in all modules) offered by the Department of Agricultural Biology (as denoted by the prefix AB in course numbers) of the B.Sc. Agricultural Technology and Management Degree. The award is presented by Professor JSM Peiris and Mr. GSN Peiris.
14. *"Dr. and Mrs KB Sangakkara Memorial Scholarship in Crop Science"* endowed by Professor U R Sangakkara is awarded to the student who obtains, in the first attempt, the highest grade of not less than B+ (GPA 3.3) for the core courses in Crop Science (as denoted by the prefix CS in course numbers) of the B.Sc. Agricultural Technology and Management Degree.
15. *"Professor HPM Gunasena Gold Medal for Crop Science"* is awarded to a student who has followed advanced programme in Crop Science. The successful candidate should obtain, in the first attempt, a GPA not less than 3.3 at all examinations in the core programme and the highest GPA not less than 3.7 in advanced courses in all modules conducted by the Department of Crop Science in the B.Sc. Agricultural Technology and Management Degree. The award is presented by Professor HPM Gunasena.
16. *"Gold Medal for the Best Performance in the subject Business Creation and Management of the B.Sc. Agricultural Technology and Management Degree Programme"* is endowed by the funds generated from the projects carried out by students who follow the course "Business Creation & Management". This gold medal is awarded to the student who has passed all the subjects of the core programme in the first attempt with a grade not less than a "A" in the subject "Business Creation & Management".

17. *"Gold Medal for the Most Outstanding Performance in Agricultural Economics and Business Management in the B. Sc. Agricultural Technology and Management Degree Programme"* is endowed by the funds generated from the projects carried out by students who follow the course "Business Creation & Management". This gold medal is awarded to the student who has passed all the compulsory courses offered by the Department of Agricultural Economics and Business Management and obtained the highest GPA for those subjects, with a grade of not less than a "A" in the subject "Business Creation & Management".
18. *"Gold Medal for the Best Performance in Agricultural Economics and Business Management in the Core Programme of the B.Sc. Agricultural Technology and Management Degree"* is endowed by the funds generated from the projects carried out by students who follow the course "Business Creation & Management". This gold medal is awarded to the student who has obtained the highest GPA for the subjects offered by the Department of Agricultural Economics and Business Management in the core programme, and has passed all the subjects in the B.Sc. Agricultural Technology and Management Degree in the first attempt with a FGPA not less than 3.3, with a grade of not less than a "A" in the subject "Business Creation & Management".
19. *"Professor AT Mosher Gold Medal for Academic Excellence in Agricultural Extension"* is endowed by the Department of Agricultural Extension of the Faculty of Agriculture. The gold medal is awarded to the student who obtains a minimum of "A-" grade (GPA 3.7) for all the compulsory courses offered by the Department of Agricultural Extension at all the examinations of the B.Sc. Agricultural Technology and Management Degree Programme in the first attempt, and pass all the individual subjects (obtaining a minimum GPA of 2.0) in the first attempt in all examinations of the degree programme with an overall GPA of not less than
20. *"Professor FSCP Kalpage Gold Medal for the Excellence in Soil Science"* is endowed by the family of the Late Professor FSCP Kalpage. The gold medal is awarded to the student who obtain a minimum of "A-" grade for all the compulsory courses offered by the Department of Soil Science in the B.Sc. Agricultural Technology and Management Degree in the first attempt, and pass all the individual subjects (obtaining a minimum GPA of 2.0) in the first attempt in all examination of the degree programme with an overall GPA of less than 3.3.

21. *"Academic Staff Prize for Excellence in Food Science and Technology in the B.Sc. Agricultural Technology and Management Degree Programme"* is endowed by the academic staff of the Department of Food Science and Technology of the Faculty of Agriculture. The Prize is awarded to the student who follows the Advanced Module in Food Science and Technology and obtains the highest CGPA in compulsory courses designated as FST/FT in the first attempt until completion of the 3200 series examination of the B.Sc. AgTech & Mgt degree, and has obtained a GPA equivalent to a Second Class Upper Division in all FST/FT subjects until the end of 3200 series examination.
22. *"Academic Staff Prize for Excellence in Food Science and Technology"* in the B.Sc. Food Science & Technology Degree programme is endowed by the academic staff of the Department of Food Science and Technology of the Faculty of Agriculture. The prize is awarded to the student who obtains the highest CGPA up to the end of 2200 series examination in the B.Sc. Food Science and Technology Degree Programme, has passed all the subjects of the first 4 semesters of the degree in the first available attempt, and obtained a minimum equivalent of a second class upper division pass of the degree up to the end of the semester 4 examination.
23. *"Professor Upali Samarajeewa Gold Medal for the best performance in the B.Sc. Food Science & Technology Degree"* is awarded to the student who obtains the highest combined GPA (CGPA) at the end of the B.Sc. Food Science & Technology Degree programme. To be eligible for the medal, the students should possess, in the first attempt, a CGPA not less than 3.30 and a minimum of C Grade in all the subjects of the degree programme. The award is presented by Prof. Upali Samarajeewa.
24. *"Fonterra Brands Gold Medal for Food Science and Nutrition"* is awarded to the student who obtains the highest combined GPA (CGPA) for the subjects Biochemistry, Food Microbiology, Food & Nutrition, Principles of Human Nutrition, Food Safety & Applied Human Nutrition, at the end of the B.Sc. Food Science & Technology Degree programme. To be eligible for the medal, the student should possess, in the first attempt, a CGPA not less than 3.30 and obtain a minimum of B+ Grade for the above identified subjects with a minimum of pass grade for all other subjects of the degree programme. The award is presented by Fonterra Brands Lanka (Pvt.) Limited.
25. *"Keels Gold Medal for Food Safety"* is awarded to the student who obtains the highest combined GPA (CGPA) for the subjects Food Chemistry, Food Microbiology, Food

Preservation, Food Sanitation, Food Regulations & Food Quality Control, Food Safety and Food packaging, at the end of the B.Sc. Food Science & Technology Degree programme. To be eligible for the medal, the student should possess, in the first attempt, a CGPA not less than 3.30 and a minimum of B grade for the above identified subjects with a minimum of C grade for all other subjects of the degree programme. The award is presented by Keells Holdings Limited.

26. "*Professor T. Jogaratnam gold medal*" for the best performance in Agricultural Economics and Business Management is endowed by the Agribusiness Student Project Fund. This is awarded to the student who obtains the highest CGPA among the students following the majoring module Applied Economics and Business Management with CGPA not less than 3.30.
27. "*Professor ASB Rajaguru memorial Gold Medal for Animal Science*" endowed by the Department of Animal Science of the Faculty of Agriculture. The gold medal is awarded to the student who obtains the highest CGPA among the students specializing in the Animal Science advanced module with CGPA not less than 3.30 at the end of the B.Sc. AgTech & Mgt degree programme.
28. "*Mr and Mrs DA Rajapaksha memorial Gold Medal for Agricultural Engineering*" is awarded to the student who obtains the highest CGPA among the students specializing in Agricultural and Biosystems Engineering advanced module with CGPA at the end of the B.Sc. AgTech & Mgt degree programme.
29. "*Aquatic Resource Development Project Scholarship*" is awarded to the student who obtains the highest grade not less than B+ for the core courses in Fisheries and Aquatic Resource Management of the BSc Animal Science and Fisheries degree programme.
30. "*Aquatic Resource Development Project Scholarship for the best Student Society of Faculty of Agriculture*" is awarded to the student society considering the activities performed at university, provincial and national level.
31. "*Aquatic Resource Development Project Scholarship for the best Student Society of the University of Peradeniya*" is awarded to the student society considering the activities performed at university, provincial and national level.

NEEDY STUDENTS' SCHOLARSHIP FUND

These scholarships are awarded to assist students requiring financial assistance to continue with their academic programme. Candidates are selected by a committee appointed by the Faculty of Agriculture. The Committee chaired by the Dean and consisted with Heads of Departments, SAR/AR, Chairman/Secretary of SAWGC, President/Secretary of AFSU, Batch Representatives.

PROCEDURE APPROVED BY THE UNIVERSITY OF PERADENIYA FOR THE ACCEPTANCE OF MEDICAL CERTIFICATES SUBMITTED BY STUDENTS FOR WORK AND EXAMINATIONS

1. Students are requested to support the absence from course work or examination due to illness by a valid medical certificate conforming to the format of a medical certificate issued by a government hospital. Such medical certificate should be obtained from the following persons:
 - University Medical Officer (UMO)
 - District Medical Officer
 - Consultant Specialist in the particular field
 - Head of a Government Base Hospital
 - Medical Superintendent of a Provincial Ayurvedic Government Hospital
 - Ayurvedic Physician registered in the Council
 - Only under exceptional circumstances, medical certificates issued by private hospitals or registered private practitioners could be considered by the University Medical Board.

2. Students who fall ill during sessions or examination time should contact the University Medical Officer at the University Health Centre immediately. If a student falls sick at home or elsewhere during sessions or examination time he/she or his/her guardian should inform the Dean of the respective Faculty within seven (7) days by telegram/fax/e-mail followed by a letter indicating the nature of the illness and the name of the attending doctor, etc. A medical certificate supporting the illness of the student also should be sent to the Dean. Under exceptional circumstances if a student was not able to meet the deadline mentioned above, he/she could send his/her appeal to the relevant Faculty Board.

The Dean on receipt of such medical certificate/s should follow the following procedure:

- I In case of Western Medical Certificates submitted by students to cover absence from course work or examination:
 - a. The medical certificate should be referred to the Chief Medical Officer (CMO) of the University for his/her Observations and Recommendations.
 - b. The CMO in turn examines the certificate and if he/she wishes could summon the student for examination and thereafter send his/her observations and recommendations to the Dean.

- c. In cases where the CMO wishes to convene the Western Medical Board he/she may make arrangements to convene the Western Medical Board and refer the recommendations of the Board to the Dean.
 - d. The Dean on receipt of such recommendations from the CMO or Western Medical Board should send it to the Faculty Board for ratification.
- II In the case of Ayurvedic Medical Certificates submitted by students to cover absence from coursework or examinations, the following procedure should be followed:
- a. Ayurvedic medical certificates submitted by student in respect of absence from examinations or course work should be circulated among the members of the Ayurvedic Medical Board for their observations by the Senior Assistant Registrar/Assistant Registrar in charge of student registration of each Faculty in consultation with the Deans of the respective Faculties.
 - b. Each member of the Ayurvedic Medical Board may send his/her observations and recommendations on the face of the medical certificate to the Dean 'of the respective Faculty through the Senior Assistant Registrar/Assistant Registrar of the Faculty;
 - c. In cases where the opinions of the members of the Ayurvedic Medical Board vary, the Senior Assistant Registrar or Assistant Registrar of the Faculty in consultation with the Dean of the Faculty may take steps to convene a meeting of the Ayurvedic Medical Board.
 - d. If the members of the Ayurvedic Medical Board think that the medical certificates should be examined at a meeting of the Board, the Dean of the Faculty should be informed accordingly.
 - e. If the members wish to examine the students concerned, they could be summoned before the Medical Board through the Senior Assistant Registrar/Assistant Registrar of the Faculty.
 - f. The recommendation of the Ayurvedic Medical Board should be sent to the Faculty Board through the Dean of the Faculty for ratification.
 - g. The original copies of the Ayurvedic Medical Certificate submitted by students should be kept in the files of the students concerned and copies of such certificates should be sent to the CMO for purposes of record.
3. There shall be two Medical Boards in the University, *viz.*, Western Medical Board and Ayurvedic Medical Board.

i. Western Medical Board

Terms of Reference

- a. The Western Medical Board shall consider cases where the CMO of the University has doubt about the validity of the grounds (including medical certificate) upon which the request of students to be excused for absence from course work of examinations.
- b. The CMO of the University shall convene the Western Medical Board if and when necessary.
- c. The Board has the right 'to call students before the Board when necessary for purposes of interview, examination and investigations.
- d. Recommendations of the Medical Board should be sent to the Faculty Board through the Dean of the respective Faculty.
- e. The Western Medical Board should consist of the Heads of the Departments of Medicine, Surgery and Psychiatry of the Faculty of Medicine or their nominees and the CMO of the University.

ii. Ayurvedic Medical Board

Composition

The Ayurvedic Medical Board shall consist of three (3) persons appointed by the Senate of the University.

Terms of Reference

- a. The Ayurvedic Medical Board shall consider Ayurvedic Medical Certificates submitted by students requesting exemption from examinations or course work and make recommendations to the Senate through the Deans of the respective Faculties.
- b. The Board shall meet at least once within a semester. The Senior Assistant Registrar/Assistant Registrar in charge of student registration in consultation with the Dean of the respective Faculty shall convene meetings of the Ayurvedic Medical Board whenever necessary and co-ordinate the work between the Faculty and the Ayurvedic Medical Board.
- c. The Board has the right to call students before the Board when necessary for purposes of interviews, examination and investigations. Such requests should be sent to the students through the Senior Assistant Registrar/Assistant Registrar in charge of student registration of each Faculty.

Guidelines for the Functioning of the Ayurvedic Medical Board

- a. When accepting Ayurvedic Medical Certificates, caution is to be exercised by accepting from only those who are registered in the Ayurvedic Medical Council.
 - b. General or special registered Ayurvedic Medical Practitioners could recommend, on any one occasion, leave up to 14 days at a stretch. Those with more than the above amount should get an endorsement from the Medical Officer in charge of the closest Government Ayurvedic Hospital or Government Ayurvedic Dispensary.
 - c. The decision on leave stipulated in Medical Certificates from Ayurvedic Hospitals, Government Dispensaries or Local Government Ayurvedic Dispensaries rests with the Board.
 - d. This Board possesses the right to question the validity of any Ayurvedic Medical Certificate.
 - e. The Board possesses the right to summon before them any student submitting an Ayurvedic Medical Certificate, if necessary.
4. When students request exemption from examinations or course work upon the basis of illness, the ultimate decision on the question of exemption, repetition of course and of eligibility for honours, shall be the functions of the relevant Faculty Board upon the recommendation of the Medical Board or the CMO.

REGULATIONS RELATING TO EXAMINATION PROCEDURE, OFFENCES & PUNISHMENTS FOR EXAMINATIONS CONDUCTED UNDER THE SEMESTER-BASED COURSE UNIT SYSTEM

Regulations made by the Senate of the University of Peradeniya and approved by the Council under Section 136 read with Sections 29, 45 and 46 of the Universities (Amendment) Act No. 7 of 1985. Examination of a course/course unit may consist of several assessment components (quizzes, within semester and end-semester examinations, term papers, assignments, etc.).

1.1. Regulation

1.1 These regulations may be cited as the Examination Procedure, Offences & Punishment Regulation No.1 of 2008, effective from 23.01.2008.

1.2. Part 1: Examination Procedure

1. A Candidate is expected to be outside the examination hall at least 15 minutes before the commencement of each paper, but shall not enter the hall until he/she is requested to do so by the Supervisor.
2. On admission to the hall a candidate shall occupy the seat allotted to him/her and shall not change it except on the specific instruction of the Supervisor.
3. For examinations which have duration of one or more hours, a candidate shall not be admitted to the examination hall after the expiry of half an hour from the commencement of the examination. A candidate shall not be allowed to leave the hall until half an hour has elapsed from the commencement of the examination or during the last 15 minutes of the paper.
4. However, under exceptional circumstances or in cases where the duration of the examination is less than one hour, the supervisor in consultation with the Dean of the Faculty concerned may use his discretion in the enforcement of Rule 3.
5. A candidate shall have his/her student record book/student identity card/admission card with him/her in the examination hall on every occasion he/she presents himself/herself for a paper. His/Her candidature is liable to be cancelled if he/she does not produce the student record book/student identity card/admission card when requested to do so. If he/she fails to bring

his/her student record book/student identity card /admission card, he/she shall sign a declaration in respect of the paper for which he/she had not produced the student record book/student identity card/admission card in the form provided for it, and produce the student record book/student identity card/admission card to the Registrar or the relevant Senior Assistant Registrar (SAR)/Assistant Registrar (AR) within the next three working days. If a candidate loses his/her student record book/student identity card/admission card during the examination period, he/she shall obtain a duplicate of student record book/student identity card/admission card as the case may be from the Registrar or relevant SAR/AR for production at the examination hall.

6. A candidate shall not have on his/her person or in his/her clothes or on the admission card, time-table, student record book/student identity card, any notes, signs or formulae, etc., except those items that are permitted. All unauthorized items which a candidate has brought with him/her should be kept at a place indicated by the Supervisor/Invigilator.
7. A candidate may be required by the supervisor to declare any item in his/her possession or person.
8. No candidate shall copy or attempt to copy from any book or paper or notes or similar material or from the scripts of another candidate. A candidate shall neither help another candidate nor obtain help from another candidate or any other person. A candidate shall not conduct himself/herself so negligently that an opportunity is given to any other candidate to read anything written by him/her or to watch any practical examination performed by him/her. No candidate shall use any other unfair means or obtain or render improper assistance at the examination.
9. If any candidate was found to have copied from another candidate by an examiner at the time of marking, he/she would be treated as having committed a punishable offence.
10. No candidate shall submit a practical book or field book or dissertation/thesis or project study or answer script or assignment which has been prepared wholly or partly by anyone other than the candidate himself/herself. This section, however, does not apply to group projects of students.

11. A candidate shall bring his/her own pens, ink, mathematical instruments, erasers, pencils or any other approved equipment or stationery which he/she has been instructed to bring. The use of a calculator will be permitted only for papers that contain a rubric to that effect.
12. Examination stationery (i.e. writing paper, graph paper, drawing paper, ledger paper, précis paper, etc.) will be supplied at the examination hall as and when necessary. No sheet of paper or answer book supplied to a candidate may be torn, crumbled, folded or otherwise mutilated. No papers other than those supplied to him/her by the Supervisor/Invigilator shall be used by candidates. All material supplied, whether used or unused, shall be left behind on the desk and not removed from the examination hall.
13. Every candidate shall enter his/her Index Number/Registration Number on each answer book and on every continuation paper. He/She shall also enter all necessary particulars as required. A candidate who inserts on script an Index Number/Registration Number other than his/her own is liable to be considered as having attempted to cheat. A script that bears no Index Number/Registration Number, or has an Index Number/Registration Number which cannot be identified, is liable to be rejected. No candidate shall write his/her name or any other identifying mark on the answer script unless otherwise authorized.
14. All calculations and rough work shall be done only on paper supplied for the examination, and shall be cancelled and attached to the answer script. Such work should not be done on any other material. Any candidate who disregards these instructions runs the risk of being considered as having written notes or outline of answers with the intention of copying.
15. Any answer or part of an answer, which is not to be considered for the purpose of assessment, shall be neatly crossed out. If the same question has been attempted in more than one place the answer or answers that are not to be considered shall be neatly crossed out.
16. Candidates are under the authority of the Supervisor and shall assist him/her by carrying out his/her instructions and those of the Invigilator during the examination and immediately before and after it.
17. Every candidate shall conduct himself/herself in the examination hall and its precincts as not to cause disturbance or inconvenience to the Supervisor or his staff or to other candidates. In

entering and leaving the hall, he/she shall conduct himself/herself as quietly as possible. A candidate is liable to be excluded from the examination hall for disorderly conduct.

18. Candidates shall stop work promptly when ordered by the Supervisor/Invigilator to do so.
19. Absolute silence shall be maintained in the examination hall and its precincts. A candidate is not permitted for any reason whatsoever to communicate or to have any dealings with any person other than the Supervisor/invigilator. The attention of the Supervisor/invigilator shall be drawn by the candidate by raising his/her hand from where he/she is seated.
20. During the course of answering a question paper no candidate shall be permitted to leave the examination hall temporarily. In case of an emergency, the Supervisor/Invigilator may grant him/her permission to do so but the candidate will be under his/her surveillance.
21. No person shall impersonate a candidate at the examination, nor shall any candidate allow himself/herself to be impersonated by another person.
22. Any candidate receiving unauthorized assistance from any person shall be deemed to have committed an examination offence.
23. If circumstances arise which in the opinion of the Supervisor render the cancellation or postponement of the examination necessary, he/she shall stop the examination, collect the scripts already written and then report the matter as soon as possible to the Dean of the relevant Faculty.
24. The Supervisor/Invigilator is empowered to require any candidate to make a statement in writing on any matter which may have arisen during the course of the examination and such statement shall be signed by the candidate. No candidate shall refuse to make such a statement or to sign it. If such a candidate refuses to make such a statement or refuses to sign it, the Supervisor/Invigilator shall make his own statement and report the matter to the Dean of the relevant Faculty,
25. No candidate shall contact any person other than the Vice-Chancellor, Dean, Head of the Department, the Registrar or the. Relevant Senior Assistant Registrar/Assistant Registrar regarding any matter concerning the examination. ,

26. Every candidate shall hand over the answer script personally to the Supervisor/Invigilator or remain in his/her seat until it is collected. On no account shall a candidate hand over his/her answer script to a hall attendant, a minor employee, or another candidate.
27. Every candidate who registers for a course/course unit shall be deemed to have sat the examination of that course/course unit unless he/she withdraws from the course/course unit within the prescribed period for dropping courses/course units. He/She should submit a medical certificate in support of his/her absence, prior to the commencement of the examination. If such a document cannot be submitted before the commencement of the examination, a candidate shall inform of his/her inability to attend the examination to the Dean of the Faculty within a week after the commencement of the examination. The medical certificate shall conform to the Senate Regulations.
28. When a candidate is unable to be present for any part/section of an examination of a course/course unit, he/she shall notify or cause to be notified this fact to the Dean of the Faculty and relevant Senior Assistant Registrar or Assistant Registrar immediately. This should be confirmed in writing with supporting documents by registered post within two weeks.
29. A student will be eligible for honours if all requirements for the award of honours are met within the prescribed period for the degree. However, candidates found guilty of an examination offence shall not be eligible for honours.
30. No student shall sit an examination of a course/course unit, if he/she has exhausted the number of attempts that he/she is allowed to sit that particular examination, unless he/she has been granted special permission to do so by the Dean of the relevant Faculty.

1.3 Part II: Examination Offences and Punishments

1. Offences

- 1.1 Any candidate who violates Examination Rule 6 shall be deemed guilty of the offence of possession of unauthorized documents/items and his/her candidature for the examinations of that semester shall be cancelled and he/she shall be prohibited from sitting any examination of this university for a period varying from 1-5 semesters.

- 1.2 Any candidate who violates Examination Rule 8 or 9 shall be deemed guilty of the offence of copying and therefore his/her candidature shall be cancelled from the examinations of that semester and he/she, shall be prohibited from sitting any examination of this university for a period of five semesters.
- 1.3 Any candidate who violates Examination Rule 10 shall be deemed guilty of the offence of having cheated at the examination and his/her candidature for the examinations of that semester shall be cancelled and he/she shall be prohibited from sitting any examination of this University for period varying from 1-9 semesters.
- 1.4 Any candidate who is detected removing examination stationery and other material provided for the examination (Rule 12) shall be deemed guilty of an examination offence and his/her candidature for the examinations of that semester shall be cancelled and he/she shall be liable to be prohibited from sitting any examination of the university for a period of three semesters.
- 1.5 Any candidate who violates anyone or more of the rules in 7, 16, 17, 18, 19 and 20 shall be deemed guilty of the offence of disorderly conduct and his/her candidature shall be cancelled from the examinations of that semester and he/she shall be prohibited from sitting any examination of this university for a period of three semesters.
- 1.6 Any candidate who violates Examination Rule 21 shall be guilty of the offence of impersonation and his/her candidature for the examinations of that semester shall be cancelled and he/she shall be prohibited from sitting any examination of this university. Impersonator/s may also be liable to any punishment under the Penal Code/Criminal Law. In the event the impersonator is found to be a graduate of this university, his/her degree shall be withdrawn.
- 1.7 Any candidate who violates Examination Rule 22 shall be guilty of an examination offence and his/her candidature for the examinations of that semester shall be cancelled and he/she shall be prohibited from sitting any examination of this university for a period of 1-5 semesters.
- 1.8 Any candidate found aiding and abetting in the commission of any of the above examination offences shall be deemed to have committed that offence and shall be punished in respect of the offence in accordance with the provisions of the relevant section.

- 1.9 Any other offence which is not covered in the above sections alleged to have been committed by a candidate and reported to the relevant authority by a supervisor or examiner shall be inquired into and appropriate action taken.

1.4 Procedure Regarding Examination Offences Committed by Candidates

1. There shall be an Examination Disciplinary Committee of not less than 3 members of whom at least one member is from outside the Faculty, appointed for each case by the Dean of the relevant Faculty to inquire into and make recommendations (including punishments) on examination offences referred to it. Member(s) outside the Faculty shall be selected from a panel of members appointed for this purpose by the Vice-Chancellor.
2. Classification of Offences
Examination offences may be broadly classified as follows:
 - 2.1 Possession of unauthorized documents/items
 - 2.2 Copying
 - 2.3 Cheating
 - 2.4 Removal of stationery
 - 2.5 Disorderly conduct
 - 2.6 Impersonation
 - 2.7 Unauthorized assistance
 - 2.8 Aiding and abetting in the commission of above offences
 - 2.9 Other offences.
3. *Punishments*
(As specified in Part II-1.1-1.9)
4. *Procedure*
 - 4.1 In all cases of violation of examination rules detected, the supervisor shall take action as outlined below and forward his/her report to the relevant Dean/Senior Assistant Registrar Assistant Registrar

- 4.2 In cases of disorderly conduct the supervisor shall in the first instance warn the candidate to be of good behaviour. Disorderly conduct shall be considered grave, only if such conduct in the opinion of the supervisor is considered as causing a disturbance in the conduct of the examination. Where the candidate persists in unruly or disorderly conduct, the supervisor may exclude the candidate from the examination hall and issue him a letter with a copy to the Page 9 of 22 relevant Dean/Senior Assistant Registrar/Assistant Registrar, cancelling his/her candidature from the examination.
- 4.3 In all cases of examination offences detected, the supervisor shall send a report to the relevant Dean along with any material taken into custody. Material taken into custody should be authenticated by placing the signatures of the candidate and the Supervisor/Invigilator and the date, time and place of detection. A supervisor should give particulars of any incriminating material of which he/she cannot take possession. The Supervisor's report should be countersigned by one of the Invigilators.
- 4.4 The Dean after preliminary inquiry shall place all reports of examination offences submitted by supervisors for action of the relevant Examination Disciplinary Committee for further action.
- 4.5 Supervisor, Examiner, Head of Department or any other official of the University who detects an examination offence shall report the matter in writing to the relevant Dean, who shall after preliminary inquiry submit his findings to the relevant Examination Disciplinary Committee for further action.
- 4.6 Any allegations regarding the commission of examination offences from whosoever received shall be submitted by the Dean after preliminary inquiry to the relevant Examination Disciplinary Committee for further action.

5. *The Decision*

- 5.1 The punishment recommended by the Examination Disciplinary Committee shall be submitted to the relevant Faculty Board for a decision and the decision shall be reported to the Senate for ratification.

Senior Assistant Registrar/Assistant Registrar of the relevant Faculty shall be the Convener/Secretary of the inquiring committee on examination offences.

6. *Appeals Board*

- 6.1 There shall be an Appeals Board, consisting of three members, appointed by the Vice- Chancellor to consider appeals regarding the decision referred to in 5.1 above. Any student on whom a punishment has been imposed may, with in a period of two weeks from the date of communication to him/her of such punishment, appeal against such punishment to the Vice-Chancellor.
- 6.2 The Appeals Committee shall have the power to review the decision referred to in 5.1 regarding the punishment imposed and may either affirm, vary as deem necessary or set aside the decision regarding the punishment.

DEPARTMETNS OF STUDY

Department of Agricultural Biology

The Department offers courses in all four years of the B.Sc. Agricultural Technology and Management degree programme. The courses cover major areas of agricultural teaching and research, such as Plant Systematics, Plant Physiology, Genetics and Plant Breeding, Biotechnology and Molecular Biology (Recombinant DNA Technology, Molecular Biotechnology, Molecular Aspects of Stress Physiology, Gene Cloning, DNA Fingerprinting etc.), Biodiversity, Biopesticides, Biomass Degradation, and Plant Protection, which includes Entomology and Plant Pathology. These courses are taught by staff members who are well qualified at postgraduate and post-doctoral levels, having had 'hands on' research experience in advanced laboratories in many parts of the world. They also conduct courses and serve as research supervisors at the Postgraduate Institute of Agriculture, through two boards of study, namely, Agricultural Biology and Plant Protection established in this Department. A wide range of courses are offered by this Department for the M.Sc., M.Phil. and Ph.D. programmes of the Postgraduate Institute of Agriculture.

The research programme of the Department centers around Plant Protection, Genetics and Plant Breeding, Plant Physiology, and Molecular Biology and Biotechnology in collaboration with the Department of Agriculture, other commodity research institutes, and private sector organizations. The results of student research have often had direct applications in the field. Studies on honey bees, mosquito repellents, silkworm breeding, tomato and chillie hybrid production, post-harvest losses in pineapples, physiological basis of leaf loss in ornamental plants, control of rice and vegetable insects using pathogenic fungi, use of botanicals in insect control, and biological control of post-harvest diseases of banana provide a sample of such work.

The Department has well trained and experienced technical and support staff who are constantly involved in staff research and the development programmes of the Department. The Department has a green house and field facilities to maintain demonstration plots and crop museums.

In addition to undergraduate and postgraduate teaching and research work, the staff is engaged in coordinating and conducting short term training programmes in various fields of Agricultural Biology. Members of staff at the Department of Agricultural Biology endeavour to make it the centre of excellence in Sri Lanka for many areas of agricultural teaching and research.

Department of Agricultural Economics & Business Management

The responsibility to impart knowledge and inculcate skills in the fields of economics, business and management on the undergraduate students of the Faculty of Agriculture lies with the Department of Agricultural Economics and Business Management. The predecessor of the Department was Department of Agricultural Economics and Farm Management established in 1972. The latter was renamed as Department of Agricultural Economics and Extension in 1983, and subsequently as the Department of Agricultural Economics in 1996 when a separate department for Agricultural Extension was created. The Department was re-named again in 2003 as the Department of Agricultural Economics and Business Management to embed curriculum reforms introduced to the Faculty of Agriculture.

Academic staff members of the Department have acquired experience and education in Production Economics, Rural Entrepreneurship, Agribusiness Management, Agricultural Marketing, Business Psychology, Marketing Management, International Trade, Resource and Environmental Economics, and Development Economics that provide students opportunities to gather relevant knowledge, skills, and attitudes in engaging in employment in relevant fields. The Department offers a comprehensive module of courses for the undergraduates in all sub-areas of agricultural economics, and business management as compulsory courses to cover key areas of expected knowledge areas by undergraduates of all three degree programs offered by the Faculty, and an array of optional courses related to wide variety of sub-areas in the fields of applied economics and business management during the advanced programme.

Through the years, the Department has excelled in teaching, research, and outreach activities. Academic staff members of the Department, both individually and in teams, on a regular basis are engaged in postgraduate teaching, research and advising to various governmental, private sector and international organizations making contributing to shape national and international development programmes that address key issues in agriculture. Training and dissemination workshops are also organized regularly by the Department through the sponsorship of local and international agencies.

The research programme of the Department is directly geared towards solving socio-economic problems related to agricultural development. Research activities specifically focus on smallholder agriculture and food systems, small and medium enterprises, agricultural development, economic growth, farm management, farming systems, entrepreneurship and agribusiness management. The

Department also offers postgraduate degree programmes in Agricultural Economics (M.Sc., M.Phil., Ph.D.), Business Administration (M.B.A., D.B.A, Ph.D.), Environmental Economics (M.Sc.), and Natural Resources Management (M.Sc.), through the Postgraduate Institute of Agriculture.

Telephone: +94-812-395500

Homepage: www.pdn.ac.lk/agri/depts/agriEcon/index.html

Department of Agricultural Engineering

The Department of Agricultural Engineering is located adjacent to the Department of Agricultural Economics and Business Management and the Postgraduate Institute of Agriculture in the 'Rubber Triangle' at the entrance to the University of Peradeniya between Old and New Galaha roads.

The Agricultural Engineering courses are offered in all four years of the B.Sc. Agricultural Technology and Management degree programme. The major fields of studies comprise of required technological inputs such as land development, soil and water conservation techniques, land preparation, seeding or planting, plant protection, weeding, irrigation, drainage, harvesting, post harvest handling, transportation, structures for animal housing, storage of grain and perishables, and energy and waste management for increased and sustained agricultural production. In addition to these technological inputs, supporting fields of studies are taught on climatic data acquisition and analysis including hydrology and water quality, remote sensing techniques and geographical information systems and water resource management and forestry for effective management of watersheds. The advanced courses offered by the Department permit students to specialize in Agricultural and Biosystems Engineering.

The Department is closely linked with the Postgraduate Institute of Agriculture through the Board of Study in Agricultural Engineering. The postgraduate programme offers training for M.Sc. degrees in Integrated Water Resources Management, Agricultural and Biosystems Engineering and Geo-Informatics. Postgraduate training is mainly provided for the officers of the Department of Agriculture, Department of Irrigation, Mahaweli Authority of Sri Lanka, other research Institutions, private sector industry and private candidates.

The Department has the modest facilities to provide training in Workshop Practice, Soil and Water Engineering, Post Harvest Technology and Engineering Drawing which are fully utilized for both undergraduate and postgraduate programmes. In addition, the Department has its own computer facilities for research and teaching. Research activities are conducted at the field station at Meewatura which is managed by the Department.

The academic staff is involved in research on improvement of mechanization; cultivation and harvesting, on farm grain drying, processing of agricultural products; particularly improving quality of rice and pulp concentration of fruits and tomatoes, dehydration of fruits and vegetables, hydrology,

irrigation systems and management, soil conservation and drainage, and agricultural urban waste management.

The Department is the headquarters for the Agricultural Engineering Society of Sri Lanka (AESSL) which is a registered body by the Organization of Professional Associations of Sri Lanka. Secretariats of the Geo-Informatics Society of Sri Lanka (GISSL) and CapNet Lanka (Capacity Building Network in Integrated Water Resources Management) are also based at the Department. In addition, the academic staff work very closely with the State, Private sector and non-governmental organization. The Department is responsible for publishing the Agricultural Engineering Journal and Agricultural Technology Newsletter in three languages. The department is helping the Open University, University of Ruhuna and Eastern University of Sri Lanka to develop their agricultural engineering training programmes.

Telephone: +94-81-2395454

Homepage: www.pdn.ac.lk/agri/depts/agriEng/index.html

Department of Agricultural Extension

As agriculture is a techno-social effort, the teaching, research and outreach work of the Department of Agricultural Extension focuses on strengthening the 'social' aspects of agriculture. In view of its increasing importance and disciplinary distinction, Agricultural Extension, which was formerly a division in the Department of Agricultural Economics and Extension, was separated into a fully fledged Department in December 1995. This is the only study department specialized for Agricultural Extension in the Sri Lankan university system.

Courses in Agricultural Extension are offered for all undergraduate degree programmes offered by the Faculty. A variety of courses are offered in different aspects of Agricultural Extension along the main pillars of Development Communication and Organizational Management. A variety of subjects such as Extension Education, Agricultural Communication, Agricultural Sociology, Human Resource Management, Career Development and Organizational Management are offered in these courses. They are taught by staff members who have the expertise in different academic disciplines and experience. The department is closely linked with the Postgraduate Institute of Agriculture (PGIA) through the Board of Study in Agricultural Extension. Academic staff members of the department are involved in conducting courses and also serve as research supervisors and examiners of the PGIA and some other departments in the university system.

The research programme of the department is directly concerned with the socio-economic problems of agricultural development. Current research activities centre around: smallholder agriculture and food systems, agricultural development, agricultural knowledge systems, adoption of agricultural innovations, sociology of agriculture, gender and development, management of development interventions, communication and media, community health and agriculture, social aspects of environment and natural resource management, management of agricultural organizations, participatory rural development, management of agricultural organizations, and human resource management.

Among the facilities available in the department are a fully equipped Audio-Visual Unit, an Information Technology Laboratory and a Desk-Top Publishing Unit, which are immensely helpful to the academic, research and outreach programmes undertaken by the department. Consultation and evaluation activities are carried out by individual and team members of the academic staff who have a broad background, experience and training. The members serve in committees and as consultants of various ministries of the Government and international organizations. These activities contribute to the

improvement of the national and international development programmes. In addition to these, various outreach activities such as training workshops, Symposiums and seminars are organized and conducted by the Department with public, private, non-government, and foreign organizations. Academic staff also plays a key role in the Sri Lanka Agricultural Extension Association. Overall, the programmes organized by the department of Agricultural Extension enable graduates to develop the social competencies essential to succeed as professionals in their chosen careers in future.

Telephone: +94-81-2395035

Homepage: www.pdn.ac.lk/agric/depts/agriExt/

Department of Animal Science

Established in 1968, the Department of Animal Science is responsible for the teaching of all aspects of animal production and health management, animal product and processing technology, aquaculture and wildlife to the students of both Faculty of Agriculture and Postgraduate Institute of Agriculture (PGIA) of University of Peradeniya. The Department has 25 academic staff members specialized in various disciplines of Animal Sciences and allied fields. The academic staff of the Department are also actively engaged in research, livestock development programmes at international, national and provincial levels and on policy formulation.

The Department of Animal Science has developed its facilities to cater to the needs of enhancing both theory and practical skills. Thus, the Department consists of modern lecture room and laboratory facilities which include feed and herbage laboratory equipped to carry out feed analysis, a digestibility and metabolism research units for ruminants and poultry, a physiology laboratory for blood metabolite analysis, animal biotechnology laboratory to carry out cell culture and basic proteomic genomic analysis, dairy and meat product technology laboratory, a pasture museum, an Arboretum of tree fodders and Aquaculture facilities. In addition, two laboratories are available for aquaculture, one each for food fish and ornamental fish. Aqua park consists of fish ponds located adjacent to the Department facilitate pond culture experience.

The Livestock Field Station established under the principles of integration is located at Mawela, Udaperadeniya, and is inclusive of dairy cattle, buffaloes, goats, sheep, ducks, rabbits, pigs, freshwater fish, Guinea pigs and micro-livestock including deer, crocodiles and wild pigs. The poultry unit at the Livestock Field Station consists of Layer and Broiler grandparent stocks and flocks of Turkey, Guinea fowl, Quail and Pigeon and a hatchery.

The Department of Animal Science has been issuing breeding animals of different species of livestock, day-old-chicks and ducklings, and fish for many years. A limited number of breeding animals of different species of livestock are also issued to the producers. Short term training programmes are organized on livestock production, dairy and meat product development, and aquaculture for school children and for representatives of government, non-government and private organizations. A wide variety of animal products of the Department are available at the Agro-products Sales Centre of Faculty of Agriculture and the Milk Bar of University of Peradeniya both managed by the Department.

Research programmes of the Department have a direct focus on livestock development of the country taking into the consideration of the needs arise at national level as well as at small-scale farmers. The major areas of research interests include: reproduction, lactation and environmental physiology, effect of environmental variables on reproductive physiology and performance of farm animals, ruminant and monogastric nutrition, evaluation of non-traditional feed resources, quality control of milk and milk products, processing of cultured milk products, livestock based farming systems, genetic evaluation of breeds and crosses, nutritive and supplementation values of tree fodders for ruminants, performance evaluation of rabbits, pigeons, Guinea pigs and micro-livestock for meat production, development of new meat products, aquaculture, fisheries and captive breeding of exotic; indigenous; endangered fish species. The Board of Study in Animal Science at the PGIA offers M.Sc., M.Phil. and Ph.D. degrees by course work and research in many specialized areas in the fields of Animal Science and Aquaculture.

Telephone: +94-81-2395321

Homepage: www.pdn.ac.lk/agric/depts/animalSci/

Department of Crop Science

The Department of Crop Science is considered as a centre of excellence in Sri Lanka for teaching and research related to Crop Sciences and related subjects and Biostatistics with a reputation for maintaining high academic standards and a strong research culture. The Department offers a comprehensive set of courses in all four years of the B.Sc. Agricultural Technology and Management degree programme including production and management of field, horticultural, export agricultural and plantation crops; micro propagation and tissue culture; controlled environment agriculture; crop physiology; and agroforestry and forestry. The Department is primarily responsible for the semester-long intensive residential field practical programme at Mahailuppallama, which provides on-farm experience, knowledge and skills of the dry zone agriculture. The Department also plays a unique role by offering courses on biostatistics for all students of the faculty. For students opting to specialize in Crop Sciences, the Department offers two advanced modules titled, “Advanced Crop Production Technology” and “Plantation Management and Forestry” in the 6th, 7th and 8th semesters. These attract a significant number of students annually. The Department also plays vital supporting roles in the B.Sc. Food Science and Technology and B.Sc. Animal Science and Fisheries degree programmes of the Faculty by offering basic courses in Crop Sciences.

The Department has 26 academic staff members specialized in various disciplines of Crop Sciences and allied fields and 23 non-academic staff. The staff with their qualifications and experience provides the students an opportunity to gather relevant knowledge and enhance their practical and quantitative skills. Teaching and research in the Department is amply supported by its infrastructure with modern lecture theatres and well equipped laboratories. The Department also manages the University Experimental Station at Dodangolla covering 79 ha, which has a seed laboratory, nurseries, greenhouses, mushroom unit, forest plantations, a tissue culture laboratory and residential facility for over 80 people. The experimental station also provides facilities for field research programmes of students and staff in the intermediate zone of Sri Lanka

The members of the department are actively involved in teaching, research and academic administration through Boards of Study in Crop Science and Biostatistics at the Postgraduate Institute of Agriculture (PGIA). A wide range of courses are offered under the two Boards of Study and the staff of the Department serves as course instructors and research supervisors of the postgraduate programmes of the PGIA leading to M.Sc., M.Phil. and Ph.D. degrees. The staff also serve as resource persons and supervisors of research students who register at other universities in Sri Lanka and overseas.

Majority of staff members of the Department have contractual research grants from national and international research organizations. In addition, the staff also conducts short term training courses for public and private sector organizations, some members of staff also serve as consultants to private industries, government departments and research institutes, and majority of the academic staff also serve in national and international scientific and policy making bodies supporting the national development.

Telephone: 94 812 395111

Webpage http://agri.pdn.ac.lk/dept/crop_home.php?dep=Department%20of%20Crop%20Science

Department of Food Science and Technology

The Department of Food Science and Technology was established in 1986. Since then, the Department has gradually developed into its present status with laboratories and facilities of its own. The Department conducts teaching, and basic and applied research in different aspects of Food Science, Biotechnology, Human Nutrition and Food Technology. The Department plays an important role as the lead-department in offering the B.Sc. degree in Food Science & Technology (B.Sc. FST), in addition to its contribution to the B.Sc. degrees in Agricultural Technology & Management (B.Sc. AgTech & Mgt) and Animal Science & Fisheries (B.Sc. AS & F).

The Department is engaged in teaching in all four years of the undergraduate degree programmes. In the B.Sc. AgTech & Mgt degree programme an opportunity for advanced studies is offered to a selected group of students during their third and final years of study. The students in the advanced programme follow courses and undertake research in the areas of food microbiology, food processing, preservation and postharvest technology; food sanitation, analysis and quality control; product development and sensory evaluation; food constituents and nutritional studies.

The students following the B.Sc. FST degree programme undergo a comprehensive training in the subject during the 4-year period including an industrial training. At present the Department has facilities to provide practical training in many subject areas in relation to food science & technology. The students carry out their final year research projects at public and private sector institutions.

The Department provides assistance to public and private sector organizations as well as to interested individuals in their professional development by offering short term training courses. It also assists those institutions requiring development of curricula and teaching materials. The staff members serve as consultants to the industry, and members of committees of several scientific organizations, visiting staff to the Postgraduate Institute of Agriculture (PGIA) and Postgraduate Institute of Science (PGIS) of this University, and other undergraduate and postgraduate programmes of many Universities in Sri Lanka. In addition to the M.Phil. and Ph.D. programmes the Board of Study in Food Science & Technology of the PGIA offers M.Sc. degree programmes in Food Science & Technology and Food & Nutrition both in Peradeniya and Colombo. The staff members also serve as external examiners to many other universities for undergraduate courses in Food Science. The Department achieved a very high rank for quality assurance in the recent subject review assessment conducted by the Quality Assurance & Accreditation Council of the UGC.

The Department is engaged in research on assessment of food for their quality and nutritional characteristics, assessment of food contaminants and adulterants, studies on food processing and preservation to improve food quality and shelf life, development of new food processing technologies, studies on functional effects of food commodities, and microbiological and toxicological studies on food. The Department has also been contributing to the Pro Food & ProPack exhibition organized by the Food Processors' Association of Sri Lanka over the past several years where the undergraduate students exhibit their products and innovations to the general public.

Telephone: +94-81-2395212/ -2395049
Home page: www.pdn.ac.lk/depts/agri/foodSciTec/

Department of Soil Science

Soil Science discipline existed formerly as one division of the Department of Agricultural Chemistry until 1986 and was established as a fully-fledged Department in 1986. The Department offers four courses in the core programme of the undergraduate degree programme and 11 courses in the advanced module. Courses of the core programme are designed to build up knowledge progressively starting from Soil Genesis to Soil Management providing necessary theoretical background in Soil Physics, Soil Chemistry, Soil Mineralogy, Soil Microbiology, Soil Survey and Classification, Plant Nutrition, Soil Fertility and Land Use. Practical applications of all the courses address agronomic and environmental concerns giving equal emphasis on both. The advanced module provides more in-depth knowledge on theoretical aspects that are essential to develop technologies to address vital issues on sustainable land management.

Laboratory and field practical sessions are integral components of all the courses offered by the Department. Through these sessions, students develop skills to analyze soil, plant, manure, fertilizers and water and subsequently make judgments on their suitability for food production based on the availability of nutrients, and organic and inorganic contaminants. Students following the advanced module in Soil and Environment conduct independent research projects in collaboration with national research institutes and private sector organizations. This provides a training to conduct scientific research, identify problems at different levels of social strata and suggest suitable remedial measures through technological approaches.

Academic staff members of the Department are also involved in postgraduate education, serving as visiting lecturers to the Board of Study in Soil Science of the Postgraduate Institute of Agriculture. At present, three M. Sc. degree programmes are offered; namely, 'Environmental Soil Science', 'Soil and Environmental Microbiology' and 'Tropical Soil Management'. In addition, academic staff also renders their services as supervisors to the students following M. Phil. and Ph. D. degree programmes related to Soil Science.

The Department has well equipped laboratories capable of performing a wide range of analyses using modern sophisticated equipment. Using these facilities, a number of research programmes are continuing in the research laboratories of the Department, which include studies on organo-mineral complexes and phosphorous dynamics, greenhouse gas emission from wetland rice, formulation of biofertilizers for rice and field crops, assessing and digital mapping of soil parameters for site specific management practices, nutrients and pesticides dynamics in soil and their impact on environment, antibiotic resistance development in the environments, documenting soil microbial diversity using metagenomics approach, establishing baseline concentrations of potentially toxic trace elements in soils, heavy metal contamination of soil, water and food, improving carbon sequestration in agricultural soils, developing a soil data base on

Sri Lankan soils and formulating web-based tool to assist with fertilizer recommendation for rice cultivation. The funds for research are provided by national and international organizations while undergraduate and postgraduate students are involved in such projects at various capacities.

The Department also owns a 'Soil Survey Laboratory and SRICANSOL Resource Centre', which was developed with the partnership of Soil Science Society of Sri Lanka. The laboratory and library facilities in the centre are available for student use. Furthermore, students have the unique opportunity to interact with leading soil scientists in the island and take part in inspiring discussions.

Telephone: +94-81-2395200
Homepage: www.pdn.ac.lk/depts/agri/soilSci

Mahailuppallama Sub Campus (MI)

Lecturer-in-charge: Dr. S.P. Weligamage

The Mahailuppallama Sub Campus is located in the Dry Zone of Sri Lanka about 128 km away from the University of Peradeniya. It was established in 1968 with the aim of training our students in a real agricultural environment with the assistance of many surrounding agricultural institutions. Another goal of the programme was to produce efficient practical Agriculturists to suit any sort of employment suitable for their qualifications in the field of agriculture. It is also a place of transformation of just A/L pass student to a experienced field experience filled graduate student level.

The campus has about 20 ha of land amidst many agricultural institutions from which scientists are invited for discussion classes to share their knowledge and experience with our students. Some of these resource places are the Field Crop Research and Development Institute, In-service Training Institute, Seed Laboratory, Seed Farm, Farm Mechanization Research Centre, Institute of Postharvest Technology, Mahaweli Development Authority, New and Old Colonization Schemes etc. Field visits are also arranged to these places. Farm families at Mahailuppallama also support the academic program through their interactions with students.

The academic programme is held during the first semester of the B.Sc. AgTech & Mgt degree and includes subject areas such as Crop Production Technologies, Field Engineering, Principles and Practices of Animal Production, Applied Agribusiness, Developmental Extension, Botany of Field Crops and Soil Resource and Ecosystem. Orientation Program followed by intensive English language training program and some complementary courses, Sinhala and Tamil programmes conducted by the National Institute Language Education and Training, and a life skills development and team building programme are also held at the sub campus, prior to the commencement of the academic programme.

The campus has residential facilities for about 100 male and 200 female students in the hostels. Apart from that sub campus has state of art auditorium for 270 students, Community Development Unit, outbound training center and an agricultural museum. The overall supervision of the Mahailuppallama Sub Campus is by the Lecturer-in-Charge.

TRAINING AND RESEARCH FARMS OF THE FACULTY

University Experimental Station at Dodangolla

The University Experimental Station is located at Dodangolla, Kundasale in the mid country intermediate zone agro-ecological region, which is 20 km away from the Faculty of Agriculture, University of Peradeniya. The farm occupies 79 ha of land, allocated for the production and experimentation purposes. The farm facility is heavily utilized for the undergraduate academic programme offered by the Faculty. The facility is also used to support outreach training programmes offered for various government, private and non-governmental organizations in the country on agriculture and allied field of study.

Apart from having production fields and long term experimental units, the experimental station also consists of well managed and equipped plant nursery, germplasm collections, mushroom production and tissue culture units, organic production units, protected green houses with partial environmental controlled facility; and farmer training units and accommodation facilities for over 80 participants. The development of this experimental station *cum* farm was mainly due to arrangements made by the Faculty and University of Peradeniya in collaboration with Department of Agriculture and other national level research and development institutes, private sector organizations and foreign collaborations.

In addition to providing training practical skills to undergraduates and postgraduates of University of Peradeniya and other faculties of Agriculture in Sri Lanka, many undergraduates and postgraduates of other universities have conducted their research programmes using the facilities available at the University Experimental station. It also provides training and skill development facilities for foreign students arriving from various internationally recognized universities and institutes. The experimental station is also registered under the Government Department of Agriculture, Sri Lanka as a contract vegetable seed producing farm. Production of horticultural plants and export agricultural crops has also received the highest priority in the farm due to their commercial values. A Agro-products Sales Centre located at Faculty premises at Peradeniya sells the farm-fresh products to the clients.

The experimental station is managed by a Farm Manager under the supervision of the Head/Department of Crop Science, with a Lecturer-in-Charge appointed by the Department coordinating the activities.

Livestock Field Station at Mawala

The Livestock Field Station, which is managed by the Department of Animal Science, is located in Mawelawatta, Uda Peradeniya about 2 km away from Faculty of Agriculture. The Field station includes production units of various breeds of cattle, buffalo, sheep, goats, rabbits, chicken, quail, ducks, swine, and a micro livestock production division, which are maintained by the Department for teaching, research and training in Animal Production.

Improved varieties of pasture and fodder have been established for the farm use and also to issue planting materials to the farmers. A pasture museum with a rare collection of pasture varieties and an Arboretum of exotic and local *Gliciridia* provenances have been established at the Department premises.

Various kinds of fresh farm produce and processed dairy and meat products are sold to the surrounding community, at the Agro-Product Sales Centre located within the Agriculture Faculty premises and at the University Milk Bar located near the Faculty of Arts. Both of those sales outlets are managed by the Department of Animal Science as a service. The Department has been expanding its processing and sales activities with the recent establishment of Dairy Product Processing Center at the Livestock Field Station. In addition a milk collection network is being established involving dairy farmers in the surrounding areas, whose milk will be collected daily at a relatively higher price, processed at the proceeding center and sold at the above sales outlets.

A Freshwater Fish Unit is maintained as a model to demonstrate livestock-bioenergy-fish integrated system. An area of 30 ha of the Station has been established under improved pastures and fodders. The Poultry Production Unit maintains over 2000 birds, inclusive of layer and broiler grandparent stock, a breed museum, turkey, guinea fowl, Japanese quails.. The wide genetic diversity of each animal species conserved and maintained and the physical resources available in these animal units makes the Department an excellent animal production training establishment in the country.

Meewatura Farm

The 11 ha farm, established in 1958, is located at Meewatura by the Mahaweli river. It is in the mid-country intermediate agroclimatological zone. The objectives of the farm are to:

- (a) facilitate demonstration and research activities for undergraduate and postgraduate students, and
- (b) provide land for research conducted by the academic staff.

Since its establishment, the farm has been managed by the Department of Agricultural Engineering. From its inception, the farm has gradually developed facilities to cater to the users. Farm equipment, office and storage space, irrigation facilities and a house for the watcher are some developments in the past. At present, it serves the following purposes:

- a) Teaching and research for undergraduates
- b) Research for academic staff and postgraduate students
- c) Production of fruits and vegetables.

Land and other facilities are allocated to students and academic staff, when requested. Resources such as tractors, farm implements and labour are adequate to meet the demand.

OTHER ACADEMIC UNITS OF THE FACULTY OF AGRICULTURE

English Language Teaching Unit (ELTU)

Coordinator: Ms. P Jayaweera

The English Language Teaching Unit (ELTU) at the Faculty of Agriculture is a sub-unit of the ELTU of University of Peradeniya. Since its establishment in 1985, the ELTU at the Faculty of Agriculture has developed into a unit equipped with skilled staff and up-to-date technology, and been offering various English language programmes to assist the students at the Faculty improve their English language skills. English was included as a compulsory component for completion of the new curriculum in the course unit system in 1990 and this provided the necessary impetus and motivation.

Currently, the ELTU offers two courses for the students at the Faculty, namely, the Intensive and On-going Courses in English. The Intensive Course in English, which is a supplementary course, is offered for the new entrants to the Faculty, and involves diverse student-centred teaching/learning activities including a variety entertainment programme in English presented by the students at the completion of the course.

The variety entertainment programme, titled, “Elysium” is organized with the intention of providing the students with an open platform to enhance their innovative ideas and also to showcase the skills they have acquired in relation to English. Elysium is a great opportunity for the new entrants as it allows them to perform in English in front of an audience. Performance is an integral aspect of learning a language, and hence, this variety entertainment programme is organized to motivate the students to learn the English language and to assist them in getting rid of certain inhibitions they may have related to learning and using English. Moreover, it also fosters unity among the new entrants as they enthusiastically prepare for Elysium.

The On-going Course in English is offered for the first, second, third and the final-year undergraduates of the Faculty, and it is currently offered in three semesters. The aim of the On-going Course is to further enhance the English language competency of the students *via* an interactive and dynamic pedagogical approach. The English language skills of the students are assessed through a systematic assessment process which tests them on all the four major language skills: listening, speech, reading and writing.

Agric e-Hub

Coordinator: Dr. SA Weerasooriya

The mandate of the Faculty *e*-Hub will be to enhance the infrastructure and place well-trained personnel to support the academic staff and students in achieving the set goals to deepen student learning. In order to facilitate teachers to make the shift from a teacher-centred traditional classroom to a student-centred blended learning environment, it is imperative that the teachers are provided with the needed infrastructure and the professional and technical assistance before and during course development and teaching. For the students to attain the maximum benefit of the facilities made available, access to the system and availability of appropriate technical assistance is a mandate. In addition to the benefits that come to the above mentioned stakeholders, such a facility will cater to other Faculties and Universities in terms of staff training, and will set model for other educational institutes of Sri Lanka to develop similar facilities. In order to meet the standards expected out of such a system the current unit needs re-modelling to fit in to an environment that will facilitate separated areas for interactive learning with appropriate seating arrangements, a conference room with built-in video conferencing facilities, a recording studio equipped with latest audio-visual facilities, a small group lecture theatre, staff rooms, high-speed fixed and wireless internet access, and other needed amenities of an interactive learning environment. In order to achieve the proposed upgrades the Faculty of Agriculture, University of Peradeniya, proposes a renovation for the existing Computer unit in to a modern interactive eLearning hub.

The Faculty *e*-Hub creates a collaborative work environment that facilitates blended learning among the students and the staff of the Faculty of Agriculture, University of Peradeniya. The aims and objectives of the *e*-Hub are:

1. To provide the needed training, assistance, and support to prepare the academic staff members for course development pertaining to a blended learning concept.
2. To address academic staff and student questions and problems of a technical nature.
3. To engage in monitoring and evaluation of the blended learning activities and teacher and course evaluations
4. To conduct workshops and training for the academic and non-academic staff members, and students of the Faculty of Agriculture on Information Technology.
5. To serve as an outreach arm of the Faculty of Agriculture, University of Peradeniya to accommodate workshops, short courses and training programmes offered to other educational institutes of Sri Lanka.

CENTRES AND UNITS OF THE FACULTY

Agribusiness Centre (AbC)

Acting Director: Prof. DVP Prasada

The Agribusiness Centre (AbC) established in 1997, is primarily for developing greater career opportunities in commercialized agriculture, while providing additional and consolidated research and development programmes and extension services for the Faculty. The functions of the Centre are to create the required linkages between academia, students and industrialists, which is an understanding between business, education and research.

The Centre facilitates students by providing opportunities to develop skills and be equipped with the latest research and development, and extension capabilities to perform efficiently and effectively, once they are employed in industry or self employed in commercial agriculture.

A career development and placement service for industrial training as well as for graduate and postgraduate employment is available to students from the first year of the undergraduate programme.

The Centre coordinates most of the outreach activities of the Faculty. The clientele or target groups for these activities are farmers, businessmen (industrialists), traders, new entrepreneurs, and students including school children. The development of collaborative research and development programmes is an important activity of the Centre.

The activities of the Centre are described below:

1. Maintain a database on agribusiness and agribusiness ideas with the collaboration of the industry.
2. Undertake feasibility studies and suggest profitable alternatives for unprofitable ideas.
3. Guide the graduates to implement these agribusiness ideas to profitable ventures.
4. Monitoring the implemented business ideas and provide necessary guidelines for it's sustainability.
5. Training programmes for trainers to upgrade and update their knowledge and skills to keep pace with environmental changes.
6. Special programmes to develop the entrepreneur skills of women to make their role in agriculture a more productive one.

7. Keep a track on career placement of agricultural graduates and obtain feed back for developments in curriculum.
8. Organize technological exhibitions to recognize the innovations and to promote the use of technology.
9. Provide referral services for technological users.
10. Business consultancy clinics for agricultural entrepreneurs while creating employment opportunities for agricultural graduates.

Agricultural Biotechnology Center (AgBC)

Director: Prof. PCG Bandaranayake

Agricultural Biotechnology Centre (AgBC) was established in 2003, with the mission to implement training and research in biotechnology based on national priorities and to serve as an outreach and service Centre for national research and educational institutes as well as the private sector organizations, so as to serve the overall needs of the country and the region. The AgBC is still the only institution of its kind devoted to Agricultural Biotechnology in Sri Lanka.

At present the AgBC operates under the guidance of Dean Faculty of Agriculture and a full-time Director, who is also a senior lecturer attached to the Faculty of Agriculture, University of Peradeniya. The Centre's facilities contain basic necessities such as Molecular Biology Laboratory, Plant Tissue Culture Laboratory, Microbiology Laboratory, Microscopy facility, Biochemistry facility, Bioinformatics facility and green house among other laboratory and office spaces.

AgBC provides a multidisciplinary environment for research, creating linkages with the scientific community, research laboratories, research institutes and the private sector to contribute towards biotechnology and related programs. Basic and applied research projects are conducted with foreign and local collaborations. AgBC also conducts contract research, mainly for the government departments and the private sector. International organizations such as Food and Agriculture Organization of the United Nations and the World Bank have identified AgBC as the Centre of Excellence and selected as the service provider for the country projects.

Postgraduate students registered at the Postgraduate Institute of Agriculture and the Postgraduate Institute of Science conduct their research at AgBC labs and plant houses. AgBC is a popular placement for final year undergraduate research projects and internships programs for Undergraduate students of the Faculty of Agriculture, University of Peradeniya as well as other public universities in the country.

AgBC also offers workshops, training programs and “hands on experience” to the scientific community to develop skills in latest techniques in the field. These programs range from short & focused courses (typically 1 day) to longer extensive courses up to 100 hours. Special programs are also offered free of charge for the undergraduate students of the faculty of Agriculture and for the school children and teachers. In May 2018, AgBC inaugurated the Biotechnology Consortium, Sri Lanka to expand our horizons.

Agriculture Education Unit (AEU)

Director: Prof. JK Vidanaarachchi

The Faculty launched the Agriculture Education Unit (AEU) in 2007 to develop innovation competence among the trainees in the secondary and tertiary education system, and the young entrepreneurs in agribusiness to improve their contribution in achieving the national development goals. The AEU will help development of the secondary and tertiary education in Agriculture and allied sciences in the country, and carry out research and development work in the field of agricultural education in collaboration with the line-Ministries/Departments in the public sector and private sector organizations. The AEU will also carry out programmes to attract younger generation to the production and value addition of agricultural commodities via building up their attitudes towards this profession, and provide services to the small, medium and large-scale entrepreneurs to support rural and regional development I collaboration with the state and private sector organizations. The AEU will work on the private public partnership model in improving extension education in the country.

Objectives of the Agriculture Education Unit

- (1) To train a new generation of trainers to develop Agricultural Education in the secondary education (in accordance with the requirements identified by the Ministry of Education) and tertiary education systems of Sri Lanka. The AEU will provide them with up-to-date, comprehensive knowledge, based

on solid theoretical foundations. Trainers will also acquire the practical skills and competence needed to fulfill the requirements of their profession and to participate actively in professional life and play a creative role in alleviating poverty and ensuring food security.

- (2) Training the school leavers, especially focusing on youth and women to build their capacity to become effective entrepreneurs in initiating and managing agro-based industries. The AEU will use the private-public sector partnership models for rural empowerment as a mechanism to relieve the communities from the poverty trap.
- (3) To provide training to school leavers in Sri Lanka on concepts and traditional and modern technologies in Agriculture through a distance mode of education, with a main emphasis to empowering women.
- (4) To conduct and take part in research in agricultural education
- (5) To actively involve in preparing national level examinations in Agriculture and allied sciences
- (6) To provide consultation in the curriculum development, teaching methodologies (in collaboration with the Teaching Methods Unit of the University of Peradeniya) for teachers in the secondary and tertiary education system
- (7) To be the focal point and coordinator of the secondary and tertiary education in Agricultural Education especially through the mode of distance education, and consultation in the region.

Teaching Methods Unit (TMU)

Chairperson: Prof. HLJ Weerahewa

The Teaching Methods Unit (TMU) of the Faculty of Agriculture was established in September 1991. Academic staff members of the Faculty who has obtained specialized training on teaching methodologies have formed the core group of trainers of the TMU. The unit attempts to improve the skills and attitudes of teachers as a means of improving the quality of the teaching programme and thus the graduates of higher education institutes. The Teaching Methods Unit currently supports the Staff Development Centre of the University of Peradeniya by providing resource persons and other facilities to hold workshops and other training programmes of varying durations to help teachers improve the wide range of skills necessary to make them more effective and efficient. Each programme is specially designed to achieve the stated objectives of improving the skills of the participants.

Objectives

1. To introduce new interactive methods of teaching at the university level, so that maximum learning would take place, even if the environment is not very conducive to learning.
2. To encourage the university teachers to use a wide variety of teaching resources to facilitate learning.
3. To equip the university teachers with a wide range of teaching methods so that they will be able to select the most appropriate under a given condition.
4. To improve the examination procedures so that the students are being assessed fairly on their knowledge of the subject matter and related skills.
5. To enhance the attitude of university teachers towards teaching.
6. To make the teachers aware, that other than imparting knowledge and skills, students' attitudes, communication skills and leadership qualities need to be improved during the degree programme.

Counselling and Career Guidance Unit (CCGU)

Coordinator: Prof. W.S. Dandeniya

The Counselling and Career Guidance Unit (CCGU) provide professional counselling services to needy students which is important to cope-up with different stresses that students may face during their undergraduate life. Moreover, career guidance has been identified as a part of the curriculum and marketability of graduates in the world of work. Students are provided with opportunities for improving leadership, soft and employability during their undergraduate career. The CCGU attempt to enhance the career focus and employability of students through many activities conducted throughout the degree programs beginning from their entrance as an undergraduate to the faculty.

Objectives

1. To provide professional counselling services to needy students which is important to cope-up with stresses and tensions of students, when they enter into the undergraduate career.
2. To guide the students to prepare themselves to be effective in their chosen careers

Gender Education & Women's Initiative Unit (GEEIU)
(Department of Agricultural Extension)

Coordinator: Ms. RMS Wijerathne

The Gender Education and Women's Initiative Unit (GEWIU) has been established to cater to the gender education and training needs, specially to meet specified needs of undergraduates, in agriculture as well as other disciplines, trainers and other resource persons outside the university and to help them develop their skills to become better achievers. It also provides a place for women to meet, exchange ideas and take initiatives to find solutions to special problems they face in their chosen training programmes or careers. It is for all interested persons, and for those who want to benefit by the resources and expertise developed and networked through the unit.

Objectives

1. Provide a social and physical space for women to develop a niche for themselves in order to enhance their skills to mitigate some of the disadvantages that affect their access to appropriate employment and career mobility.
2. Design and implement training programmes and workshops on gender.
3. Develop a close collaboration with organizations engaged in these activities in order to complement and supplement their efforts to be more efficient and productive.
4. Develop teaching and training resources.

Activities

1. Conduct training programmes, workshops, seminars, action research on gender related issues for trainers, planners, policy makers and other officers of organizations.
2. Network with other organizations to mobilize resources and develop programmes to benefit its users.
3. Liaise and assist women entrepreneurs.
4. Facilitate successful achievements of initiatives taken by women to solve their professional needs and problems.

Soil Plant Water Analytical Service (Department of Soil Science)

Coordinator: Dr. AMCPK Attanayake

The Department of Soil Science supported researches of Universities and various institutions and individuals of outside organizations performing laboratory analysis of soil, plant and water until early 1990's. Since requests on soil, plant and water analysis kept increasing due to intensification of cultivation and environmental issues, Department established a formal non-profit oriented service in 1996 with the approval of the Council of University of Peradeniya.

Objectives of the Soil Plant Water Analytical Service are to:

1. Provide a service to obtain reliable data pertaining to soil, plant, and water analyses to customers
2. Develop research projects with customers on issues pertaining to plant nutrition and soil fertility management

Since the establishment of this service, the Department has catered to a wide range of customers performing analyses of many thousands of soil, plant, water and fertilizer samples for nutrients, pollutants and impurities using standard analytical procedures developed by internationally recognized laboratories / institutes.

The information on services provided could be received from the Head of the Department or Coordinator of Soil, Plant and Water Analytical Service of the Department of Soil Science. Any request for analysis should be forwarded to the Coordinator of Soil, Plant and Water Analytical Service with dully filled sample submission forms, which can be downloaded from the website of the Department or collected from the Department or received by sending an email (dsoilscience@gmail.com). The analysis will be coordinated by an academic staff member and she/he will provide additional information on request on sampling and sample handling and a recommendation on the most suitable analysis that should be performed. The samples given will be analyzed by skilled personnel using modern equipment adopting standard methods. Analysis by specific methods could also be conducted subsequent to discussions. Under the close supervision of academic staff members, graduate and undergraduate students and technical officers are also involved with the service, gaining extra experiences in sample processing,

handling and analyses. The laboratory follows a thorough quality assurance and control techniques to assure the reliability of the data generated. The earnings generated from this service is used to purchase chemicals and consumables necessary for analytical service and to upgrade or repair equipment.

**Industrial Laboratory Services Unit
(Department of Agricultural Engineering)**

Coordinator: Prof. KSP Amaratunga

The Industrial Laboratory Services Unit (ILSU) functions as a facility for the development of new technologies for the industry. The objectives of establishing this unit were to perform the following activities:

1. Undertake research and development projects from outside institutions and industries
2. Initiate research and development projects in areas such as development of transducers, robotics and other equipment based on new ideas for research and industrial applications
3. Performance evaluation of existing industrial systems for efficiency improvement and energy saving initiatives
4. Carry out collaborative research with agricultural and process engineering disciplines

The ILSU functions as one of the self-supported outreach arms of the Department of Agricultural Engineering of the Faculty of Agriculture. The unit will be able to hire skilled personnel, invest on new projects, undertake repair and maintenance requests from internal and external clients, and market its services and products to generate funds. The state of the art laboratory facility established in the Department of Agricultural Engineering has facilities for undertaking above mentioned tasks.

Community Development Unit, Mahailuppallama

Coordinator: Ms. RMS Wijerathne

The Community Development Centre at Mahailuppallama expects to bridge academic staff and students with the community organizations enabling them to plan and implement community-based learning and research initiatives while providing a service to the rural agricultural communities. The unit will be stationed at the Mahailuppallama sub-campus and will work to create a mutually beneficial relationship between the Faculty of Agriculture and the rural communities in and around Mahailuppallama, Anuradhapura and Pollonnaruwa area focusing on farm operators, small and medium agri-business operators, government and private sector agricultural service providers and traders. The staff and the students will focus on crop and livestock production activities, food processing activities, small business development and natural resource management strategies adopted by the community and will design and offer various training programs, conduct research and provide appropriate technology for regional community development.

The unit will be responsible in:

1. Bridging academic staff and students with community partners
2. Establishing and sustaining a registry of community partners
3. Identifying needs of the community partners that can be addressed by the students of the Faculty of Agriculture
4. Initiating, sustaining, monitoring and evaluation of community based programs
5. Conducting research on community based learning and community development
6. Offering workshops, training programs and seminars to the communities on current issues using the resource base of the Faculty of Agriculture
7. Liaison with various government, non-governmental and private sector stakeholders

STUDENT SOCIETIES OF THE FACULTY OF AGRICULTURE

Introduction

The University provides opportunities to enable students develop the required technical, scientific, professional, and social skills required to be successful graduates. The formal learning in the classrooms, laboratories, farms and fields is limited to the acquisition of technical skills in Agriculture. However, for success as a professional and a citizen in a rapidly changing world, one must acquire a range of social skills, such as the ability to organize, communicate effectively, plan and carry out tasks in any given situation under various constraints, be able to work with a range of different fields in a tactful and effective manner, having a positive attitude to what is undertaken, being responsible and reliable, being able to cope with sudden unforeseen situations in an unruffled and amicable manner etc. These skills are developed best in a non academic setting outside the classrooms. For the development of these skills, the University provides opportunities in sports and in students' organizations.

Objectives of Student Societies

The University enables the students to carry out activities in a range of students' associations. These are listed out in the first handbook of the University written in 1947 by Sir Ivor Jennings. These are valid even today.

1. Acts as a representative organ of the students.
2. Organize lectures, debates, concerts, dances, social and other activities.
3. Organize games/sports.
4. Manage common rooms and restaurants.

The list of registered students associations are given below.

Agriculture Faculty Buddhist Brotherhood Society
Agriculture Faculty Chess Club
Agriculture Faculty Engineering Students' Society
Agriculture Faculty English Literary Association (AFELA)
Agriculture Faculty Journalism and Media Society (AFJM)
Agriculture Faculty Students' Union (AFSU)

Agriculture Faculty Social Science Society
Agriculture Faculty Management Science Society
Agriculture Faculty Forestry Society
Horticulture Society, Faculty of Agriculture
International Student's Forum (ISF)
"Prabuddha Kala Kawayaya" Sinhala Literary Association
Society of Food Science & Technology
Soil Science Society, Faculty of Agriculture
Student Society of Animal Science
The Cooperative Society, Faculty of Agriculture
The Nature Society, Faculty of Agriculture
The IT Society, Faculty of Agriculture

THE AGRICULTURE LIBRARY

Senior Assistant Librarian: Ms. HNK Dissanayake

Library Collection

The Agriculture library is one of the seven sectional libraries in the University of Peradeniya Library Network. It mainly serves the Faculty of Agriculture and the Postgraduate Institute of Agriculture (PGIA). It is located in a newly built four storied building next to the RR Appadurai Auditorium of the Faculty. The main objective of the Agriculture Library is to strengthen the agriculture education and research programs of the Faculty of Agriculture, University of Peradeniya with the provision of information in print, non-print and electronic media. Accordingly the library has been able to develop a core collection of textbooks and journals in Agriculture, Animal Science, Forestry and Food Science. The subjects covered by the library have been expanded with the introduction of new disciplines to the study programs of the Faculty of Agriculture and PGIA. New subjects such as Tissue Culture, Biotechnology, Aquaculture, Floriculture and Landscaping, and Environmental Management etc. have been added to the library collection in the past. The library textbook collection has been increased up to 41,173 books. The periodical collection comprises of 432 titles including key journals in Agriculture, review literature such as annual reviews, and some major abstracting and indenting journals. At present the library subscribe to only 4 foreign and local periodicals. The library has 1,046 theses and 5,750 final year project reports. These two collections are very valuable as they mostly carry original research conducted in the country. The library has been a depository library of the International Service for National Agricultural Research (ISNAR) publications. Publications of all international research institutions in the CGIAR are also being received by the library on complementary basis. The library provides access to number of electronic journals and databases through the Agriculture Library web page. CAB CD ROMs are available from 1989-2013.

Access to Library Collection

The library collection is accessible by making use of the library card catalogue, library in-house database and the Web OPAC (On line Public Access Catalogue).

Library Services

The Library offers a lending service, reference service, inter-loan services, AGRINET services, literature searching services to all students and teachers. A photocopying facility is also available at the Library.

Lending Service: Lending facilities are available for undergraduates and postgraduate students of Agriculture and to the members of the academic staff. Para professionals of the Faculty of Agriculture are also eligible for lending services.

Reference Services: The library is equipped with basic reference materials such as encyclopedias, dictionaries, handbooks and directories etc. which are needed for carrying out quick references. These materials are kept on the first floor of the library. Staff of the first floor and counter assists readers to locate information and materials.

Inter-Library Loan Services: Students and teaching staff could make use of this service to obtain items which are not available at the Agriculture library. The agriculture library has established close links with other libraries in the country in relation to inter-library loan activities. The resources at the Agriculture library are being shared by the scientific community in other institutions through inter-loan activities.

Literature Surveys: The library is equipped with secondary sources such as bibliographies, abstracting and indexing services which are meant for conducting literature surveys. Research students are being guided to do their own literature surveys by using these bibliographical tools. Computerized literature searches could be done by using CAB CD-ROMs and other electronic databases available through Internet.

Current Awareness Services: New additions of textbooks and journals are displayed regularly in the library as a current awareness service.

Photocopying Service: The library offers a photocopying service to students on a nominal rate.

Infrastructure facilities: There will be more electronic information added to the Agriculture Library in future. Therefore, it is intended to upgrade the e-zone of the Agriculture Library with more student computers to provide access to this information. The library has few discussion areas. In future the

discussion areas and leisure reading areas will be set up in the library. The Agriculture Library of University of Peradeniya is one of the best libraries in the country which provides Agricultural information.

Library Instruction Programmes

Programs for training users on information skills have been offered by the library regularly for different levels of students. These programs are of two types as basic and advanced. The basic library orientation is conducted to first year undergraduates to introduce the library resources and services offered by the Agriculture library. In this program, the student are educated on how to use the computerized catalogue, electronic databases, other electronic resources such as Internet and print resources in the library for their academic work.

The advance program on information literacy is offered to all final year students of the Faculty of Agriculture on request. In this program the students are trained to retrieve information from electronic databases and internet using different search techniques, evaluation of information, write the literature review, cite references avoid plagiarism etc.

Note: Rules, regulations and other publications pertaining to the undergraduate programmes have been obtained from the respective original documents approved by the Senate of University of Peradeniya. In case of any discrepancy, the original documents shall prevail over the information presented in this prospectus.