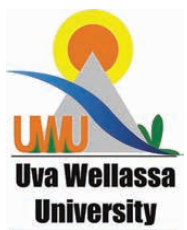
STUDENT Handbook

2019

Faculty of Animal Science & Export Agriculture

UVA WELLASSA UNIVERSITY



STUDENT HANDBOOK

2019

FACULTY OF ANIMAL SCIENCE &
EXPORT AGRICULTURE
UVA WELLASSA UNIVERSITY

Introduction

Uva Wellassa University

is unique academically and administratively as a techno-preneurial University. The trust towards excellence is a key factor that provides driving force to become the center of excellence in value addition in Sri Lanka. All degree programmes are aligned with the vision & mission of the University by offering Essential Skills Development (ESD), Broad General Education (BGE), conceptual & methodological background knowledge in relevant disciplines, field & industrial training and research. The University at present offers postgraduate degree programmes by research and has taken steps to initiate postgraduate degree programmes by course works as well.

Further, University is also in the process of initiating external courses including degree programmes. University has strong concept of three pillars of services; Teaching and Learning, Research and Corporate Social Responsibilities.

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OUR VISION & MISSION

OUR VISION

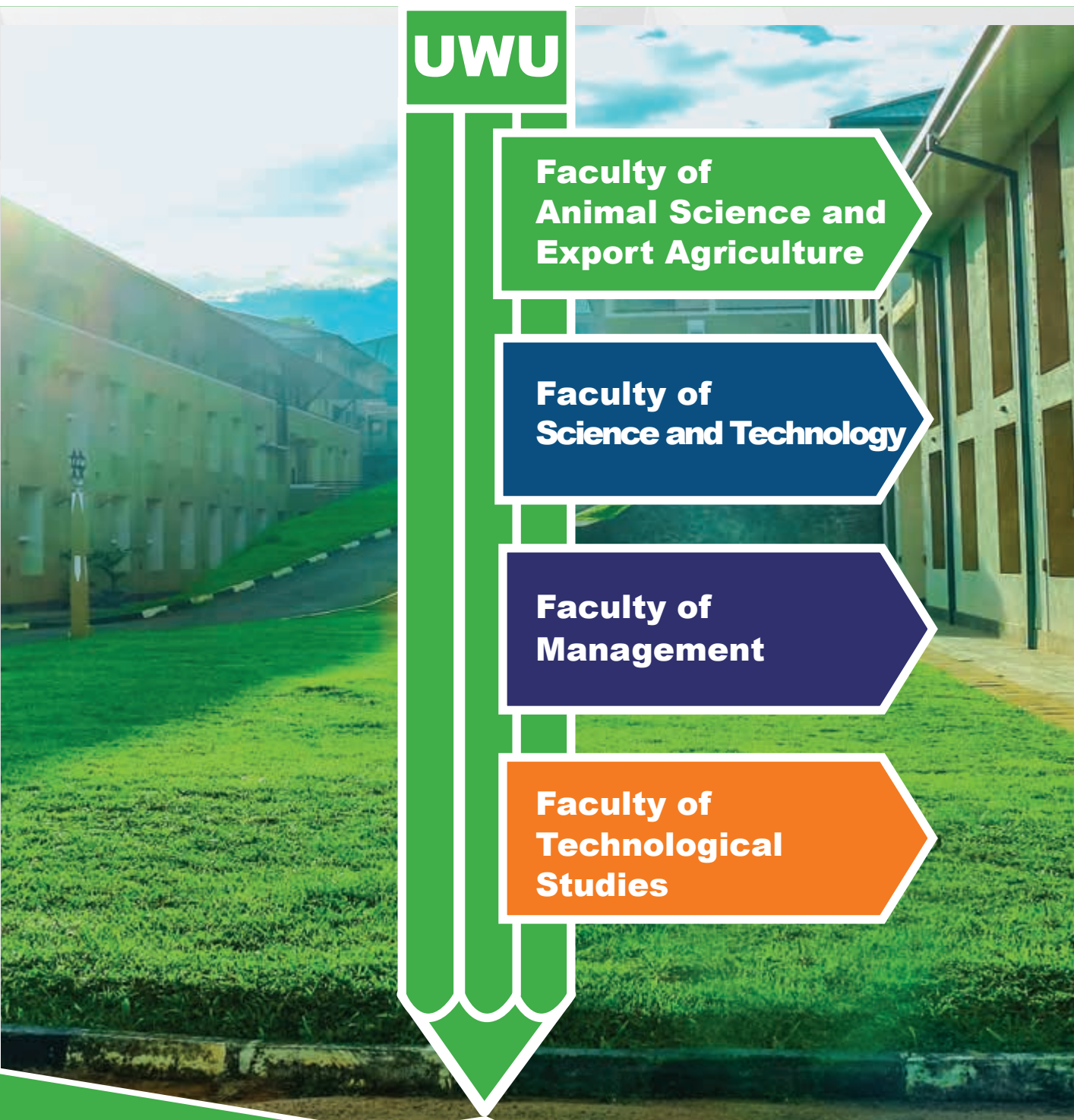
“ Be the centre of excellence in value addition to the national resource base ”

OUR MISSION

“ To produce well-rounded, employable, technocratic and entrepreneurial graduates equipped with knowledge, skills, values and attitudes to make outstanding contributions to the national development

To excel in teaching, learning and research with a strong emphasis on value addition to the national resources ”

FACULTIES OF THE UNIVERSITY



UNIVERSITY LOGO

Logo of the University denotes the theme of Uva Wellassa University. The circle at the crest shows the Rising Sun which is the source of energy and the symbol of knowledge that the University generates and disseminates. It also indicates the rising new generation of the learned. It has a concentric inner circle which also symbolizes modern technology used to acquire and disseminate the respective knowledge. For example, all the academic programmes offer Information Technology related subjects as a fulfilment of current needs to meet demands in the national and international job market. The Blue Stream symbolizes that life giving water from the sky enriching the soil and flowing down to the agricultural land. The Triangle symbolizes the earth representing the mineral resources and it is a symbol of technology. The University continues to develop mineral technology focusing on value addition to national mineral resources. The Three Green Leaves represent our agricultural resources in general and tea in particular. The overall logo states that we generate novel approaches and disseminate Science and Technological Knowledge using modern methods of education on value addition to our resources enriched by Sun and Water from the sky. UWU stands for Uva Wellassa University.

OUR AIMS & VALUES

OUR AIMS

- To effectively deliver new broad-based programmes with outstanding combinations of subjects of relevance to economic development and value addition.
- To create and maintain an environment conducive for the pursuit of academic excellence.
- To produce well-rounded graduates matching the demands of the society.
- To fulfill all expectations of the government in the final assessment of the University's Performance as a national higher education centre.

OUR VALUES

- Respect and tolerance
- Interdisciplinary degree programmes
- Discipline

Student Handbook Preparation Committee

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- Ms. G.G.N. Thushari/ Secretary to the Student Handbook Preparation Committee

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- Prof. D.K.D.D. Jayasena
- Prof. H.M.S.K. Herath
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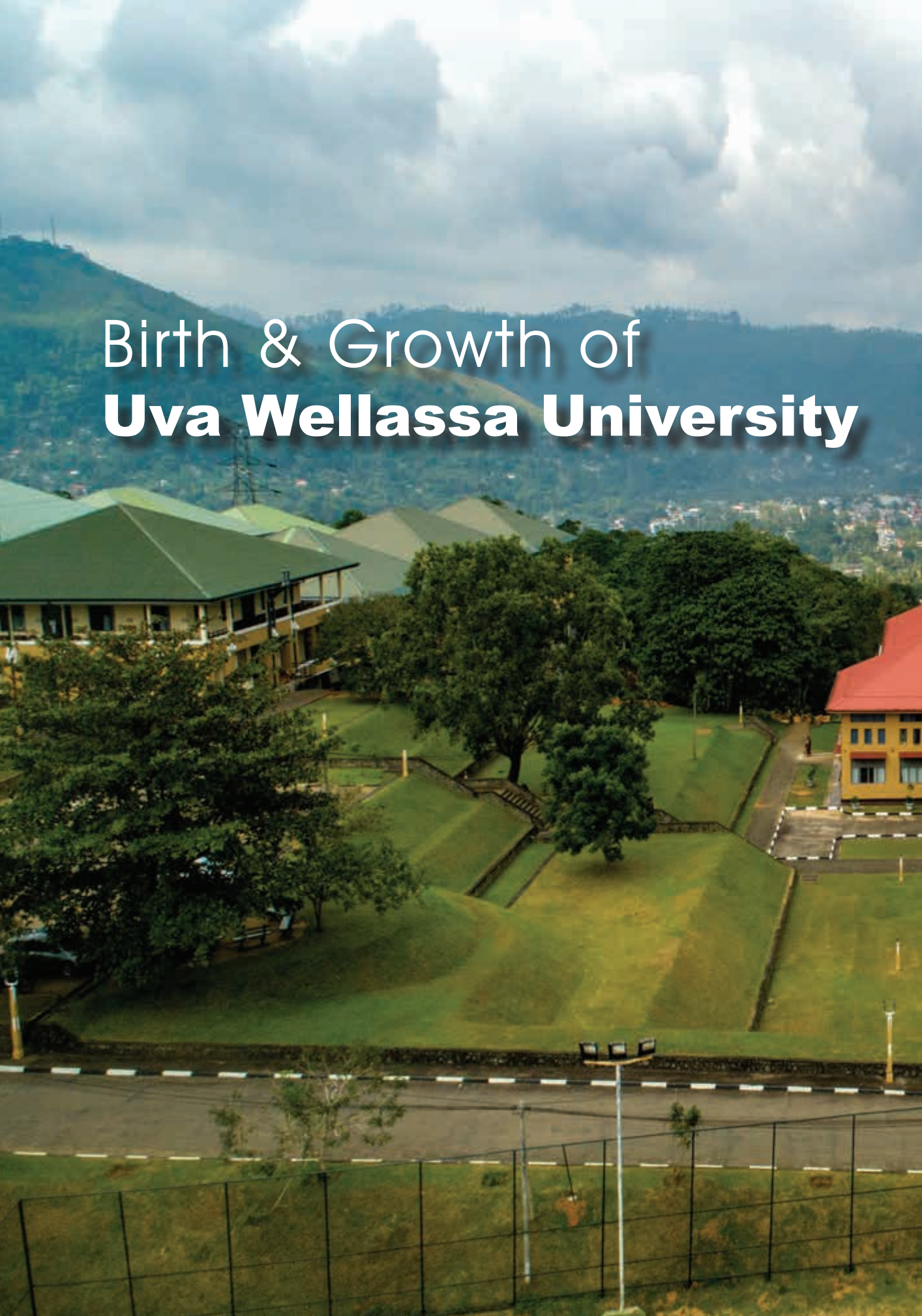
- Dr. E.D.N.S. Abeyrathne
- Dr. W.A.J.P. Wijesinghe
- Dr. L.M.H.R. Alwis
- Dr. S.R.W.M.C.J.K. Ranawana

List of Abbreviations / Acronyms

ANS	-	Animal Science
AQT	-	Aquatic Resources Technology
EAG	-	Export Agriculture
FASEA	-	Faculty of Animal Science and Export Agriculture
TEA	-	Tea Technology and Value Addition
PLT	-	Palm & Latex Technology and Value Addition
BGE	-	Broad General Education
BASc	-	Bachelor of Animal Science
BSc	-	Bachelor of Science
CA	-	Continuous Assessments
CGEE	-	Center for Gender Equity and Equality
CGU	-	Career Guidance Unit
ESD	-	Essential Skills Development
GPV	-	Grade Point Value
GPA	-	Grade Point Average
HoD	-	Head of the Department
ID	-	Identity Card
NGPA	-	Non-GPA
O	-	Optional
UMO	-	University Medical Officer
UWU	-	Uva Wellassa University

CONTENTS



Birth & Growth of **Uva Wellassa University**

Uva Wellassa University was established as the 14th national University in Sri Lanka by the government gazette with effect from June 01, 2005. The University is located in Badulla, the capital of Uva Province. The civil society in the Uva Province urged setting up of a University in the Province with the belief that it would enhance the opportunities for rapid development of the province. During the establishment process of the University, a team headed by Professor H.P.M. Gunasena submitted a report followed by a further detailed concept paper which was prepared by the Coordinating Committee headed by Dr. Chandra Embuldeniya. The Coordinating Committee comprised of Dr. Chandra Embuldeniya – Coordinator, (Senior Management Consultant, Former President, National Chamber of Commerce); Prof. Nimal de Silva – Member (Professor of Architecture, University of Moratuwa); Mr. Nalaka Lankasena – Convener (System Analyst) up to March 2005; Mr. R.A.U. Ranaweera – Member (Senior Assistant Accountant, UGC); Ms. Vishaka Wanasinghe – Member (Legal Officer, UGC); Mr. Nimal Gallage – Convener (Head ICD, UGC) from April to June, 2005. Based on this concept paper, which outlined a new model for the setting up of the University avoiding traditional drawbacks, the University Grants Commission Chaired by Professor B.R.R.N. Mendis cleared the path way for establishment of the Uva Wellassa University.

The University is located in a site comprising two adjacent lands; a 24 acres land acquired from the Ministry of Industries which was formerly allocated for an Industrial Park and initially 35 acres land and then another 25 acres land acquired from Glen Alpin Estate of Balangoda Plantations PLC. The total area would make up a total acreage of 84 acres. The Central Engineering Consultancy Bureau (CECB) was appointed as the consultant to carry out designs and constructions of buildings in 2005. The actual construction was commenced on 7th of August 2005 with the foundation laying ceremony which was attended by then President, H.E. Chandrika Bandaranaika Kumarathunga, then Prime Minister, Hon. Mahinda Rajapakse and Minister of Healthcare and Nutrition: Hon. Nimal Siripala de Silva. Thereafter, the former President H.E. Mahinda Rajapakse under “Mahinda Chinthana” Strategy continued the progress and development of Uva Wellassa University by keeping a very close eye throughout its establishment.

The University initially operated from a smaller room provided by the Ministry of Education at No. 20, Ward Place, and then moved to a building at No. 40/2, Cooray Mawatha, Rajagiriya to coordinate activities during the formative period. Presently the Coordinating Office in Colombo has been shifted to No. 8, Kandawatta Terrace at Nugegoda. The remarkable achievement of establishment of the University was the completion of the Main Lecture Theatre (MLT) and the computer laboratory

in Block “B” by May 2006. Block “A”, “B” and “C” were completed within 2006 while Administration Block was completed in December, 2006. In year 2007, constructions of ''Silver Tips'' and "Blue Sapphire" hostels were completed as a fulfillment of requirement for student accommodation. With further expansions of proposed constructions, Vice Chancellor’s Lodge, Block D (Workshop), Block E with Laboratories, Block F, Senior Staff Quarters, Studio Apartments, Cafeteria, Library, Block G, Senate Building and University Guest House were completed. Thereafter, the infrastructure facilities such as internal road network, medical centre, hard landscaping, metering cubicles, fiber network and sports complex comprised of playground with a 200m track, gymnasium & pavilion have been completed. Waste water drainage & treatment system, CGU, CODL, Security Office, Internal Quality Assurance Unit (IQAU), Center for Gender Equity and Equility (CGEE) were completed later.

Dr. Chandra Embuldeniya, as the founder Vice Chancellor rendered an immense, priceless service with a great dedication to make UWU an exemplary, entrepreneurial National University in Sri Lanka during his period from July, 2006 to July, 2011.After Dr. Embuldeniya’s six years of tenure, Professor Ranjith Premalal de Silva who is an eminent and a renowned academia in Sri Lanka was appointed as the Vice Chancellor in July 2011. In 2014, Dr. G. Chandrasena, one of the senior academia staff members of UWU family was appointed as the Vice Chancellor. He continued the service for development of Uva Wellassa University until 2017. The present Vice Chancellor, Professor Jayantha Lal Ratnasekera assumed duties in February, 2017. He is one of the well experienced and renowned academia in Sri Lanka. Uva Wellassa University is now on a journey of further consolidating its position as the Centre of Excellence for Value Addition with the leadership of the present Vice Chancellor. This signifies that UWU will shine brightly as the Centre of Excellence under his straightforward guidance, advices and leadership.

Also, Uva Wellassa University has always been blessed with far sighted and amiable Chancellors who have held reputed positions nationally and internationally. The first Chancellor of Uva Wellassa University was late Justice P. Ramanadhan and he rendered his valuable service to develop the University through his eminent leadership and guidance. Late Dr. Aluthwewa Soratha Thero, then Chief Incumbent of the Kirivehera Rajamaha Vihara, the Chief Sanga Nayaka of Ruhunu Magam Paththuwa was the second Chancellor of Uva Wellassa University. The Chancellor’s valuable service towards the University was immense and the visionary leadership strengthened the University’s journey towards producing well rounded leaders with values and knowledge. Present Chancellor of the University is the Chief Incumbent

of Sripada, Chief Incumbent of Ratnapura Pothgul Rajamaha Viharaya, Chief Sanga Nayaka of Rathnapura MahaDisawa, Thripitakacharya Dharmakeerthi Sri Sumangala Rathanapala Dhammarakkitha Bengamuwe Sri Dhammadinna Nayake Thero. Identifying the needs of undergraduates, venerable Thero initiated "The Chancellor's Fund" for UWU students with financial difficulties. Moreover, the Chancellor's perception, goodwill and guidance along with compassion always add blessings to the UWU family.

For the first time, the University commenced the academic programmes in August, 2006 offering five degree programmes; Bachelor of Animal Science Honours, Bachelor of Science Honours in Export Agriculture, Bachelor of Business Management in Entrepreneurship & Management, Bachelor of Science in Computer

Science & Technology and Bachelor of Technology in Science & Technology by three Faculties; Faculty of Animal Science and Export Agriculture, Faculty of Management, and Faculty of Science and Technology. As a new Faculty, Faculty of Technological Studies was established in 2017. At present, University offers 13 degree programmes including newly introduced degree programmes; Bachelor of Science Honours in Aquatic Resources Technology, Bachelor of Science Honours in Tea Technology and Value Addition, Bachelor of Science Honours in Palm & Latex Technology and Value Addition, Bachelor of Business Management in Hospitality, Tourism, and Events Managements, Bachelor of Industrial Information Technology, Bachelor of Science in Mineral Resources & Technology, Bachelor of Bio-systems Technology and Bachelor of Engineering Technology. More importantly, the University is blessed with energetic and well qualified staff to deliver these degree programmes smoothly.

Message from the **Vice Chancellor**

Prof. J.L. Ratnasekera

It is with great pleasure I welcome you all to the Faculty of Animal Science & Export Agriculture of Uva Wellassa University (UWU). The UWU was established with a clear vision, highlighting the theme of value addition to the national resource base. All our academic programmes are multi-disciplinary and focused on entrepreneurial education. The Faculty of Animal Science & Export Agriculture aims to increase foreign exchange earnings through research & learning and new technological innovations, whilst adopting advanced scientific and technological approach.

Dear students, as new members of the UWU family, we expect your contribution to sustain the prevailing conducive academic environment, and also to maintain the image of the UWU. We expect you all to integrate with the vision and mission of the UWU, and with the core values of the UWU family. During your stay at the Faculty of Animal Science &Export Agriculture of UWU, we expect your to gain the attitudes, skills and knowledge required by the industry and the society at large.

I wish you all the success in academic life at the Faculty of Animal Science & Export Agriculture of UWU.

Message from the **Dean of the Faculty**

Prof. S.C. Jayamanne

As the Dean of the Faculty of Animal Science and Export Agriculture (FASEA) of the Uva Wellassa University (UWU), I welcome you all with open hands to the faculty of Animal Science and Export Agriculture. You are privileged to join the "UWU family" and study a unique degree focused on value addition to the livestock, poultry, aquatic resources and agricultural crops of the country and become an entrepreneurial graduate. FASEA is one of the pioneering Faculties established with the inception of the UWU. The Faculty comprises with two Departments; Department of Animal Science and Department of Export Agriculture and offers five SLQF Level 6 degrees; Bachelor of Animal Science Honours (BAScHons), Bachelor of Science Honours (BScHons) in Aquatic Resources Technology, Bachelor of Science Honours (BScHons) in Export Agriculture, Bachelor of Science Honours (BScHons) in Palm and Latex Technology and Value Addition and Bachelor of Science Honours (BScHons) in Tea Technology and Value Addition. All our degrees are unique as they are delivered in English medium, provide essential skills and broad general education and focused on transforming students to be entrepreneurial. The Faculty also offers post graduate opportunities and diploma and certificate courses in the related fields.

The curricula of the Faculty are reviewed and updated regularly by qualified academics in consultation with stakeholders considering local, regional and international trends and standards. The qualified staff of the Faculty is committed to high quality teaching, learning and research promoting an intellectually stimulating multidisciplinary environment for studies. Students are also equipped with specialized knowledge in Agriculture, Aquaculture, Fisheries and related subjects, practical Essential Skills, required attitudes and insights to meet the local and global challenges and making outstanding citizens to society.

As students of FASEA, I hope that you will acquire maximum benefits out of the opportunities available and become exceptional graduates who will bring honor and credit to UWU and the country.

I wish you all the very best in your studies and all future endeavors.

DETAILS OF THE FACULTY

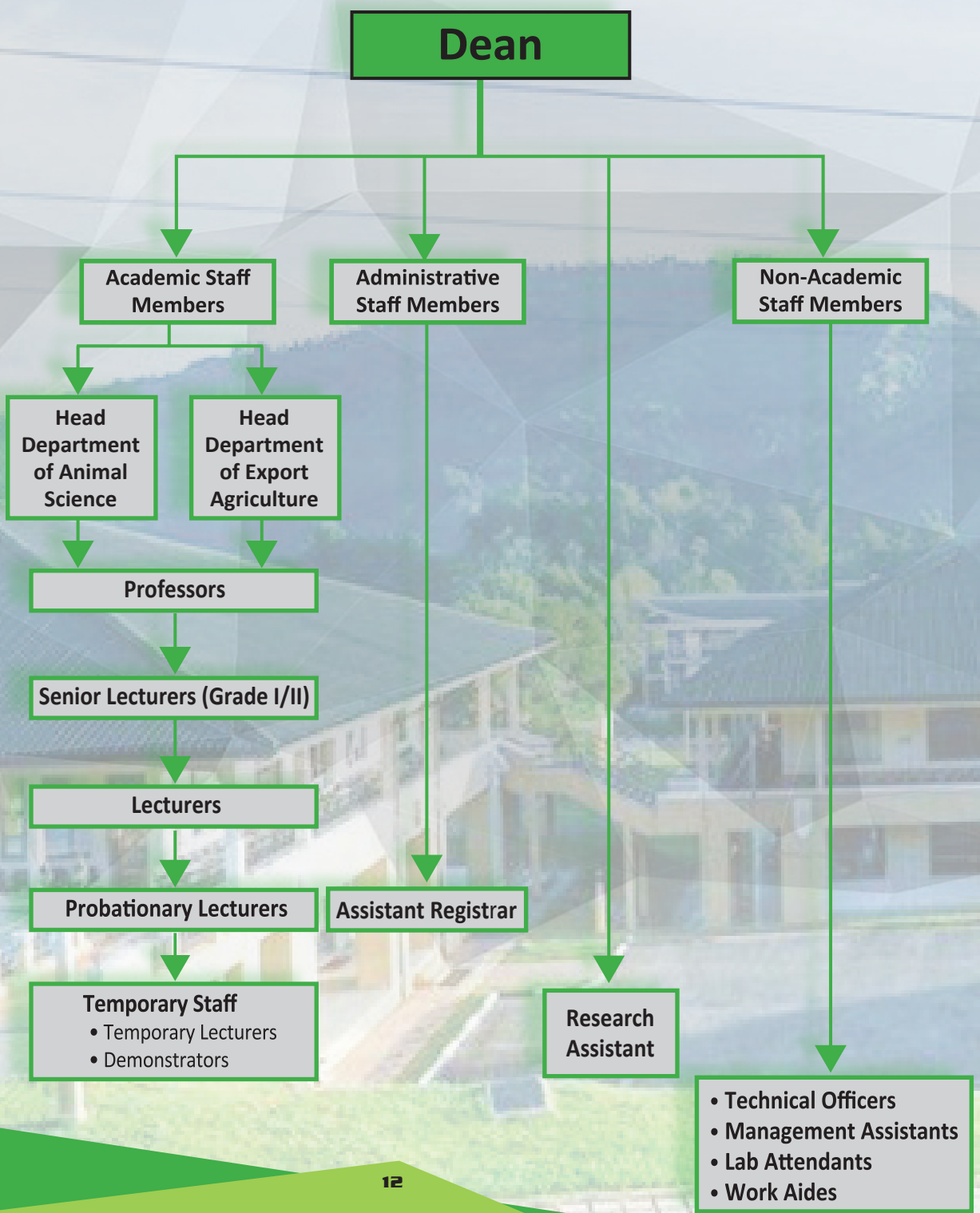
Faculty of Animal Science and Export Agriculture

Faculty of Animal Science and Export Agriculture (FASEA) is one of the pioneer Faculties of the University. The Faculty aims to achieve excellence in agricultural education with special emphasis on the value addition to the local agricultural and aquatic resources. The mission of the Faculty is to support its degree programmes to excel in research and learning with a strong emphasis on value addition to the animals, crops and their produce through modern, scientific and technological approaches for development within undergraduate, postgraduate, specialty, corporate as well as continuing education. It comprises of two Departments; Department of Animal Science and Department of Export Agriculture. Prof. E.N.M. Jayasekara followed by Dr. G. Chandrasena rendered their priceless service

for betterment of the Faculty as the Deans. At present, Prof. S.C. Jayamanne offers her service towards the development of the Faculty as the Dean.

Initially Department of Animal Science was headed by Prof. A.N.F. Perera and Ms. A.C. Weerasuriya as the first Course Director and first Head of the Department, respectively. As the first Head of the Department of Export Agriculture, Dr. G. Chandrasena extended his fullest support for the development of the Department. Currently the Faculty is strengthened with 66 permanent academic staff members including 04 Professors, 21 Senior Lecturers and 41 Lecturers.

ORGANIZATIONAL STRUCTURE OF THE FACULTY



Being a highly qualified and enthusiastic academic team, the staff has achieved different milestones. Four academicians: Prof. D.K.D.D. Jayasena, Prof. S.C. Jayamanne, Prof. H.M.S.K. Herath and Prof. K.G. Premathilake were promoted to the Professorship given the performance made by them during last years. Based on the contribution made in Research, Dr. G. Chandrasena was awarded with President's Award in the year 2008 initially and thereafter, four young eminent researchers: Prof. D.K.D.D. Jayasena and Dr. E.D.N.S. Abeyrathne from the Department of Animal Science and Prof. H.M.S.K. Herath and Dr. W.A.J.P. Wijesinghe from the Department of Export Agriculture were awarded with the President's Awards for Scientific Publications made during the period of 2013-2016. Additionally Prof. D.K.D.D. Jayasena was honored with Committee of Vice-chancellors and Directors (CVCD) Excellence Award in 2016, as the Most Outstanding Young Researcher in Biological Sciences including Agriculture and Allied Sciences. There are several others excellence and recognitions for other staff as well.

The mission of five degree programmes offered by FASEA focuses on excelling in teaching/learning and research with a strong emphasis on value addition to the national livestock and agricultural crops through modern, scientific and technological approaches. At the outset, two degree programmes, namely Bachelor of Animal Science Honours and Bachelor of Science Honours in Export Agriculture were offered by each relevant Department and the first batches of students were admitted in August 2006. Another three degree programmes: Bachelor of Science Honours in Tea Technology and Value Addition (in 2008), Bachelor of Science Honours in Palm & Latex Technology and Value Addition and Bachelor of Science Honours in Aquatic Resources Technology (in 2009) were introduced by the Faculty. At present, the Faculty is offering five degree programmes which mainly focus towards value addition to the agriculture, fisheries and related resource base. Total annual intake for the Faculty is approximately 250-300 students.

FACULTY BOARD

The Faculty Board is the management and administrative committee for effective and smooth functioning of the Faculty. Faculty Board is comprised of following members.

- **Dean (Chairman)**
- **Heads of the Departments**
- **All Professors**
- **All Senior Lecturers and confirmed Lecturers of the two Departments**
- **Two Probationary Lecturers as representatives of the respective Departments**
- **Three external members appointed by the Faculty**
- **One student representative from respective Department**
- **Assistant Registrar (Secretary)**

DEPARTMENT OF

ANIMAL SCIENCE

DEPARTMENT OF ANIMAL SCIENCE

Department of Animal Science is one of the two Departments belongs to FASEA which was commenced as one of the pioneering Departments in the University. The Department aims to provide specialized knowledge and skills on animal production, aquatic resources technology and value addition to national resources by producing competent and skillful graduates. The Department offeres two degree programmes namely Bachelor of Animal Science Honours and Bachelor of Science Honours in Aquatic Resources Technology. Currently, Mr. N.P.P. Liyanage is heading the staff members towards the betterment and achievement of the Department vision.

Academic staff and undergraduates of the Department of Animal Science involve with Cooperate Social Responsibilities (CSR) towards strengthening relationships with the community. These events enable the undergraduates to blend the knowledge and the multidisciplinary skills to become well rounded graduates. The issues and matters relevant to academic, administrative and extracurricular events are discussed at the monthly department meetings.

Degree Programmes and Entry Requirement

Degree: Bachelor of Animal Science Honours (BAScHons)

Entry Requirement: G.C.E. (A/L) qualified with minimum "S" grade in Biology, Chemistry and third subject from the following subjects

Agricultural Science, Higher Mathematics, Mathematics, Combined Mathematics, Physics

Degree: Bachelor of Science Honours in Aquatic Resources Technology [BScHons (Aquatic Resources Technology)]

Entry Requirement: G.C.E. (A/L) qualified with minimum "S" grade in Biology, Chemistry and third subject from the following subjects.

Agricultural Science, Higher Mathematics, Mathematics, Combined Mathematics, Physics

Laboratory Facilities

The Department is comprised of six well equipped laboratories for catering practical sessions and research opportunities with respect to different disciplines and subject specialized areas at the undergraduate and postgraduate levels as follows:

Name of the Laboratory	Lecturer-in-Charge
General Laboratory	Mr. J.M.P. Jayasinghe
Aquaculture Laboratory	Mr. N.P.P. Liyanage
Dairy Laboratory	Dr. D.C. Mudannayake
Feed and Nutrition Laboratory	Dr. N.M.N. Nambapana
Protein Chemistry Laboratory	Dr. E.D.N.S. Abeyrathne
Meat Science & Research Laboratory	Prof. D.K.D.D. Jayasena

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03 **Ms. W.D.L. Aloka**
(Technical Officer Trainee)

04 **Ms. G.G.S.P. Karunarathna**
(Technical Officer Trainee)

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06 **Mr. G.W.T.P. Jayasingha**
(Lab Attendant)

07 **Ms. B.D.W.G.N.M.W.P.K. Mediwaka**
(Lab Attendant)

08 **Mr. N.B.A.M.G. Bandara**
(Lab Attendant)

09 **Mr. P.G.B. Chithrananda**
(Lab Attendant)

10 **Ms. S.W.S.J.S. Senevirathne**
(Lab Attendant)

11 **Mr. P.S.L. Gunasinghe**
(Work Aide)


SAY YOU DO

DEPARTMENT OF

EXPORT AGRICULTURE

DEPARTMENT OF EXPORT AGRICULTURE

Department of Export Agriculture is the one of two pioneering Departments in FASEA. The Department aims to provide specialized knowledge and skills in relation to export oriented agricultural production and processing as well as on agricultural entrepreneurship highly focusing to the value addition in agricultural resources in Sri Lanka. It also expects producing the competent graduates who are excel and expertise in research. The Department offers three degree programmes: Bachelor of Science Honours in Export Agriculture, Bachelor of Science Honours in Tea Technology and Value Addition and Bachelor of Science Honours in Palm & Latex Technology and Value Addition.

Currently, the Department of Export Agriculture is strengthened with 31 academic staff members and is headed by Dr. P.E. Kaliyadasa.

Academic staff and undergraduates of the Department are involved in different kind of CSR activities in addition to the academic activities focusing the general public in Uva province.

Degree Programmes and Entry Requirement

Degree: Bachelor of Science Honours in Export Agriculture [BScHons (Export Agriculture)]

Entry Requirement: G.C.E. (A/L) qualified with minimum "S" grade in Biology, Chemistry and third subject from the following subjects.

Agricultural Science, Higher Mathematics, Mathematics, Combined Mathematics, Physics

Degree: Bachelor of Science Honours in Tea Technology and Value Addition [BScHons (Tea Technology and Value Addition)]

Entry requirement: G.C.E. (A/L) qualified with minimum three "S" grades for one of the following combinations of subjects.

1. Biology, Chemistry and Physics or Agricultural Science
2. Combined Mathematics, Chemistry, Physics

Degree: Bachelor of Science Honours in Palm & Latex Technology and Value Addition [BScHons (Palm & Latex Technology and Value Addition)]

Entry Requirement: G.C.E. (A/L) qualified with minimum three "S" grades for one of the following combinations of subjects.

1. Biology, Chemistry and Physics or Agricultural Science
2. Combined Mathematics, Chemistry, Physics

Laboratory Facilities

The Department is comprised of sixteen laboratories that facilitate practical and research opportunities with respect to different disciplines at undergraduate and postgraduate level, as given below.

Name of the Laboratory	Lecturer-in-Charge
Advanced Microbiology Laboratory	Ms. P.D.P.M.D. Silva
Agriculture System Laboratory	Mr. G. Abhiram
Biotechnology Laboratory	Dr. L.M.H.R. Alwis
Crop Protection Laboratory	Mr. A.N.R. Weerawansha
Food Science Laboratory	Dr. W.A.J.P. Wijesinghe
GIS and Remote Sensing Laboratory	Ms. R.M.C.W.M. Rathnayaka
Horticulture and Crop Physiology Laboratory	Dr. S.R.W.M.C.J.K. Ranawana
In-vitro Propagation Laboratory	Dr. P.E. Kaliyadasa
Latex Technology Laboratory	Dr. A.M.W.K. Senevirathna
Palm Technology Laboratory	Ms. S.M.I.P.G. Bandara
Post-harvest Technology Laboratory	Ms. M.P.M. Arachchi
Soil and Water Laboratory	Prof. H.M.S.K. Herath
Spice Technology Laboratory	Ms. H.A.S.L. Jayasinghe
Tea Processing Laboratory	Ms. K.P.M. Kahandage
Tea Product Development Laboratory	Prof. K.G. Premathilaka
Tea Technology Laboratory	Ms. A.G.A.W. Alakolanga

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03 **Ms. R.M.H. Yonali**
Technical Officer (Trainee)

04 **Mr. H.J.K.S.S. Wijerama**
Technical Officer (Trainee)

05 **Ms. K.M.G.K. Krishnadasa**
Technical Officer (Trainee)

06 **Mr. D. Samararathna**
Technical Officer (Trainee)

07 **Ms. K.G.S.K.S. Wijethunga**
Technical Officer (Trainee)

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Management Assistant

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15 **Mr. K.V.L.L. Kekulawala**
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16 **Mr. P.S. Pathmaraj**
(Lab Attendant)

17 **Mr. A.A.M. Mihar**
(Lab Attendant)

18 **Mr. G.L. Hettiarachci**
(Works Aide)

ACADEMIC PROGRAMMES

FACULTY OF ANIMAL SCIENCE & EXPORT AGRICULTURE

COURSE STRUCTURE

A course unit is a subject module having a credit value, which is a time based quantitative measure used in calculating the Grade Point Average (GPA). The course modules are organized in four levels distributed over four academic years. To successfully complete the degree, undergraduates are required to fulfill minimum number of 120 credits during the four–years time period. The volume of learning at each level is described in terms of credits. One credit is equivalent to 50 notional learning hours including Independent Learning (IL), lectures, practical sessions and field activities according to the SLQF guidelines. A Credit is equivalent to 15 hours of lecture series, or 30 hours of practical component (one hour lecture session = two hours practical session), or both lecture, practical and field sessions as appropriate according to the content of relevant course unit. One credit has been allocated for one hour of lectures per week or 02 hours of laboratory session per week in the time table. All course units delivered under ESD, BGE and core Modules (C) are compulsory for all students. Appropriate combination of course units from Optional Course Units (O) are offered satisfying the minimum required number or credits per semester. Any combination of course units should not exceed the maximum allowed number of credits specified for the semester. The Grade Point Values (GPV) of compulsory non-GPA (NGPA) course units are not considered in GPA calculation. Certain course units require prerequisite courses. Therefore, proper planning of course unit combinations are carried out in advance with a foresight into the subsequent semesters. Later applications for prerequisite courses are not entertained when the advanced course has been delivered in the due semester. Course units offered in a given semester are announced in advance.

Compulsory Course Units

Specific subject areas that directly addresses various topics of a given study programme are offered as compulsory course units. They are listed according to the study programmes.

Optional Course Units

An optional or elective course unit is a course which is chosen by a student from a number of optional or elective course units in their curriculum. Optional course units provide an opportunity for students to gain additional knowledge in a given discipline while elective course units offer further specialized choices for students.

Compulsory Non – GPA Course Units

Non-GPA course units constitute the required aspects/areas that need to be addressed in a curriculum but should not decisively affect the final overall grade. The Compulsory NGPA course units are not considered in GPA calculation.

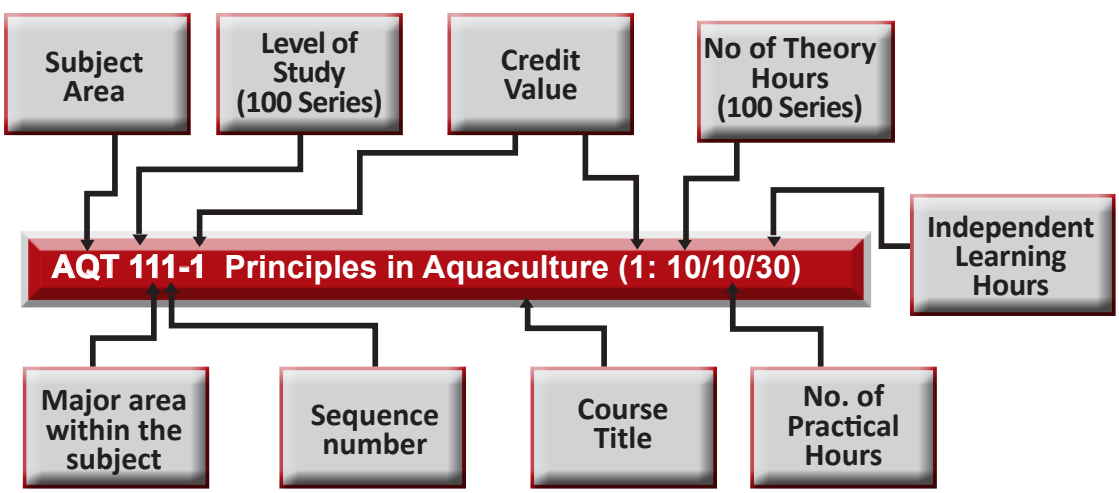
Subject Coding System

The academic programme is based on a modular course system consisting of several subject areas, each subject area has a unique three letter code as indicated below followed by 3 digits and the credit value; the latter is given after a hyphen.

BGE	**Broad General Education**
ESD	**Essential Skills Development**
AQT	**Aquatic Resources Technology Degree Programme**
ANS	**Animal Science Degree Programme**
EAG	**Export Agriculture Degree Programme**
PLT	**Palm & Latex Technology and Value Addition Degree Programme**
TEA	**Tea Technology and Value Addition Degree Programme**

1st Digit	Level of study/Academic year/ Level 1(100), 2(200), 3(300), 4(400)
2st Digit	Major area within the subject
3rd Digit	Sequence number
4th Digit	Credit value

Credit value is indicated after the course code separated by a hyphen.



BGE

BGE course units are offered in the first two years of each study programme. They have been designed to provide students with complementary knowledge that is needed for becoming successful careers in addition to the knowledge gained through programme-specific course units. The BGE course units are compulsory for all the degree programmes offered by the Faculty.

Broad General Education Subjects offered in each semester

YEAR: 1 SEMESTER: 1

Ethics and Law Basics BGE 121-2 (C: 30/00/70)

Introduction to Ethics, Ethics in religious context, Ethics in social context, Ethics in global context, Introduction to Laws of Sri Lanka, Constitutional law, Constitutional developments, Sovereignty/franchise/election, Fundamental rights, Administrative law: judicial control rights, Law of delict/tort, Law of contracts, Dispute resolution mechanisms, Environmental Industrial law

YEAR: 2 SEMESTER: 1

Aesthetic Studies BGE 211-2 (C: 20/20/60)

An introduction to aesthetic Studies, An introduction to philosophy of art and aesthetics, Art and society documentary: Aesthetics & ethics, Aesthetics of documentary making, Film screening: Aesthetic of art house theatre, Film aesthetics: The beauty of motion picture, New media: Good, bad & ugly; Aesthetic of new media landscape, Poetry: Reading in between text & creative writing, Music: Reading music & visuals, Painting: Time based work shop: Drawing life, Digital photography; Time based arts workshop: Third eye, Drama for life : Group presentations

YEAR: 2 SEMESTER: 2

History BGE 213-1 (C: 15/00/35)

Introduction to History, The background of Sri Lankan history, Ancient Agricultural methods (Slash - and -bum, Wet - rice cultivation, Mixed home gardens and monocarp cultivation, Cattle Husbandry and Fisheries, Traditional Kern Practices, Development of Plantation Industry, Development of Scientific concepts, Technological Development and Manufacturing Industries, Irrigation Development and its Technology, The Political Economy in ancient Sri Lanka, Crisis of the Sixteen Century, Trade and Agriculture under the Portuguese and Dutch, Economic and Social Changes in early 19lh Century, Constitutional Development and Economic Changes, Economic and Social Changes in early 20th Century.

Geography BGE 214-1(C: 10/10/30)

Definition of Geography, heritage and subdivisions, The basic concepts in Geography, Relationship of Geography with other disciplines; Interdisciplinary

nature in Geography, Geography and society: how Geography contribute to resolving societal problems, Geography and development: how Geography contributes to development, Geological and morphological foundations : landforms and the process involve, World Climatological foundations, Natural resources and their distribution: causes and consequences Major environmental issues: global and national, Environmental conservation, Population distribution and its implications (National and global) of location of human activities, State as the main creator of Geography, Globalization and its impact, Geospatial technologies and basics

ESD

ESD course units provide the students with knowledge and skills that should be possessed by a graduate in order to effectively build up his/her professional career. ESD course units include most of the aspects expected by the employers in a graduate and they are supplementary to the programme-specific course units. ESD course units are compulsory for all the degree programmes offered by the Faculty.

Essential Skills Development related Subjects offered in each semester

YEAR: 1 SEMESTER: 1

Information Technology ESD 103-2 (C: 15/30/55)

Introduction to information : What is information, Information sharing methods, Technology as a tool to produce and share information, Introduction to Computer: what is a computer, Parts of a computer, input/output devices, Eras in computer development, Types of computers, Hardware basics: Electricity and PC, Storage devices, File Systems basics, Microprocessors, Motherboards, Introduction to Operating Systems: What is an Operating System, Importance of an Operating System, Commonly used operating Systems, Application and Utility Software- Main types of application software, word processing software, spread sheet applications, Multimedia Presentations, Simple databases and their applications, Network basics : What is a network, Types of networks, Network devices, Network structures, Components of a network, cables used in networking, Broadband and baseband transmission, MAC and IP addresses, Internet and Intranet

English Language ESD 121-1(C: 10 /10/30)

Introduction, Parts of Speech, Reading & Writing Notices, Asking Simple Questions, Responding to Questions, Using Social Media, More on Social Media, Reading & Writing a Simple Email, Clause Elements, Following Simple Instructions, Giving Instructions, Using Glossaries and Dictionaries, Talking about a Simple Topic, Reading for Pleasure, Writing Short Passages & Essays

Sinhala (Level 01) ESD 151-1 (CN: 10 /10/30)

Reading: Identify the Sinhala alphabet including Vowels and consonants. Read simple text in Sinhala, and understand meaning. Identify main ideas of a given primary reading context, Writing: understand vocabulary and use basic tenses to convey meaning. Nouns, pronouns, conjunctions, punctuation, plural forms, guided writing, Listening: understand general conversations of day to day life, Main ideas of News reading. Handling communication in general, Speaking: provide appropriate answers to general conversations, Conducting introductory speeches, Provide appropriate responses to ordinary questions. Express opinions on familiar topics with a reasonable degree of accuracy

Tamil (Level 01) ESD 161-1 (CN: 10 /10/30)

Speaking: Make and respond to basic statements related to personal information, ask questions in order to find out about a limited range of personal information and day to day communication, use words and phrases to describe people and objects, express basic likes and dislikes, Listening: Understand a limited range of short, basic, supported classroom Instructions, questions which ask for personal information and recognize the sounds of letters and pronunciation of words, phrases, Writing: Write Tamil letters, familiar words to identify people, places and spell some familiar high-frequency words accurately during guided writing activities, Reading: Recognize, identify, sound and name the letters of the alphabet and pronounce familiar words and sentences. Understand the meaning of very simple familiar phrases or sentences on familiar, general and curricular topics by rereading them

YEAR: 1 SEMESTER: 2

Communication Skills I ESD 111-1 (C: 10/10/30)

Introduction to Communication Skills, Process of communication, Communication Barriers, Nonverbal and Verbal Communication, Interpersonal Communication, Public Speaking, Effective Listening Skills, Communication Barriers

Communicative English ESD 122-1 (C: 10/10/30)

Talking about One's experience, Giving and responding to opinions, Using adjectives, Note taking, Using noun phrases and verb phrases, Listening and responding to the telephone, Making inquiries & responding queries, Using articles, Conjunctions & Prepositions, Using Adverbs & transferring notes from a written text, Reading graphs & tables/ Presenting graphs & tables, Reading to identify supporting evidence, Writing simple essays

Quantitative Reasoning ESD 141-2 (C: 15/30/55)

What is Quantitative Reasoning?(with applications) , Different type of number and variables, Different type of number and variables, Introduction of different data collection methods, Introduction of different data collection methods, Basic numeracy and measurement, Qualitative data analysis and visualization-Tables, diagrams and graphical representation, Quantitative data analysis and visualization-Histogram, frequency polygon, frequency curve, cumulative frequency curve,-Dot plots, Box plots, Z-curves, Lauranz curve, Summary measures-Describe properties of a good measure, Measure of central tendency (Mean, median, mode, quartiles, percentiles), Measure of dispersion (Range, variance, standard deviation, standard interquartile range, box plot, coefficient of variation), Measure of skewness and Kurtosis, Measure of association Contingency coefficients, Rank correlation, Scatter plots and correlation analysis, Introduction to Simple Linear Regression, Analysis of a given data set and report writing

Sinhala (Level 02) ESD 152-1 (CN: 10/10/30)

Reading: Identify main ideas of a given intermediate reading context. Understand the formal and informal expressions of daily readings. Ability to read variety of contextual readings, Writing: handle all basic tenses, identify the first person, second person and third person categorical and grammatical writing. Use of adverbs, adjectives, feminine, and articles, Listening: understanding academic conversations. Identifying main concepts of academic use of language, Speaking: Pronunciation. Handling presentations on given topics, Express of personal views,Managing language in formal contexts (debates), Reading: Identify main ideas of a given intermediate reading context. Understand the formal and informal expressions of daily readings. Ability to read variety of contextual readings, Writing: handle all basic tenses, identify the first person, second person and third person categorical and grammatical writing. Use of adverbs, adjectives, feminine, and articles, Listening: understanding academic conversations. Identifying main concepts of academic use of language, Speaking: Pronunciation. Handling presentations on given topics, Express of personal views. Managing language in formal contexts (debates)

Tamil (Level 02) ESD 162-1 (CN: 10/10/30)

Reading: Read and follow, with support, familiar instructions for classroom activities, begin to read, with support, very short simple texts with confidence and enjoyment, understand the meaning of very short, simple texts, Writing: Write, with support, a sequence of short sentences in a paragraph. Use simple present, past and future forms to describe actions and narrate simple events. Use adjectives, adverbs and conjunctions, speaking: Describe basic present and past actions on a limited range of general and curricular topics. Communicate meaning clearly using phrases and simple sentences and link comments to what others say at sentence, listening: Understand and recognize some specific information and detail of short, supported talk on an increasing range of general topics

YEAR: 2 SEMESTER: 1

Effective English Usage ESD 221-1 (C: 10/10/30)

Taking Notes from Text and Reference Books, Public Speaking, Understanding Clauses, Forming Complex Sentences, Using Discourse Markers, Memorable Speeches, Giving Oral Presentations, Giving Impromptu Speeches, Identify between General and Technical Meaning, Listening to a Lecture, Agreeing or Disagreeing on a Particular Topic, Directly and Indirectly Stated Information, Taking Notes from Text and Reference Books, Public Speaking, Understanding Clauses

YEAR: 2 SEMESTER: 2

Explorative English ESD 222-1 (C: 10/10/30)

Taking notes from an academic lecture, Sequencing in listening and reading, Listening and identifying differences in accent, Preparing an academic presentation, Understanding academic words and expressions, Summarizing a lecture, Summarizing an essay, Identify narrative and descriptive essays, Understand cause and effect in writing , Understand, compare and contrast in essays, Paragraph writing, Using references in writing, Academic essay writing

YEAR: 3 SEMESTER: 1

Communication Skills II ESD 311-1(C: 15/ 00/35)

Goals for more effective Presentations, Create an open environment for communication, Skill to communicate clearly, Business Presentations, Academic Presentations, presentations styles and needs, Interviews, Public Speaking

DEGREE PROGRAMMES OFFERED BY THE FACULTY

BACHELOR OF

ANIMAL SCIENCE HONOURS (BAScHons)

DEGREE PROGRAMME

BACHELOR OF ANIMAL SCIENCE HONOURS (BAScHons) DEGREE PROGRAMME

Introduction

Bachelor of Animal Science (BAScHons) degree programme is one of the leading programme commenced with the aim of producing graduates with sound knowledge and skills on animal production and value addition with adequate know-how on health & hygiene, welfare, and quality & safety required to enhance the productivity, profitability and sustainability of animal production. The subject areas of the degree programme focus on production, management and value addition. The curriculum has been prepared by consulting scientists, academics, government and non-government officers engaged in livestock sector, research and industries. Undergraduates who follow the BASc degree programme will gain a detailed knowledge, skills and training as covering both theoretical and practical aspects of the animal production and food technology.

After successful completion of the degree a graduate should be able to;

- employ solid theoretical knowledge on farm animal and aquatic resources management and value addition to farm animal and aquatic resources.
- propose constructive solutions to problems associated with livestock, poultry and food sectors through logical, analytical and critical thinking.
- perform effectively as an entry-level professional using sound practical skills required in livestock & poultry farms and food & feed processing industries.
- formulate plans and implement better management practices and ensure sustainability and safety in livestock, poultry and food sectors.
- evaluate the quality of animal- and plant-based food products.
- assess the quality assurance systems of a given animal- and plant-based food processing factory.
- communicate information, ideas, issues, and solutions effectively and confidently in oral, written and electronic formats to a wide range of audiences in mother tongue and English.
- demonstrate awareness on the current developments in livestock, poultry and food sectors in oral and written formats.

- perform effectively in a given working environment and in community with minimum conflicts.
- demonstrate professionalism, leadership and interpersonal skills in a given working environment and in community.
- take initiative and ability to inculcate entrepreneurship.
- accomplish data processing & management needs for effective functioning of the working environment using sound numerical & ICT skills.
- adapt to changing working environments.
- identify appropriate pathways for future career and establish personal and professional goals through appropriate strategies.
- acquire new competencies through engage in lifelong learning and undertake major responsibilities with confidence to progress in a chosen career.
- take part in and promote social responsibilities.

COURSE OUTLINE OF BACHELOR OF ANIMAL SCIENCE HONOURS (BAScHons) DEGREE PROGRAMME

YEAR: 1 SEMESTER: 1

No	Course Code	Course Title	Units	C/O/CN*
1	ESD 121-1	English Language	1	C
2	ESD 103-2	Information Technology	2	C
3	BGE 121-2	Ethics and Law Basics	2	C
4	ANS 101-2	Introduction to Animal Production	2	C
5	ANS 102-3	Farm Animal Anatomy and Physiology	3	C
6	ANS 103-1	General Microbiology	1	C
7	ANS 151-2	Principles of Genetics and Breeding	2	C
8	ANS 161-1	Laboratory Techniques	1	C
9	ANS 104-1	Mathematics for Biological Sciences	1	CN
10	ESD 151-1	Sinhala (Level 01)	1	CN
	ESD 161-1	Tamil (Level 01)	1	CN
11	ANS 105-1	Agricultural Meteorology and Climatology	1	CN

YEAR: 1 SEMESTER: 2

No	Course Code	Course Title	Units	C/O/CN*
1	ESD 141-2	Quantitative Reasoning	2	C
2	ESD 122-1	Communicative English	1	C
3	ESD 111-1	Communication Skills I	1	C
4	ANS 106-2	Introduction to Soil Science	2	C
5	ANS 131-2	Animal Nutrition	2	C
6	ANS 141-2	Principles of Food Science	2	C
7	AQT 191-1	Introduction to Living Aquatic Resources and Management	1	C
8	EAG 161-2	Biochemistry	2	C
9	EAG 131-3	Principles of Agricultural Economics	3	C
10	ESD 152-1	Sinhala (Level 02)	1	CN
	ESD 162-1	Tamil (Level 02)	1	CN
11	ANS 106-1	Basics in Physics	1	CN

YEAR: 2 SEMESTER: 1

No	Course Code	Course Title	Units	C/O/CN*
1	ESD 221-1	Effective English Usage	1	C
2	BGE 211-2	Aesthetic Studies	2	C
3	ANS 211-3	Non-Ruminant Management	3	C
4	ANS 221-2	Farm Animal Hygiene	2	C
5	ANS 231-2	Forage Production and Conservation	2	C
6	ANS 232-1	Monogastric Nutrition	1	C
7	ANS 241-2	Principles of Food Preservation and Processing	2	C
8	AQT 291-2	Ornamental Fish Breeding and Production	2	C
9	ANS 281-2	Farm Machinery and Mechanization	2	C
10	ANS 201-2	Introduction to Crop Science	2	CN

YEAR: 2 SEMESTER: 2

No	Course Code	Course Title	Units	C/O/CN*
1	ESD 222-1	Explorative English	1	C
2	BGE 213-1	History	1	C
3	BGE 214-1	Geography	1	C
4	ANS 212-3	Ruminant Management	3	C
5	ANS 213-2	Reproduction and Lactation in Farm Animals	2	C
6	ANS 233-2	Ruminant Nutrition	2	C
7	ANS 242-2	Food Chemistry	2	C
8	EAG 221-2	Agribusiness Management and Entrepreneurship	2	C
9	ANS 261-2	Farm Practice	2	C

YEAR: 3 SEMESTER: 1

No	Course Code	Course Title	Units	C/O/CN*
1	ESD 311-1	Communication Skills II	1	C
2	ANS 311-2	Livestock Farming Systems	2	C
3	ANS 321-3	Farm Animal Diseases	3	C
4	ANS 331-2	Animal Feed Resources and Feed Processing	2	C
5	ANS 341-2	Food Microbiology	2	C
6	ANS 371-2	Experimental Designs	2	C
7	ANS 381-2	Farm Designing and Construction	2	C
8	EMG 383-1	Marketing Strategies	1	C
9	EAG 324-2	Agricultural Technology Dissemination	2	C
10	ANS 312-2	Micro-livestockProduction	2	O
11	ANS 301-1	Wildlife and Eco Tourism	1	O
12	EAG 321-2	Agricultural Entrepreneurship	2	O
13	ANS 342-2	Agricultural Food Processing	2	O

YEAR: 3 SEMESTER: 2

No	Course Code	Course Title	Units	C/O/CN*
1	AQT 391-2	Invertebrate Breeding and Farming	2	C
2	ANS 313-1	Waste Handling and Utilization	1	C
3	ANS 343-3	Dairy Product Technology	3	C
4	ANS 344-3	Meat and Egg Product Technology	3	C
5	ANS 345-2	Aquatic Product Technology	2	C
6	ANS 346-1	Food Packaging Technology	1	C
7	ANS 351-2	Selection and Animal Breeding	2	C
8	ANS 347-2	Food Process Engineering	2	CN
9	ANS 361-1	Intellectual Property Rights and Commercialization	1	CN
10	EAG 355-2	Organic Agriculture	2	O
11	ANS 314-1	Farm Animal Welfare	1	O
12	ANS 302-1	Lab Animal Science	1	O
13	ANS 315-2	Farm Management and Budgeting	2	O
14	ANS 348-2	Postharvest Technology	2	O

YEAR: 4 SEMESTER: 1

No	Course Code	Course Title	Units	C/O/CN*
1	ANS 421-1	Public Health	1	C
2	ANS 441-2	Food Analysis	2	C
3	ANS 442-2	Food Safety and Quality Management	2	C
4	ANS 443-2	Animal By-products Technology	2	C
5	ANS 451-3	Animal Biotechnology	3	C
6	ANS 461-2	Scientific Writing and Research Methodology	2	C
7	ANS 471-1	Nonparametric statistics	1	C
8	EMG 474-2	Human Resources Management	2	C
9	ANS 401-1	Nanotechnology in Animal Science	1	O
10	ANS 444-1	Sensory Evaluation	1	O
11	ANS 445-1	New Product Development	1	O
12	ANS 462-1	Project Cycle Management	1	O
13	ANS 463-1	Business Communication	1	O
14	AQT 491-2	Advanced Techniques in Aquatic Farming Systems	2	O
15	EAG 431-2	Import Export Procedures	2	O

YEAR: 4 SEMESTER: 2

No	Course Code	Course Title	Units	C/O/CN*
1	ANS 464-6	Research	6	C
2	ANS 465-2	Industrial Training	2	CN

*C-Compulsory courses, O-Optional courses, CN-Compulsory-Non Credit courses

YEAR: 1 SEMESTER: 1

Refer BGE and ESD subjects offered in this semester under section "Course Structure" (Page No: 47-51).

Introduction to Animal Production ANS 101-2 (C: 22 /15 /63)

Domestication of farm animals, Historical developments in animal husbandry, Utilization of domestic animals, Importance of animal production, Present status of animal industry in Sri Lanka, Important domestic farm animal species and their breeds, Local and global consumption of animal products, Potentials, constraints and problems associated with animal industry, Main systems of animal rearing, Introduction to aquaculture, Basic external morphology of typical bony fishes, General dissection of tilapia, Aquaculture Systems and Practice, Management of brood stocks, Breeding techniques of Tilapia and exotic major carp species, Water quality management, feeding management, financial management and disease management in farms, Harvesting and marketing

Farm Animal Anatomy and Physiology ANS 102-3 (C: 40 /10 /100)

Introduction, Structure and function of animal cells, Animal tissues - organization of body tissues, Structure and function of Monogastric, ruminant and hind gut fermenters digestive systems, Structure and function of female and male mammalian reproductive system, endocrine system and lactating organs in farm animals, Avian digestive and reproductive anatomy and egg formation, General anatomy of bony fish

General Microbiology ANS 103-1 (C: 13 /04 /33)

Introduction, Types of microorganisms and microbial classification, Introduction to Bacteria (structure, cell wall, gram + ve and gram – ve bacteria), Introduction to Fungi (yeast and mold), Introduction to Protozoa, Helminths, Viruses & Prions, Microbial Metabolism, Factors affecting growth of Microorganisms ; growth curve, Reproduction of bacteria & virus, Microbial inactivation

Principles of Genetics and Breeding ANS 151-2 (C: 22 /18/60)

Introduction to Mendelian genetics and Deviations, Linkage and recombination, Cytogenetic, Molecular genetics, Prokaryotic and Eukaryotic Genomes, Polygenic

inheritance, Population genetics and application of Hardy-Weinberg law, Principles in Animal breeding

Laboratory Techniques ANS 161-1 (C: 00 /30/20)

Introduction to laboratory safety, Identification and handling of glassware & equipment, Preparation stock solutions and buffers, Preparation of Standard curve and spiking, Classical Methods in Food Analysis, Proximate composition analysis, Determination of water activity of animal/ food product

Mathematics for Biological Sciences ANS 104-1 (CN: 00/30/20)

Number system, Algebraic expressions and inequalities, Equations, Functions and their graphs, Exponential and logarithmic functions, Rational functions, Partial fractions, Matrices, Limits of functions, Differentiation , Integrations and applications

Agricultural Meteorology and Climatology ANS 105-1 (CN: 15 /00/35)

Introduction to the course, water parameters and their impacts on Animal Production, Recording of meteorological data, Climate classification & Climate of Sri Lanka, Agro Ecological regions of Sri Lanka, Global warming, Climate change, Climatic hazards

YEAR: 1 SEMESTER: 2

Refer BGE and ESD subjects offered in this semester under section "Course Structure" (Page No: 47-51).

Introduction to Soil Science ANS 106-2 (C: 22/16/62)

Introduction to soil genesis and soil profile formation, Basic soil physical properties, Basic soil chemical properties, Introduction to soil biological properties, Soils in Sri Lanka, Soil conditions and pasture & fodder cultivation, Essential plant nutrients and their availability in soil, Soil fertility management

Animal Nutrition ANS 131-2 (C: 30/00/70)

Introduction, Major nutrients required for farm animals, Digestion, absorption and metabolism of nutrients in farm animals, Feed additives used in animal feed industry, Anti- nutritional compounds present in feedstuffs, Feed sampling and sample preparation for proximate analysis

Principles of Food Science ANS 141-2 (C: 30/00/70)

Introduction to Food Industry, Unit operations in food processing, Fats, oils and related products, Fermentation and fermented products, Cereal grains, legumes and oil seeds, Beverages, Milk and milk products, Food systems, Food Act

Introduction to Living Aquatic Resources and Management ANS 191-1 (C: 10/10/30)

Introduction: definitions and classification of resources; identification of living resources; Importance and potential, Exploitation: methods and current status, Management: sustainable utilization, assessment of stocks, Issues and conflict management, Regulations

Biochemistry EAG 161-2 (C: 25/10/65)

Basic Concepts, Chemistry and functions of carbohydrates, proteins, lipids, nucleic acids, vitamins, Enzymology, Metabolism of major biomolecules

Principles of Agricultural Economics EAG 131-3 (C: 30/30/90)

Introduction to Agricultural Economics, Consumer behavior, Demand and supply, Production and costs, Cost of production, Perfect competition, Monopoly, Monopolistic competition, Oligopoly, Introduction to Welfare Economics, Introduction to Fisheries Economics, Introduction to Environmental Economics, Introduction to Macroeconomics.

Basics in Physics ANS 107-1 (CN: 15/00/35)

Vector & Scalar Quantities, Equations of Motion, Newton's Laws of Motion, Basic principles of statics, Static equilibrium, Compression & Tensile Forces, Free Body Diagram, Force and Resolution of a force, Loading systems, Basic Concepts in Trigonometry, Introduction to shear force and bending moment of beams, Basics to forces in pin-jointed frames (Trusses), Mechanics of materials, Factor of safety

YEAR: 2 SEMESTER: 1

Refer BGE and ESD subjects offered in this semester under section "Course Structure" (Page No: 47-51).

Non-Ruminant Management ANS 211-3 (C: 37/24/89)

Poultry Management-Introduction: World Poultry Industry & Prospects- Global and Local, Breeds and crosses of Chicken, Chicken breeding, Incubation & Hatchery Management, Poultry Brooding, Management of Parent Stock, Growers and Layers, Management of Broilers, Housing types &Equipment, Swine Management-Introduction, Housing for swine, Feeding for different stages of swine, Management of the piglings and weaning management, Management of the sow, Management of the boar, Farm Records

Forage Production and Conservation ANS 231-2 (C: 25/12/63)

Introduction, Potentials of pasture production in different zones in Sri Lanka, Establishment pastures, fodders and legumes, Propagation methods; Land preparation; spacing, Pasture management, Soil fertility and fertilization of forages, Grazing Management, Conservation techniques for forages, Herbage quality, Measurement of pasture production, Limitations of feeding pastures and fodders to livestock, Machinery used for forage production and conservation

Farm Animal Hygiene ANS 221-2 (C: 26/10/64)

Introduction, disease and disease causation triad, Clinical signs identification of sick animals, Common farm animal pathogens bacteria, viruses, protozoa, fungi, mycoplasma, rickettsia and prions, Common helminth parasites and ectoparasites of livestock, Common Blood parasites and vector-borne diseases of livestock, Safe use of antibiotics in livestock industry, Principles of vaccination and immune response of host against pathogens, Emerging diseases & zoonotic diseases, Bio-security

Monogastric Nutrition ANS 232-1 (C: 14/02/34)

Introduction (nutrition of swine and poultry, Energy partitioning (Estimation of GE, DE, ME, NE for a given situation), Protein evaluation (CP, Digestible CP, Estimation of protein quality (NPR, PER, BV)), Nutrient requirement and feeding standards (swine/poultry), Feeding practices (Poultry/ swine), Nutritional experimentation (Digestibility, metabolism trials, nutrient balance experiments and animal calorimetry)

Principles of Food Preservation and Processing ANS 241-2 (C: 26/08/66)

Principles behind food preservation and hurdle technology, Heat Treatment, Temperature reduction, Drying and dehydration, Irradiation, Chemical preservation,

Preservation by microwave, Cleaning and sanitation, Membrane processing, Extrusion, Bio preservation (Bio polymers), Novel Methods of food preservation

Farm Machinery and Mechanization ANS 281-2 (C: 28/04/68)

Source and Type of farm power, Principles of basic functions of Internal combustion engines, fuel systems and air cleaners, Cooling systems, Lubrication systems, Power transmission and ignition systems, Operation and maintenance of two wheel tractor and four wheel tractor, Hydraulic systems and water pumps, Combine Harvesters, Pesticide Applicators, Power requirements of the tillage tools, Performance of the Tillage Tools &maintenance and operation of farm machinery for efficient use, Basics concepts of sprinkler systems, Equipment's used in Livestock Industry; milking machines, grass choppers, conveyors, Chilling units, Homogenizers, Cream separator

Ornamental Fish Breeding and Production AQT 291-2 (C: 22/20/58)

Introduction to Ornamental fish industry, potential for expansion of industry and technology, construction of ponds and aquariums, Construction of fish tanks, varieties characteristic and biology of ornamental species, Breeding techniques and culture methods-Live bearers, Egg bearers, Marine ornamental, nutritional requirements, feeds and feeding (Live and artificial), Water quality and disease management in aquaria and mud ponds- Water quality, Disease management, Financial management, Value addition methods to improve quality of ornamental fish

Introduction to Crop Science ANS 201-2 (CN: 25/15/60)

Present status and future potentials of agriculture in Sri Lanka, Introduction to agricultural crop production (Plant propagation techniques, nursery management and crop establishment), Major plantation crops, Rice production, Horticultural crop production, Crop protection, New techniques used in agriculture (Protected Agriculture, Micro irrigation)

YEAR: 2 SEMESTER: 2

Refer BGE and ESD subjects offered in this semester under section "Course Structure" (Page No: 47-51).

Ruminant Management ANS 212-3 (C: 35/32/87)

Introduction, Present status of cattle, buffalo, goat & sheep management in Sri Lanka, Management of cattle at different stages, Hand milking & Machine milking techniques, Bull management, Cattle Body Condition Scoring (BCS), Castration & Hoof trimming,Herd composition, Feeds and feeding for ruminants, Basic principles of Ration formulation & Ration formulation, Housing for cattle, Age determination & Record keeping, General management practices for Buffalo, Goat and Sheep, Wool and hair production from goat & sheep, Goat diseases

Reproduction and Lactation in Farm Animals ANS 213-2 (C: 28/05/67)

Introduction, Gonadogenesis, Female reproduction, male reproduction and, Female & male reproductive behavior in farm animals, Fertilization, pregnancy and parturition, Common reproductive complications in female farm animals, Reproductive manipulation of female and male farm animals, Evaluation of reproductive performance, Physiology of lactation, Avian reproduction

Ruminant Nutrition ANS 233-2 (C: 25/10/65)

Introduction, Microbiology & biochemistry of rumen (rumen manipulation, Direct-fed microbes), Nutrient digestion and the environment (Methanogenesis& P emission), Nutrient requirements of ruminants, Utilization of roughages andAgro-industrial by products in ruminant feeding, Importance and methods of protein by-pass in ruminant feeding, Nutrition of cattle/ sheep /goat at different physiological stages, Feeding ruminants, Experimental techniques in ruminant nutrition

Food Chemistry ANS 242-2 (C: 30/00/70)

Introduction to Food chemistry, Water, water activity and role of ice in stability of food, Role of carbohydrates in quality of food, Role of lipids in quality of food, Role of proteins in quality of food, Non enzymatic browning, Enzymatic browning, Stabilizers used in Food Industry, Food additives, Vitamins and Minerals, Colour pigments, Flavours and flavour compounds, Enzymes used in Food Industry

Agribusiness Management and Entrepreneurship EAG 221-2 (C: 27/06/67)

Introduction to Agribusiness Management, Functions of management , Agribusiness planning, Strategic business planning, Marketing planning, Decision making

making areas in agribusiness, Forms of business organizations, Record keeping and inventory management, Financial planning process, introduction to basic accounting statements, Financial analysis , Investment Appraisal, Agriculture risk management, Farm site selection, Introduction to Entrepreneurship.

Farm Practice ANS 261-2 (C: 00/90/10)

Daily routine management practices in commercial cattle, poultry (broiler/ layer) and swine farms including feeding, cleaning pens, housing, record keeping, disease management and any special management practices; Farm Machinery Practice (FMTC- Puliyankulama)-Practice course on farm machinery used in livestock farm

YEAR: 3 SEMESTER: 1

Refer BGE and ESD subjects offered in this semester under section "Course Structure" (Page No: 47-51).

Farm Animal Diseases ANS 321-2 (C: 38/16/96)

Economic importance of animal diseases, Common infectious diseases metabolic disorders and non-infectious diseases of Ruminants, their prevention and control, National vaccination program for livestock species

Animal Feed Resources and Feed Processing ANS 331-2 (C: 23/16 /61)

Introduction (Global and local feed industry- Present status, constraints and future trends), Feed stuffs & supplements, their classification, nutritive value & limitations, Feed formulation for non-ruminants, Feed processing & manufacturing, Designing a feed plant, Feed storage & spoilage

Livestock Farming Systems ANS 311-2 (C: 25/10/65)

Introduction to Farming Systems, Crop-Livestock based production systems and their components, Introduction to Integration, Models to describe, Modes of agriculture, Pasture based livestock systems and pastoralism, Livestock-livestock integration systems, Integration of livestock with field crops, plantation crops, minor export crops and other cash crops, Farming system research and extension, Hard system and soft system methodologies

Farm Designing and Construction ANS 381-2 (C: 27/06/67)

Location and General Arrangement (Site Planning), Types of Agricultural Buildings and their Parts, Material types and selection for construction, Soil investigation, Basic concepts in Ground Improvement Methods, Construction of farm building, Principles of Foundation Design, Housing climate, Livestock housing, Fundamentals of heating and cooling of livestock housing, External facilities, Water supply and sanitation

Food Microbiology ANS 342-2 (C: 22/16/62)

Introduction to food microbiology, Types of Microorganisms, Sources of Microorganisms, Intrinsic and extrinsic parameters effecting microbial growth, Fermentation and fermented products, Food borne diseases, Microbial food spoilage, Detection and enumeration of microorganisms, Bacteriophages

Experimental Design ANS 371-2 (C: 15/30/55)

Probability, Random variables and probability distributions (Normal and Binominal), Introduction to inference, Confidence intervals for population mean and proportions when variance varied , Type of errors and hypothesis testing , One and two sample hypothesis testing for population mean and proportion (different situations in variance), Correlation Analysis and Regression analysis and application, Experimental designs (Complete randomize design, Randomized complete block design, Latin square design, Fractional experiments), Mean separation methods and data transformation methods, ANCOVA

Marketing Strategies EMG 381-1 (C: 15/00/35)

Introduction to marketing, Marketing process, Marketing environment, Organizations and marketing strategies, Marketing mix, and mix strategies, Customer driven marketing strategy, Segmentation, Targeting and positioning the market, Customer Satisfaction, Value and Retention, Customer Relationship Management, Introduction to International, Meetings

Agricultural Technology Dissemination EAG 324-2 (C: 20/30/50)

Introduction to agricultural Extension, Definition, Objectives, Human Behavior, Socio Economic aspects of farming, Principles of Education, Adult Education, Principles of Learning, Effective Communication, Motivation for Extension, Leadership in Extension, Principles of Effective Extension Program, Extension Teaching Methodologies, Adoption & Diffusion of Technologies, Role of Extension Agent, Planning & Evaluation of Extension Program, Challenges for Agriculture Extension.

Agricultural Food Processing ANS 343-2 (O: 30/06/64)

Introduction to plant based agricultural food produce, Cereals, Pulses, Milling products, Bakery products, Fruit based products, Vegetable based products , Minimal processing of fruits and vegetables, Coconut products, Alcoholic Beverages, Tuber crops & related value added products, Spices (Essential oils)

Microlivestock Production ANS 312-2 (O: 25/15/60)

Introduction, Management of rabbits: breed, breeding, housing & management of kids, growers, does and buck, record keeping, Management of miscellaneous poultry species: breed, breeding, housing & management, record keeping, Management of other potential micro-livestock species, Common diseases associated with rabbits, duck

Wildlife and Eco Tourism 301-1 (O: 12/06/32)

Introduction, wildlife and ecotourism, special interest tourism, Ecological impacts of wildlife and ecotourism, Wildlife and ecotourism principles and practices, Wildlife and ecotourism in Sri Lankan context, Potentials and barriers for wildlife tourism and ecotourism , Wildlife and ecotourism policies, Stakeholder engagement, Managing potential impacts , Conservation of natural resources , Emerging issues and trends, Sustainable development and management, wildlife and ecotourism business operations

Agricultural Entrepreneurship EAG 321-2 (O: 26/08 /66)

Introduction and historical perspective, Entrepreneurial schools of thoughts and myths, Entrepreneurship in individual perspective, Entrepreneurship in organizational perspective, Innovation and creativity in entrepreneurship, Ethics and CSR in entrepreneurship, Development of an entrepreneurial business plan, Assessment of entrepreneurial ventures, Women entrepreneurship, Managing and succession of entrepreneurial ventures, Role of entrepreneurship in Agriculture

YEAR: 3 SEMESTER: 2

Invertebrate Breeding and Farming AQT 391-2 (C: 26/11/63)

Introduction to invertebrate farming in the world, Biology, hatchery technology and farming of shrimps, lobsters, mollusks, freshwater prawns, crabs, sea cucumbers, Management of culture environment, Water quality management, Identification and prevention of diseases, Feeds and feeding

Dairy Product Technology ANS 343-3 (C: 35/23/92)

Properties of Milk, Composition of milk, Milk protein, Lactose, Milk lipids, Milk enzyme, Vitamins & Minerals, Heat induced changes, Milk value chain in Sri Lanka, Collection and Reception of Milk, Preliminary treatment for raw milk, Processing of Fluid Milk, Manufacturing of cultured dairy products, Production of cheese, Frozen dairy products, Concentrated milk, Milk powder, Butter and Dairy Spreads, Whey products, Casein & Casenates, Emerging technologies in dairy industry

Selection and Animal Breeding ANS 351-2 (C: 26/08/66)

Introduction, Qualitative and quantitative traits as factors affecting on artificial selection, Animal selection methods, Inheritance of quantitative characters, Calculate quantitative genetic parameters and their measurements, Basics steps in animal breeding programme; define breeding system, production goal, information, selection criteria, dissemination, evaluation, Practical breeding plans

Meat and Egg Product Technology ANS 344-3 (C: 37/22/91)

Meat Product Technology : Introduction to meat industry, Ante mortem handling and welfare, Slaughtering of farm animals, Carcass quality traits, Structure and function of muscle and associated tissues, Chemical composition of meat, Post mortem muscle chemistry, Meat quality traits (appearance quality traits/eating quality traits/reliance quality traits), Processing of meat and meat products, Deterioration of meat and meat products, Residues in meat and meat products, Nutritive value of meat, Non-thermal preservation methods used for meat (reorganize and present)
Egg Product Technology :Egg production in the world and Sri Lanka, Structure of an egg, External and Internal quality of eggs, Egg Chemistry, Functional properties of eggs, Microbiology of egg and egg products, Value added products from eggs

Aquatic Product Technology ANS 345-2 (C: 25/12/63)

Introduction, Structure of fish muscle, Chemical composition of fish and other aquatic products, Post-harvest handling, Post-mortem changes in fish, Preservation of fish, Microbiology of fish and fish poisoning, Novel developments in fish processing, Separation of proteins and lipids from fish, Processing and grading of shrimp, Value added products from aquatic plants and other aquatic species, Legislation aspects in aquatic products

Food Packaging Technology ANS 346-1 (C: 11 /10 /27)

Introduction to food packaging; functions of food packages, selection of food packages, Different packaging materials and their properties, Package designing ,

Aseptic packaging of food , Active packaging and intelligent packaging , Modified atmosphere packaging

Waste Handling and Utilization ANS 315-1 (C: 13/06/31)

Defining and classification of animal waste, Properties of farm waste, policies and regulations associate with the discharge of livestock waste, Collection and storage of livestock waste, Solid manure separation, Treatment of animal waste; Physical methods, Biological methods, Activated sludge system, RBC, Trickling filters, Constructed wetlands, Recycling of wastes, Land disposal of treated waste

IPR and Commercialization ANS 362-1 (CN: 15/00/35)

Introduction to IPR, copyrights and work protected by copyrights, How to apply for copyrights, rights of an author and transferring the rights, Industrial designs and wok protected by industrial design rights, How to apply for copyrights, rights of an owner renewals of registration and transferring the rights (THA), What is a patent, work protected by patent rights and rights of a patent holder, Application procedure for patents, international classification on patent and transferring and assigning rights, What is a trademark, admissibility of trademarks and rights of the designer, application procedure for trademarks and transferring and assigning the rights, Case study discussion- IPR related cases based on current business world, Commercialization process of innovation

Food Process Engineering ANS 348-2 (CN: 30/00/70)

Introduction to Food Engineering, Thermodynamics, Heat and Mass transfer, Fluid dynamics, Physical properties of food materials, Mixing & Homogenization, Centrifugation, Distillation, Extrusion, Thermal processing, Refrigeration and freezing, Physical separation processes, Evaporation and dehydration

Organic Agriculture EAG 356-1 (O: 10/12/18)

Status of organic agriculture, definition, principles, philosophy of organic agriculture and IFOAM regulations, Organic Farming Vs Conventional Farming, Waste Management in the Farm; Composting, Biogas Production and Green manuring, bio charcoal production, Liquid Organic fertilizers, Bio-fertilizer production, Biodynamic farming, Organic animal husbandry, Pest and Weed Management, Certification and Marketing of Organic Products, Quality Standards & Packaging Requirements, Future of Organic Farming

Farm Animal Welfare ANS 316-1 (O: 15/00/35)

Role of legislature in livestock management, Legislature governing manufacture and sale of animal feeds, Regulatory aspects of animal disease including quarantine, Farm animal behavior and stress, Farm animal welfare and enhancement of production, Animal conservation

Lab Animal Science ANS 317-1 (O: 12/06/32)

Introduction, Anatomy of laboratory animals, .Management of laboratory animal house, Nutrition and feeding, Environmental enrichment for laboratory animals, Laboratory animal nutrition, health management, diseases diagnosis and treatment, Alternatives for laboratory animals, Ethical guidelines for animal research, Zebrafish as an animal model

Postharvest Technology ANS 348-2 (O: 25/10/65)

Introduction to Postharvest Technology, Crop produce, Classification of fruits and vegetables, Factors affecting maturity and ripening, Biochemical changes during ripening, Storage of fruits and vegetables, Regulation of ripening, Maturity indices, Harvesting and harvesting systems, Packing house operations, Storage of fruits and vegetables, Storage disorders, Animal produce, Post-harvest handling of meat and fish, Biochemical changes during storage, Minimizing of postharvest losses

Farm Management and Budgeting ANS 313-2 (O: 26/12/62)

Farm planning, Linear programming, General budget terminology, Types of budgets, Budget development, Budgets, productivity, competition and structural changes, Gross-margin budget, break even analysis, Acquiring resources for management, Human resource management, Estimating machinery costs, Managing risk and uncertainty, Sources of risk and uncertainty, decision making under risk, tools for managing risk

YEAR: 4 SEMESTER: 1

Public Health ANS 421-1 (C: 13/05/32)

Introduction of Public Health, Abattoir: construction and development, cleaning and sanitation, Public health issues associated with meat products, Ante-mortem inspection of animals and post-mortem inspection of meat, Environmental protection, Control, prevention, and elimination of zoonosis, Occupational hazards and safety.

Animal Biotechnology ANS 451-3 (C: 40/10/100)

Gene expression, Molecular markers and data analysis, Gene transformation, Gene knockout principle, Population characterization, Animal cloning, Molecular aspects of common animal diseases, Recombinant vaccine production, Genetically modified organisms, Application of biotechnology in animal nutrition and feed technology

Food Analysis ANS 441-2 (C: 24/12/64)

Introduction to food analysis, Sampling techniques, Sample pretreatment and preparation for analysis, Extraction techniques in food analysis, Separation techniques, Introduction to chromatographic techniques, Column Chromatographic techniques, Classical and Instrumental analysis, Titrimetry, Spectrophotometry, Proximate analysis of food samples, Analysis of meat, dairy products, seafood and animal feed for nutrients, additives, adulterants and residues

Food Safety and Quality Management ANS 442-2 (C: 25/10/65)

Introduction, Cleaning and sanitation in processing factory , Personal hygiene, Factory layout design, GAP/ GMP, HACCP, Codex Alimentations Commission, ISO and SLS standards, Laboratory accreditation / Occupational Safety (OHSAS 18000), Total quality management and other novel concepts, Food Act

Animal By-products Technology ANS 443-2 (C: 25/10/65)

Introduction and History of Processing Animal By-Products, Edible Meat By-Products, Rendering, Hide and Skin By-Products, Glue and Gelatin, Edible Tissue from Bone, Nutritive Value of By-products, Medical and Pharmaceutical Uses of By-Products, Sausage Casings, Pet Food, Seafood By-Products, Poultry By-Products

Scientific Writing and Research Methodology ANS 461-2 (C: 25/10/65)

Introduction to scientific writing: types of scientific publications, Writing a proposal, Proposal format, Writing a dissertation, References, Research ethics, Publication and Presentation

Nonparametric Statistics ANS 462-1 (C: 00/30/20)

Dichotomous Data (Binomial Tests, Point Estimation and Confidence Intervals), One-Sample Location Problems (Sign Rank Test, Sign Test, Chi-squared test), Two-Sample Location Problems (Rank Sum Test, Mann-Whitney test), One-Way Layout and Two-Way Layout (Kruskal-Wallis test, Friedman test, Multiple Comparisons),

Linear statistics of ranked observations and asymptotically distribution of statistics based on ranks, Independence Problems (Efron's Bootstrap), Regression and Density Estimation (Smoothers and Kernels, Density Estimation), Introduction to Count Data

Human Resources Management EMG 474-2 (C: 30/00/70)

Understanding the Human Resource Management, Human resource planning, Recruitment, Training and development, Performance management and appraisal, Compensation Management, Employee Health and safety, Equal Employment Opportunity, Managing Workforce Diversity

Sensory Evaluation ANS 444-1 (O: 13/04/33)

Introduction to Sensory Analysis, General testing conditions and requirements of a sensory laboratory, Organization of a sensory evaluation programme, Sensory quality parameters, Detection, threshold and dilution test, Different tests for sensory evaluation, Methods of sensory evaluation of different food products

New Product Development ANS 445-1 (O: 00/30/20)

Development of 3 different novel food items and carry out physicochemical analysis, sensory analysis, and storage analysis and cost analysis (Animal based, Crop based, By-product based)

Project Cycle Management ANS 463-1 (O: 15/00/35)

Introduction to project management, Project management structures, Projects, programs and portfolios, introduction to project appraisal, financial and non-financial project appraisal, project planning, budgeting a project, project time management, network analysis, activity crashing, PERT, monitoring and controlling a project, project risk management, closure of a project

Advance Techniques in Aquatic Farming AQT 491-2(O: 29/02/69)

Introduction to commercial aquatic farming system, Energy dissemination in aquatic farming systems, Designing of aquaculture systems, Advanced farming systems and their engineering aspects, Raceways, RAS, Aquaponics, Marine cage culture, Bioflocks and Aquamimicry ,Advances in fish hatchery technologies ,Advanced approaches in diet and husbandry of fish, Farming new fish species, Advanced biotechnological approaches of aquaculture, Improving production efficiency, quality and environmental management of aquaculture

Import Export Procedures EAG 431-2 (O: 30/00/70)

International Trade-Institutional Framework and Basics, Export Marketing Opportunities, Methods of settlement of Payment & Export and Import Finance , International Commercial Terms-2010 (INCOTERMS-2010), Export Procedures and Documentation, Import Procedures and Documentation, Quality Controls on export and imports, Shipping and Marine Insurance , Freight Forwarding and Logistics.

Nanotechnology in Animal Science ANS 401-1 (O: 14/05/31)

Introduction, Understanding the Atom, Feynman's challenges, The importance of one billionth of a meter, Classification of nanoscale objects, Nanotechnology in everyday life, Economics of nanotechnology, Introduction to nano-biometrics, Lipids as nano-bricks and mortar, self-assembled monolayers, proteins, DNA,, Instrumentations in relations to nano-biometeics.

Business Communication EMG 465-1 (O: 05/20/25)

Constituent of business communication, Identify the five C's of communication and apply them to a form of communication, Applying suitable styles and techniques for different occasions, Negotiating with stake-holders, Expressing appreciation and gratitude, Framing and asking questions for clarification, Understanding the importance of effective listening, Presenting information properly, Writing mini reports, Facing an Interview, Planning writing by identifying the purpose audience and context, Entailing in related problem solving activities, Conducting Business Meetings, Business presentations

YEAR: 4 SEMESTER: 2

Research ANS 463-6 (C: 00/150/150)

Candidates are requested to carry out a research work (understanding the research problem, analytical skill, creativity, punctuality, research ethics, communication with the supervisor, handling of practical problems)

Industrial Training ANS 465-2 (CN: 00/80/20)

Candidates are required to complete a comprehensive training programme in government or private industries/institutes related to farm animal production, food technology and aquaculture & fisheries

Achievements
of Graduates of
Bachelor of Animal Science Honours(BAScHons) Degree Programme

Becoming an Animal Science graduate at Uva Wellassa University was one of the most valuable decisions that I made in my life. My passion towards Animal Science, particularly Dairy Cattle Management and Nutrition, was one of the major reasons why I chose Animal Science Degree programme. However, the Broad General Education I obtained through my degree pushed me beyond the limits I expected and opened newer avenues for my career path. Through Animal Science degree programme, I had the privilege not only to gain knowledge and skills on Animal Husbandry but also a thorough knowledge on Food Science Technology, Genetics, Economics and Basics of Accounting and Business Studies was gained. It provided me with a multidisciplinary approach in decisions I made throughout my life.

Benefiting my passion, my degree facilitated me to further work on the field of study I loved. Hence, after my graduation I had an opportunity to work as a Research Assistant while studying for my MPhil and then as a Commercial Farm Consultant in private sector. The broader working capacity I had gained through my basic degree was a blessing in every opportunity I had. Today, as a Lecturer in Animal Science degree programme in Uva Wellassa University I wish to pay my gratitude towards my degree programme and my University for making my life worth living along my dreams.

N. Ranaweera
Lecturer in Ruminant Nutrition
Department of Animal Science
Faculty of Animal Science and Export Agriculture
Uva Wellassa University of Sri Lanka

UWU is a fertile soil where it germinates the seeds like us. I was very lucky to enrol in the 2008/2009 batch of Animal Science degree programme and graduated with a sound basics of animal science and food technology. The knowledge, experience, and spirit I have gained from UWU have nourished my social and academic life and that brought my subject to life.

U.D.P. Manjula
Graduate Research Assistant/PhD Candidate
Department of Animal Science,
College of Agriculture & Life Sciences, Chungnam National University, Daejeon, South Korea

The four years I spent at Uva Wellassa University enhanced my knowledge, skills and talents in a multidisciplinary environment. It gave me the opportunity to enhance my potentials and creativity to become a successful innovator and an entrepreneur while developing my academic career as well.

A. Kulasinghe
Manager
University Business Linkage Cell,
Uva Wellassa University.
Proprietor: Delicatus Cookies, Matale

At Uva Wellassa University we were one family. UWU family was a platform for me to overcome my weaknesses and discover my potentials. The ability to face the challenges not only in my profession but also in my life was gained through my beloved university.

R.I. Wijethilaka
Manager, Dayagama Farm
National Livestock Development Board

The undergraduate period at Uva Wellassa University was an unforgettable period in my life. As an Animal Science graduate I was able to gather vast knowledge in my field of study and it helped me to enter in to Sri Lanka Administrative Services (SLAS) as well. We were able to finish our degree programme exactly in 4 years period. That helped me to save my valuable time as well as the valuable money of general public in Sri Lanka. UWU is the place which changed the path of my life.

M.B.J. Malcolm
Assistant Divisional Secretary
Weliwitiya, Divithura

STUDENT HANDBOOK 2019
Faculty of Animal Science & Export Agriculture
Uva Wellassa University

BACHELOR OF

SCIENCE HONOURS (BScHons) IN AQUATIC RESOURCES TECHNOLOGY

DEGREE PROGRAMME

BACHELOR OF SCIENCE HONOURS (BScHons) IN AQUATIC RESOURCES TECHNOLOGY DEGREE PROGRAMME

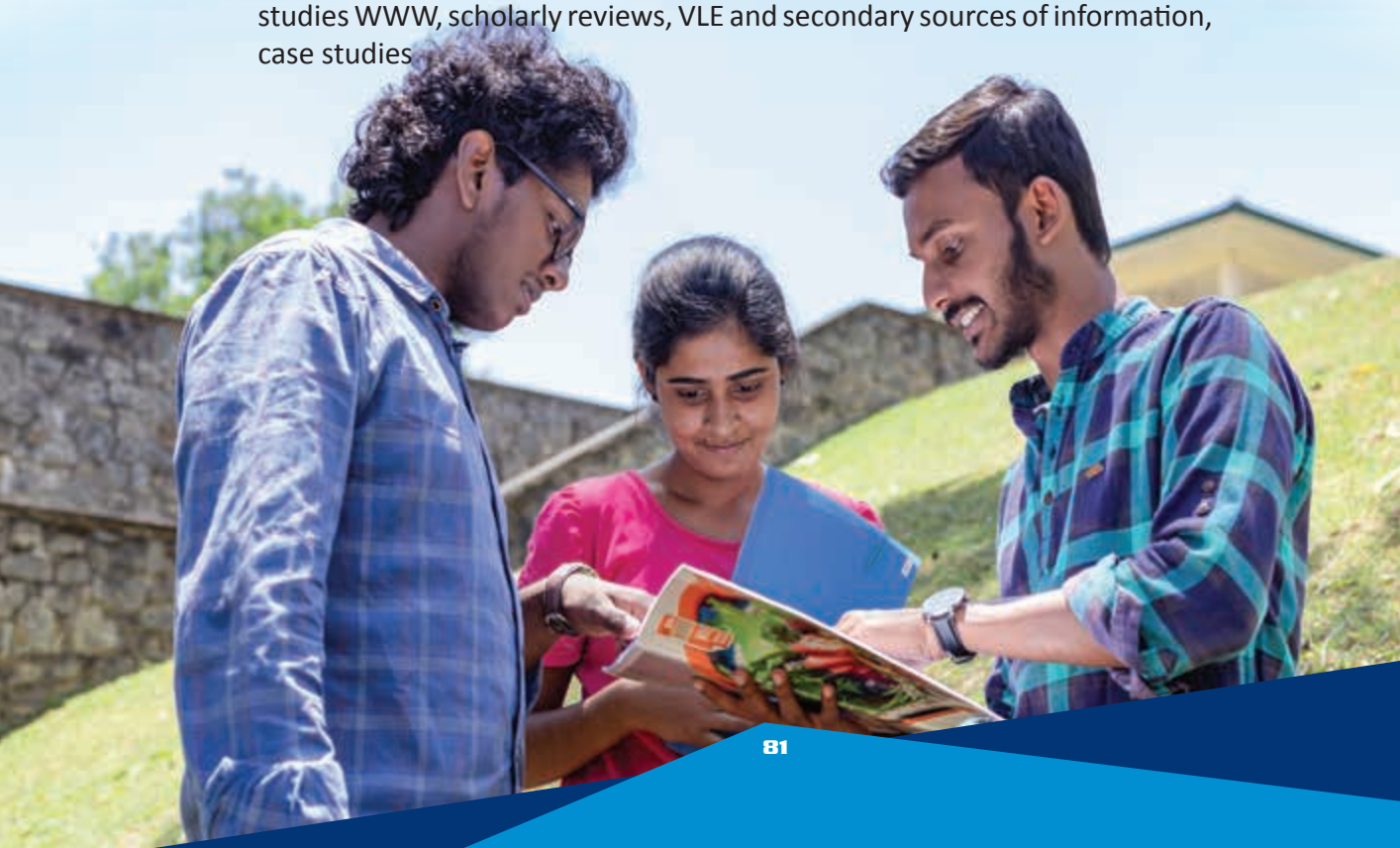
Introduction

Bachelor of Science Honours (BScHons) in Aquatic Resources Technology degree programme is a unique degree focused on producing well-rounded scholars, innovators, managers and leaders capable of using advanced theoretical, scientific & technological approaches to explore, develop and manage aquatic resources in a sustainable manner to cater the local, regional & global demands in the sector through enhancing production, managing aquatic resources, improving quality of aquatic environment and adding value to aquatic products. Mission of the degree programme is aligned with graduate profile by excelling in research and learning with strong emphasis on value addition to the local fish and other aquatic resources through modern scientific and technological approaches. First year of the degree programme mainly focuses on Essential Skills Development, Broad General Education and introduction to Aquatic Resources. In the second year, courses have been designed to provide thorough background knowledge on living and non-living aquatic resources, their diversity, production technology used in enhancing aquatic resources, utilization and management of aquatic resources with field training component. The courses on application of novel technologies of value addition to various aquatic resources and incubation projects on aquatic resources are designed in the third year. In the fourth year, undergraduates follow advanced technologies in aquatic resources, undergo industrial training and conduct research projects with an aim to develop the attitudes, knowledge and skills to fulfill local needs, global trends and value addition to national resources and evolving marketing.

After successful completion of the degree a graduate should be able to;

- employ theoretical and conceptual knowledge in themes on development, management and sustainable utilization of aquatic resources
- propose potential solutions to problems pertinent to aquaculture, fisheries, aquatic environment and processing sectors through logical, analytical & critical thinking
- demonstrate sound practical skills required for functioning effectively as an entry-level professional in aquatic resources sector and ability to apply them effectively in the working environment
- formulate plans and implement better management practices and ensure sustainability and safety in aquatic production system

- communicate effectively and present information, ideas, issues and solutions in oral, written and electronic formats to a wide range of audiences in mother tongue and English language
- demonstrate awareness of the current development in aquatic resources sector
- demonstrate professionalism, individual accountability, personal motivation, leadership and interpersonal skills in carrying out functions with minimum conflicts in a given working environment
- take initiative, assume personal responsibility and ability to instill entrepreneurship
- accomplish data processing & management needs in working environment using sound numerical and ICT skills
- adapt to changing environment
- develop the ability to identify appropriate pathway for future career and establish career goals by developing appropriate strategies
- take steps to acquire additional competencies and decision-making skills required to progress in chosen career with confidence
- take part and promote social responsibilities by engage in independent learning through improving discipline-based knowledge and skills used in WWW, scholarly reviews, VLE, secondary sources of information and case studies WWW, scholarly reviews, VLE and secondary sources of information, case studies



COURSE OUTLINE OF BACHELOR OF SCIENCE HONOURS (BScHons) IN AQUATIC RESOURCES TECHNOLOGY DEGREE PROGRAMME

YEAR: 1 SEMESTER: 1

No	Course Code	Course Title	Units	C/O/CN*
1	AQT 111-3	Evolution, Taxonomy and Biology of Aquatic Organisms I	3	C
2	AQT 112-2	Principles in Aquaculture	2	C
3	AQT 131-3	Aquatic Ecosystems and Biodiversity	3	C
4	ESD 121-1	English Language	1	C
5	ESD 103-2	Information Technology	2	C
6	BGE 121-2	Ethics and Law Basics	2	C
7	AQT 101-1	Mathematics for Biological Sciences	1	CN
8	AQT 132-1	Hydrometeorology	1	CN
9	ESD 151-1	Sinhala (Level 01)	1	CN
	ESD 161-1	Tamil (Level 01)	1	CN

YEAR: 1 SEMESTER: 2

No	Course Code	Course Title	Units	C/O/CN*
1	AQT 102-1	Fundamentals of Chemistry	1	C
2	AQT 103-2	General Microbiology	2	C
3	AQT 113-3	Evolution, Taxonomy and Biology of Aquatic Organisms II	3	C
4	AQT 151-3	Water Quality Management	3	C
5	ANS 141-2	Principles of Food Science	2	C
6	EAG 161-2	Biochemistry	2	C
7	ESD 141-2	Quantitative Reasoning	2	C
8	ESD 122-1	Communicative English	1	C
9	ESD 111-1	Communication Skills I	1	C
10	AQT 104-2	Fundamentals in Physics	2	CN
11	ESD 152-1	Sinhala (Level 02)	1	CN
	ESD 162-1	Tamil (Level 02)	1	CN

YEAR: 2 SEMESTER: 1

No	Course Code	Course Title	Units	C/O/CN*
1	AQT 211-3	Genetics in Aquaculture	3	C
2	AQT 241-2	Seaweed Culture and Value Addition	2	C
3	AQT 242-3	Aquaculture Nutrition and Feed Technology	3	C
4	AQT 243-2	Fish Seed Production	2	C
5	ANS 241-2	Principles of Food Preservation and Processing	2	C
6	ESD 221-1	Effective English Usage	1	C
7	BGE 211-2	Esthetic Studies	2	C

YEAR: 2 SEMESTER: 2

No	Course Code	Course Title	Units	C/O/CN*
1	AQT 244-2	Capture Fisheries	2	C
2	AQT 246-2	Ornamental Fish Breeding and Production	2	C
3	AQT 251-2	Fish Diseases	2	C
4	AQT 261-3	Aquatic Plant Propagation Technology	3	C
5	AQT 262-2	Aquaculture Engineering	2	C
6	AQT 271-2	Field Training	2	C
7	ESD 222-1	Explorative English	1	C
8	BGE 213-1	History	1	C
9	BGE 214-1	Geography	1	C

YEAR: 3 SEMESTER: 1

No	Course Code	Course Title	Units	C/O/CN*
1	AQT 311-2	Aquatic Microbiology	2	C
2	AQT 321-3	Oceanography	3	C
3	AQT 331-1	Aqua Eco-Tourism	1	C
4	AQT 351-2	Fish Population Dynamics	2	C
5	AQT 352-2	Entrepreneurship, IPR and Commercialization	2	C
6	AQT 361-2	Fishing Gear and Craft Technology	2	C
7	AQT 362-2	Aquatic Biotechnology	2	C
8	ESD 311-1	Communication Skills II	1	C
9	EMG 383-1	Marketing Strategies	1	C
10	AQT 363-1	Innovative Aquatic Product and technology Development	1	CN
11	ANS 341-2	Food Microbiology	2	O
12	AQT 341-2	Marine Finfish Culture	2	O
13	AQT 332-2	Aquatic Pollution and Ecotoxicology	2	O
14	AQT 364-1	Navigation and International Signals	1	O
15	AQT 353-2	Fisheries Cooperatives and Marketing	2	O

YEAR: 3 SEMESTER: 2

No	Course Code	Course Title	Units	C/O/CN*
1	AQT 301-3	Applied Biostatistics	3	C
2	AQT 322-3	Non-Living Ocean Resources	3	C
3	AQT 354-2	Fish Disease Diagnostic and Health Management	2	C
4	AQT 355-2	Waste Management in Aquatic Industries	2	C
5	AQT 365-3	Post-Harvest Techniques in Aquatic Products	3	C
6	AQT 342-2	Invertebrate Breeding and Farming	2	C
7	ANS 242-2	Food Chemistry	2	O
8	AQT 312-1	Fish Immunology	1	O
9	AQT 313-2	Fish Histology	2	O
10	AQT 323-1	Marine Megafauna	1	O
11	AQT 324-2	Hydrography	2	O
12	AQT 333-2	Aquatic Ecology	2	O
13	AQT 334-2	Limnology	2	O
14	AQT 342-1	Fisheries Field Techniques	1	O
15	AQT 356-2	Aqua Business Management	2	O

YEAR: 4 SEMESTER: 1

No	Course Code	Course Title	Units	C/O/CN*
1	AQT 461-2	RSGIS Applications in Fisheries and Aquaculture	2	C
2	AQT 451-2	Fisheries Management	2	C
3	AQT 452-2	Fisheries and Aquaculture Economics	2	C
4	AQT 462-2	Advanced Techniques in Aquatic Farming Systems	2	C
5	ANS 442-2	Food Safety and Quality Management	2	C
6	ANS 461-2	Scientific Writing and Research Methodology	2	C
7	EMG 474-2	Human Resources Management	2	C
8	AQT 401-1	Fish Pathology	1	O
9	AQT 411-1	Aquatic Food Safety	1	O
10	AQT 412-2	Fish Behavior	2	O
11	AQT 421-2	Marine Paleo-Ecology and Paleoclimatology	2	O
12	AQT 431-1	Natural Disaster Management	1	O
13	AQT 463-1	Industrial Microbiology	1	O
14	AQT 464-1	Bio informatics	1	O
15	AQT 432-2	Integrated Coastal Zone Management	2	O
16	AQT 453-1	Fisheries and Aquaculture Extension	1	O
17	AQT 441-1	Production and Trade of Marine Ornamental Organisms	1	O
18	ANS 441-2	Food Analysis	2	O
19	ANS 444-1	Sensory Evaluation	1	O

YEAR: 4 SEMESTER: 2

No	Course Code	Course Title	Units	C/O/CN*
1	AQT 471-6	Research	6	C
2	AQT 472-2	Industrial Training	2	CN

*C-Compulsory courses, O-Optional courses, CN-Compulsory-Non Credit courses

YEAR: 1 SEMESTER: 1

Refer BGE and ESD subjects offered in this semester under section "Course Structure" (Page No: 47-51).

Evolution, Taxonomy and Biology of Aquatic Organisms I AQT 111-3 (C: 39/12/99)

Introduction, Basic concepts of evolution, Evolution of lower aquatic organisms, Cell biology, Major characters of domains and kingdoms, Taxonomical classification and general characters of lower aquatic organisms, Body plan of lower phyla (Porifera, Coelenterate, Platyhelminthes, Nematoda, Annelida, Mollusca) in Kingdom Animalia and Protista, Anatomy & physiology of lower phyla in kingdom and Protista, Animalia and Plantae

Principles in Aquaculture AQT 112-2 (C: 26/10/64)

Introduction to aquaculture, History and current status, Study of aquaculture species and their important characteristics, Overview of commonly used culture systems and management practices, Harvesting and marketing

Aquatic Ecosystems & Biodiversity AQT 131-3 (C: 37/19/94)

Introduction, Basic concepts of ecosystems and biodiversity, Key characters of aquatic ecosystems, Biodiversity of different aquatic ecosystems, Adaptations of aquatic organisms in different habitats, Sampling and preservation of aquatic biota, Assessment & key descriptors of biodiversity, Major threats to the aquatic ecosystems, Solutions to overcome threats in the aquatic ecosystems, Management & Conservation of aquatic ecosystems

Mathematics for Biological Sciences AQT 101-1 (CN: 10/10/30)

Number system, Algebraic expressions, Linear inequalities, Compound inequalities, Equations, Quadratic equations, Functions and their graphs (Linear function, Quadratic functions, Power functions, polynomial function), Exponential function, Logarithmic function, Rational functions, Partial fractions, Matrices (Basic arithmetic operations of two matrices, transpose of matrix, determinant and inverse of 2×2 matrix, determinant and inverse of 3×3 matrix, Cramer's Rule), Limits of the functions, Differentiation (Principle of differentiation, differentiation of the power function, differentiation the product of two functions and quotient of two functions), Integrations (Indefinite integrals, Definite integrals, Area under the curve)

Hydrometeorology AQT 132-1 (CN: 14/02/34)

Introduction to hydrometeorology, Climate and weather parameters, Measurement & analysis of meteorological data, Hydrological cycle and processes, Runoff-rational

method, Runoff- hydrographic method, Rainfall seasons & climatic condition in Sri Lanka, Water resources in Sri Lanka, Global warming and impacts

YEAR: 1 SEMESTER: 2

Refer BGE and ESD subjects offered in this semester under section "Course Structure" (Page No: 47-51).

Fundamentals of Chemistry AQT 102-1 (C: 15/00/35)

Introduction, Identification of basic chemicals, Measurements & errors, Analysis of chemicals, Basics in analytical chemistry, Basic concepts of organic chemistry, Basic inorganic chemistry

General Microbiology AQT 103-2 (C: 28/04/68)

Introduction to microbiology, Bacterial cell structure & functions and classification, Staining procedures and identification of bacteria, Bacterial growth and metabolism, Introduction to blue green bacteria ,algae, fungi and protozoa, Culturing of bacteria and Fungi, Biochemical identification of bacteria, Basic structure of viruses and structure-function relationships, Ecology of microorganisms and adaptations in microorganisms to their environment, Microbial applications in agriculture, industry and medicine

Evolution, Taxonomy and Biology of Aquatic Organisms II AQT 113-3 (C: 38/15/97)

Evolution of higher invertebrates, vertebrates and plants, Taxonomical status, Anatomy & physiology of Phylum Arthropoda, Echinodermata, Protochordates, Chordata (Class Chondrichthyes, Osteichthyes, Amphibia, Reptilia, Aves, Mammalia) and higher plants (Gymnosperms and Angiosperms), Body systems of higher aquatic organisms, Modern evolutionary concepts, Interpretation of evolutionary evidences

Water Quality Management AQT 151-3 (C: 36/21/93)

Introduction to water quality, Physicochemical and biological water quality parameters, Water chemistry, Factors affecting on WQ deterioration, Impacts of WQ on ecosystems, culture systems & human, WQ monitoring & assessment, Water scarcity & applicable solutions, Treatment & management of wastewater & drinking water

Principles of Food Science ANS 141-2 (C: 30/00/70)

Overview of Food industry, Unit operations in food processing, Biological, chemical & physical principles of food science, Food systems, Regulations of food manufacturing, Marketing, import & export procedure of food in Sri Lanka, Codex alimentarius standards

Biochemistry EAG 161-2 (C: 25/10/65)

Basic Concepts- Endothermic and exothermic reactions, Anabolism and catabolism, energy and mass conservation in bio chemical reactions, Structure, composition, type of bonds, formation, functions and chemical reactions; Carbohydrates, Nucleic acids Proteins, Lipids. Basics of Enzymology Vitamins, Metabolism and absorption of major biomolecules

Fundamentals in Physics AQT 104-2 (CN: 30/00/70)

Mechanics, Waves and Vibrations, Properties of Liquids and Gases, Physical Optics

YEAR: 2 SEMESTER: 1

Refer BGE and ESD subjects offered in this semester under section "Course Structure" (Page No: 47-51).

Genetics in Aquaculture AQT 211-3 (C: 40/11/99)

Introduction to genetics and cytogenetics, Chromosome manipulation, Linkage, Gene mapping, Gene mutation, Genetic variation, Population genetics, Genetic variance, Relationship, Inbreeding, Quantitative genetics, Selection, Breeding and Genetic improvement

Seaweed Culture and Value Addition AQT 241-2 (C: 28/06/66)

Nursery Management Practices in Seaweed Farming, Seaweed Farm Management Practices, Culture Cycle of Seaweeds, Environmental impacts of seaweed farming and methods of mitigation, Present Status of seaweed farming in Sri Lanka, Potentials to develop value added products from seaweeds

Aquaculture Nutrition and Feed Technology AQT 242-3 (C: 36/20/94)

Introduction to fish and shellfish nutrition, nutritional biochemistry and roles of nutrients, bio energetics, different food and feeding habits, digestive physiology of fish and shellfish, Study of gut morphology and gut content of fish, Nutritional pathology of fish, Study of feed resources and manufacturing process and feed management practices

Fish Seed Production AQT 243-2 (C: 23/18/59)

Basic concepts in fish reproduction and breeding, identification of reproduction systems of typical bony fish and calculation of GSI and fecundity, quantity and quality of fish gemmates, preservation of gametes, inducing hormones and their

functions, selection and management of brood stock, fish propagation techniques and seed production, transportation of fish seeds, construction and management of hatchery, recent advances

Principles of Food Preservation and Processing ANS 241-2 (C: 26/08/66)

Introduction, Principles of food preservation & processing techniques, Different preservation methods applicable in food industry (conventional & novel applications), Industrial cleaning & sanitation procedure

YEAR: 2 SEMESTER: 2

Refer BGE and ESD subjects offered in this semester under section "Course Structure" (Page No: 47-51).

Capture Fisheries AQT 244-2 (C: 22/19/59)

Introduction to world capture fisheries with special reference to Sri Lanka, history and current status, characteristics of commercially important aquatic organisms, Fisheries framework, Management of migratory fish, Culture based fishery, Novel fishery management methods, Forecasting fishery trends

Ornamental Fish Breeding and Production AQT 246-2 (C: 29/02/69)

Introduction to Ornamental fish industry and trade, Construction and management of aquarium, Commercially important ornamental species (Vertebrates & Invertebrates, Breeding and rearing technology of live bears, egg bearers, aquatic invertebrates, Marine ornamental fish breeding and rearing, Production planning and financial management, Ornamental fish exportation industry, Laws and regulations related to ornamental fish industry and trade, Novel trends and value addition methods in ornamental fish industry

Fish Diseases AQT 251-2 (C: 27/06/67)

Introduction; Basic terminology, Disease causation triad, Multifactorial nature of a disease and stress as a factor in the occurrence of disease, Aetiology of fish diseases, Classification of fish diseases, Infectious diseases, Viral diseases, Bacterial diseases Fungal diseases, Parasitic diseases, Non-infectious diseases, Nutritional deficiencies, Environmental problems, Genetic disorders, Diseases in shellfish, Impact of fish diseases on aquaculture and environment, Current status of fish and shrimp diseases in Sri Lanka

Aquatic Plant Propagation Technology AQT 261-3 (C: 36/22/92)

Introduction to aquatic plants, General anatomy/structure of aquatic plants, Classification of aquatic plants based on their growth in relation to the habitat, Industry and propagation techniques, Aquatic plant dispersal methods, propagation structures, sexual and asexual propagation, In Vitro techniques and applications, Tissue culture techniques, Plant nutritional requirements, diseases and controlling measures, aquatic plant nursery management, harvesting and packaging procedures, rules and regulations of aquatic plant trade.

Aquaculture Engineering AQT 262-2 (C: 30/00/70)

Introduction to aquaculture production systems, Site selection and feasibility study, Designing & planning of farm layouts and the farming systems, Water Transport, Pipe and pipe parts, Selection of pumps and operation, Designing of feeding systems, Aeration and Oxygenation, Solid waste removal, Water quality Adjustment methods, Maintenance and Waste management, Recent advances

Field Training AQT 271-2 (C: 00/90/10)

Performing Daily routine activities in NAQDA freshwater aquaculture Centre, Daily routine activities in shrimp farms including hatchery management, Daily routine activities in freshwater ornamental fish farms (NAQDA) including fish breeding, hatchery management, rearing, feeding, health management production & identification of problems, use the instruments & follow the protocols and making necessary adjustments at technical laboratories

YEAR: 3 SEMESTER: 1

Refer BGE and ESD subjects offered in this semester under section "Course Structure" (Page No: 47-51).

Aquatic Microbiology AQT 311-2 (C: 27/06/67)

Introduction to occurrence of fish disease, Introduction to fish immunology, Multifactorial nature of a disease, Pathogenicity mechanism, Fish diagnosis methods (conventional and novel applications), Therapeutic methods used in Aquaculture, Treatments and health management of fish, Zoonotic diseases from fish and prevention of fish zoonoses

Oceanography AQT 321-3 (C: 36/20/94)

Introduction, Biological properties and processes in the marine environment, Physical properties and processes in the marine environment, Chemical properties and processes in the marine environment

Aqua Eco-Tourism AQT331-1 (C: 13/06/31)

Overview of tourism industry, Eco Tourism and Aqua Eco Tourism, Aqua Eco Tourism Destination, Positive & negative impact and legal background of Aqua Eco Tourism, Entrepreneurship and Innovation, Marketing, possible issues and challenges in business environment of aqua-ecotourism, Sustainability in Aqua Eco Tourism destinations

Fish Population Dynamics AQT 351-2 (C: 24/12/64)

Introduction, Dynamic nature of fish populations, Fish stock concepts & assessment methods, Assessment of fish growth, age, recruitment & reproduction, mortality, Fish population size estimation, Fishery surplus production, Yield per recruit model

Entrepreneurship, IPR and Commercialization AQT 352-2 (C: 30/00/70)

Sources and types of innovation, Corporate Entrepreneurship, Product life cycle and timing of entry, New product development process, IPR, copyrights and work protected by copyrights, rights of an owner renewals of registration and transferring the rights (THA), patent, trademark, Commercialization process of innovation, Commercialization process of innovation

Fishing Gear and Craft Technology AQT 361-2 (C: 22/18/60)

Introduction, Fishing gears and crafts, Classification, Fishing gear craft combination, Selectivity of a fishing gear, Design & construction of fishing gears & crafts, Operational procedures of fishing gears & crafts, Fish aggregation devices, Harmful effects of fishing gears, Gear modifications for the betterment, Fish behavior & harvesting, Responsible fishing & sustainable resource harvesting, Use of indigenous knowledge in fisheries

Aquatic Biotechnology AQT 362-2 (C: 24/12/64)

Basic concepts and techniques in biotechnology, specify aquatic biotechnology, DNA extraction, gel documentation, PCR technology, molecular cloning, transgenic fish technology, molecular markers, genomics

Marketing Strategies EMG 383-1 (C: 15/00/35)

Introduction to marketing, Marketing process, Marketing environment, Organizations and Marketing strategies, Marketing mix, Additional 3 "P"s, Marketing mix strategies, Customer driven marketing strategy, Segmentation, Targeting and Positioning market, Building customer satisfaction, Value and retention, Profitable customer relationship management, Introduction to International trade

Innovative Aquatic Product and Technology Development AQT 363-1 (CN: 00/00/50)

Develop/modify a process, technology, protocol or product from aquatic resource/ production system and the commercialization potentials of their innovation

Food Microbiology ANS 341-2 (O: 22/16/62)

Introduction, Types & sources of microorganisms on food, Factors affecting on microbial growth, Applications of microorganisms in food industry, Food borne diseases, Microbial identification & enumeration, Microbiological quality & quantity of a food sample

Marine Finfish Culture AQT 341-2 (O: 26/11/63)

Introduction, Biology and identification of commercially important marine finfish species, Hatchery design, construction requirement, breeding, farming and culture environment management and good management practices in mariculture

Aquatic Pollution and Ecotoxicology AQT 332-2 (O: 25/12/63)

Introduction to the aquatic pollution, Major types & classes of aquatic pollutants, Sources of aquatic pollutants, Effects of pollution on aquatic ecosystems, Monitoring aquatic pollution, Management & control of pollution in the aquatic environment, Fundamentals of ecotoxicology, Toxic agents in the aquatic ecosystems, Fate & effects of toxicants in aquatic ecosystems, Assessment of toxicity in water, Management of ecotoxicological problems in the environment, Risk assessment in aquatic ecosystems

Navigation and International Signals AQT 364-1 (O: 13/04/33)

Overview, General Navigation, Chart work and fixing ships, International regulations of collision at sea, International flag signals

Fisheries Cooperatives and Marketing AQT 353-2 (O: 20/20/60)

Introduction, Basics in fisheries cooperative societies & marketing strategies, Marketing of fish catch & credit saving facilities, Failures & issues in cooperative societies, Remedial methodologies

YEAR: 3 SEMESTER: 2

Applied Biostatistics AQT 301-3 (C: 30/30/90)

Introduction to event and probability, Conditional probability, Total probability law, Bayes theorem, random variables, Discrete probability distributions (Binomial, Poisson), Continuous probability distribution (Normal), probability sampling techniques (Simple random sampling, Systematic sampling, Stratified sampling, Cluster sampling), Non-probability sampling techniques (Convenience sampling, Judgmental sampling, Quota sampling, Snowball sampling, Point estimates, Confidence level, Level of significance, different situation of confidence interval estimation, Null hypothesis, Alternative hypothesis, one tailed test, two tailed test,

Fundamental hypothesis tests(one sample Z test, t test, proportion test, Two sample Z test, Two sample t test, paired t test, two sample proportion test), Normality test, Pearson correlation, Spearman correlation, Simple and multiple linear regression, dummy variable, regression model with categorical variables, Experimental designs (Completely Randomized Design, Randomized Complete Block Design, Factorial design, Latin Square design),Mean separation methods and data transformation methods, Non parametric analysis (One Sample location problems, Two related samples, Test for two independent samples, Test for K- related samples, Test for K-independent samples and multiple comparison)

Non-Living Ocean Resources AQT 322-3 (C: 39/14/97)

Non-Living Resources, Origin of Petroleum, Upstream Process of Petroleum, Minerals, Exploration Techniques, Legal Framework for Resource Exploration

Fish Diseases Diagnostics & Health Management AQT 354-2 (C: 26/08/66)

Introduction to occurrence of fish disease, Introduction to fish immunology, Multifactorial nature of a disease, Pathogenicity mechanism, Fish diagnosis methods (conventional and novel applications), Therapeutic methods used in Aquaculture, Treatments and health management of fish, Zoonotic diseases from fish and prevention of fish zoonoses

Waste Management in Aquatic Industries AQT 355-2 (C: 28/06/66)

Introduction to waste generation in aquaculture industry, Impacts of fish waste accumulation, Disposal methods applicable for aquatic waste, Management and utilization of solid and liquid aquatic waste, Approaches to mitigate waste generation, Value added products from aquatic wastes, Novel trends in waste management of aquatic industries

Post-Harvest Technology of Aquatic Products AQT 365-3 (C: 36/22/92)

Introduction, Importance of post-harvest handling of aquatic food, Muscle structure & chemical composition of fish, Quality degradation of fish & shell fish, Post-harvest handling methods, Post-harvest preservation & processing techniques of fish & shellfish, Value added aquatic products, Sensory & quality evaluation of aquatic products, Packaging techniques of aquatic foods, Management of processing plant, Marketing of aquatic food products, Aquatic food safety and toxicity, Risks and safety management of fish and fishery products

Invertebrate Breeding and Farming AQT 342-2 (C: 26/11/63)

Introduction to biology and identification of commercially important aquatic invertebrate species and their breeding, Farming and culture environment management, Industrial approaches and associated technology, Recent advances in the farming industry

Food Chemistry ANS 242-2 (O: 30/00/70)

Introduction, Chemical components, characteristics and their role in quality of food, Chemical & biochemical reactions applicable in preparation, processing & storage of food, Enzymes in food industry, Manipulation of chemical & biochemical reactions for improvement of quality of foods

Fish Histology AQT 313-2 (O: 07/16/77)

Introduction, Basics in fish histology, Organization of body structure of fish & shellfish, Tissues of major body systems of fish, Morphological examination of epithelium, glands, connective tissue (e.g. cartilage, bone and blood), muscle, and nervous tissues, Permanent mounting, Transparent techniques, Principles of tissue fixation, tissue processing and embedding, Microtomy, Basic histological staining techniques, Tissue identification of fish & shellfish

Marine Megafauna AQT 323-1 (O: 12/09/29)

Marine megafauna species in different animal groups, Habitat characteristics and ecological relationships of identified marine megafauna, evolution and taxonomy of marine megafauna groups, different aspects of eco-physiology & behaviors, life history and reproduction of marine megafauna, values, threats and conservation of marine megafauna species

Hydrography AQT 324-2 (O: 28/06/66)

Introduction to Hydrography, Geodesy and projection for hydrographic surveying activities, Future trends and technology in hydrography, GGPS/RTK

Aquatic Ecology AQT 333-2 (O: 26/12/62)

Basic concepts in ecology, Production ecology, Feeding ecology, Niche concept, Life history strategy in Population ecology in aquatic ecosystems, Life history patterns of populations, Population growth, patterns, Aquatic community ecology (Succession), Ecological control and regulation, Quantitative ecology, Ecological investigations, Environmental monitoring, Conservation ecology and Ecosystem management

Limnology AQT 334-2 (O: 30/00/70)

Introduction to Limnology, Lake basin morphometry, Thermal Stratification of lakes, Biological, physical, chemical properties and processes in lakes, Influence of anthropogenic activities for lakes, Restoration and management of eutrophicates

Fisheries Field Techniques AQT 342-1 (O: 10/10/30)

Introduction, Planning a survey & considerations, Survey methods, Filed surveying and quantifying techniques of aquatic organisms (fish assemblages, reef community) in different habitats

Aqua Business Management AQT 356-2 (O: 27/06/67)

Introduction, definition and importance, Functions of management, Aqua business planning, Financial record keeping and interpretation, Financial analysis, Decision making in aqua business, Aquaculture risk analysis and management, Farm site selection and Introduction to entrepreneurship

YEAR: 4 SEMESTER: 1

RSGIS Applications in Fisheries and Aquaculture AQT 461-2 (C: 19/22/59)

Principle of aerial photography and satellite remote sensing, Sensory types and platforms, Digital Image Processing, Remote sensing applications, Principles of GIS, Application of GIS

Fisheries Management AQT 451-2 (C: 26/10/64)

Introduction, Need of management of fisheries, Basic components & key characters of fishery systems, Goals of fishery management, Fishery property regimes, Stakeholders of a fishing system, Legal background, Fishery management tools, Bio economic model/profit maximization, Ecosystem Approach to Fisheries Management, Co-management, Community training methods & training tools, Fishery management institutions and their responsibilities, Issues and remedial actions

Fisheries and Aquaculture Economics AQT 452-2 (C: 24/12/64)

Introduction, Micro/macro-economic theories with special reference to fishery economics and economics of aquaculture, Fisheries economic principles, Fishery system dynamics and sustainable yield, Vessel economics, Investment planning and economic feasibility analysis, Farm income concept and productivity valuation,

Farm budgeting, cash flows, record keeping and accounting, International Fisheries Economics and Trade of Fisheries Products

Advanced Techniques in Aquatic Farming Systems AQT 462-2 (C: 29/02/69)

Introduction to commercial aquaculture, Energy dissemination in aquaculture farms, farm designs, Advanced farming systems and their engineering aspects, advanced hatchery techniques and husbandry approaches, new species and verities, biotechnological approaches, quality improvement, environmental management, recent advances

Food Safety and Quality Management AQT 442-2 (C: 25/10/65)

Introduction, Cleaning and sanitation in processing factory, Personal hygiene of the workers, Factory layout design, Good Agricultural Practice (GAP)/ Good Manufacturing Practice (GMP), Common quality assurance method (HACCP, ISO, Codex Alimentarius Commission and SLS), Novel quality assurance methods, Laboratory accreditation / Occupational Safety (OHSAS 18000), Total quality management and other novel concepts (FSSC 22000), Food Act

Scientific Writing and Research Methodology ANS 461-2 (C: 25/10/65)

Introduction to scientific writing, Writing a proposal, Identification of the research problem, Proposal format, Writing a dissertation, Titles and abstract, Introduction, Literature Review and objective/materials & methods, Results and discussion, Interpretation of tables, graphs and figures and conclusion, References (Bibliography/ reference list: different reference styles); EndNote, Research ethics; Plagiarism, authorship, Publication and Presentation, Oral and poster, Other publications

Human Resources Management EMG 374-2 (C: 30/00/70)

Understanding the Human Resource Management, Human resource planning, Training and development, Employee Safety and Health, Equal Employment Opportunity, Case Studies

Fish Pathology AQT 401-1 (O: 11/08/31)

Basic of fish pathology, Components of description to a lesion, General pathological changes of diseased fish, Systematic pathology of fish, Processing & handling of tissues & examination, Pathogenesis of disease

Aquatic Food Safety AQT 411-1 (O: 13/04/33)

Introduction, Importance of aquatic food safety, Food safety hazards in fisheries and aquaculture products, Microbiological, biochemical, chemical and physical contaminants in aquatic food, Food safety issues, Standards and regulations for aquatic food safety, Analysis and risk assessment, Assurance of aquatic food safety, Novel trends in aquatic food safety

Fish Behavior AQT 412-2 (O: 30/00/70)

Overview, Basics of fish behaviour, Sensory Modalities, Cognition, Behavioural Ecology, Behavioural patterns of fish (Foraging, Mating, Parental Care, & Shoaling Behaviour), Importance of those patterns, Cooperative Behaviour in Fishes, Group-Living and Social Networks, Decision-making and Trade-offs in fish behavior, Parasites and fish behavior, Welfare in farmed fish, Fish behaviour and fishing gears, Fish behaviour and management of fisheries

Marine Paleo-Ecology and Paleoclimatology AQT 421-2 (O: 26/08/66)

Introduction to paleoecology, Response of selected marine fossil assemblages to environmental variation, Relationship between geochemistry and paleontology, Oxygen isotope stratigraphy, Paleo-environmental and paleoclimatic evolution, Foraminiferal assemblages in recent and past depositional environments

Natural Disaster Management AQT 431-1 (O: 11/08/31)

Introduction to disaster management, UNISDR Terminology, Classification of hazards, Hazards Characteristics, Disaster Management Cycle, Hazard assessment, Vulnerability assessment and Disaster risk assessment, Impact of disasters on aquatic systems, Disaster preparedness, mitigation, Response and Recovery, Remote sensing and GIS application in disaster management

Industrial Microbiology AQT 463-1 (O: 12/06/32)

Introduction, Fermentation, Application of Fermentation in non-food products, Screening, Detection, Assay of Fermented Food Products, Biological waste treatment, Application of Bio flocks, Bio Fuel Production and their applications, Production of biofertilizers, Microbial applications in ornamental fish industry, Microbial indicators of water quality and health in aquaculture industry, Novel approach

Bioinformatics AQT 464-1 (O: 10/10/30)

Introduction & history, Basic concepts in system biology, central dogma and development of bioinformatics, Sequence analysis methods, Programme databases

using appropriate models, Advanced technologies of functional genomics (Next Generation Sequencing -NGS: reads mapping & variants calling Functional prediction of genetic variants), Transcriptomes (Inferring transcriptomes using RNA-Seq, Prediction and analysis of noncoding RNAs, aquagenomics and microarray)

Integrated Coastal Zone Management AQT 432-2 (O: 30/00/70)

Introduction, Characteristics of coastal zone, Coastal setting, Human and natural resources interaction, Threats on coastal ecosystem, History of development of coastal management, basic concepts and principles related to ICZM, Needs & goals of ICZM, Principles of ICZM, Capacities needed for ICM / Elements of Management Framework, Integration, Major functions & tools of ICZM, Participatory planning and project design: Results based management, Logical Framework Approach (LFA): Key Steps – Stakeholder analysis, Problem Analysis, Objective Analysis, Alternative Analysis

Fisheries and Aquaculture Extension AQT 453-1 (O: 13/06/31)

Introduction to basics in fisheries and aquaculture extension, Key components of sociology and psychology, Policies, plans and programmes on fisheries and aquaculture extension, Co-management methods (adopter categories and barriers in diffusion of fisheries innovations), Issues on fisheries and aquaculture extension, Fisheries extension methods and their effectiveness (transfer of technology process, role of Non-governmental organizations-NGOs in extension of fisheries and aquaculture)

Production and Trade of Marine Ornamental Organisms AQT 441-1 (O: 13/05/32)

Introduction to Marine ornamental fish industry and trade, Impacts of marine ornamental fish industry on biodiversity, Cultivable marine ornamental fish species (Vertebrates and Invertebrates), Planning and maintenance of marine aquaria, Breeding and rearing technology, Feeding, Water Quality and Disease management of a marine aquarium, Coral farming and live rock commercial production, Marine ornamental fish exportation and novel trends

Food Analysis ANS 441-2 (O: 24/12/64)

Introduction, Sample pre-treatment and preparation for analysis, Extraction techniques in food analysis, Analytical techniques of food constituents (Chromatographic, Spectroscopic, Atomic Absorption technique, Spectrophotometry methods, HPLC and GC), Analysis & estimation of specific food constituents (nutrients, additives, adulterants, residue, food colour, Calcium levels)

Sensory Evaluation ANS 444-1 (O: 13/04/33)

Introduction, Principles behind sensory evaluation programme, Testing conditions and requirements of sensory laboratory, Organization of sensory evaluation programme, Sensory quality parameters, Sensors for detection and threshold levels, Tests for sensory evaluation – discrimination, descriptive, affective, ranking test (selection of an appropriate statistical analysis method), Methods of sensory evaluation of different food products

YEAR: 4 SEMESTER: 2

Research AQT 471-6 (C: 00/150/150)

Final year research project basically provides self-learning opportunity on problem solving within different disciplines such as fisheries and aquaculture related to the industry in a scientific way. Further final outputs of the research allow enhancing the sustainable utilization and innovation technology of the aquatic resources in Sri Lanka.

Industrial Training AQT 472-2 (CN: 00/80/20)

Candidates are required to complete a comprehensive training programme in government or private industries/institutes related to Aquatic Resources Production and Management

Achievements
of Graduates of
Bachelor of Science Honours (BScHons) in Aquatic Resources Technology Degree Programme

We are taking decisions in every single moment in our lives. Some are routine while the others have less impact on our future. For these decisions, we do not need significant efforts and time. But others are so challenging that they require us to set a selection criterion. The precise choice to join with UWU family before seven years ago, has enlightened my life. Throughout the period of four years, I gained a thorough knowledge on Aquatic Resources Technology in which I fully involved and was fully aware of the value and current importance of it. Also, the course curriculum focuses not only to develop a person armed with the aquatic resources technologies but also to equip by adding the Broad General (BGE) and Essential Skill Development (ESD) courses as a flagship in the society.

Though this was a short period, I made a big impact in fisheries management field in the country as a scientist by proposing novel approaches towards sustainable utilistion of resources. Undoubtedly, I can say that the foundation of my degree with appropriate knowledge and confidence, which brought me up to the present position of Lecturer in Fisheries Management attached to the Department of Animal Science at Uva Wellassa University. I am pleased to see more and more enthusiastic scholars entering to the Uva Wellassa University, who can add values to national resources with an aim to make a better future to the country. I sincerely hope that I will be able to share a dream with you all, who will join with us.

P.C.B. Dias
Lecturer in Fisheries Management
Department of Animal Science
Faculty of Animal Science and Export Agriculture
Uva Wellassa University of Sri Lanka

In year 2009, I started reading for my Bachelor's degree at UWU and after completion of four years, I graduated with a honours degree in Aquatic Resources Technology while receiving the Vice Chancellor's award for the best performance in Aquatic Resources Technology degree programme. As undergraduates, we were guided by our lecturers to gain the maximum knowledge during lectures and practicals. Further, we had well planned field trainings throughout the four years that led us to gain the practical exposure in the field of Aquaculture. As an Assistant Superintendent of Customs, currently attached to the Biodiversity, Cultural and National Heritage Protection Division of Sri Lanka Customs, I am having a successful career. I am proud to be a product of UWU.

S. Jayasinghe
Assistant Superintendent of Customs
Sri Lanaka Customs Department

I graduated from UWU with a BSc Hons in Aquatic Resources Technology in 2015. Currently, I am a graduate student and a research assistant at the University of Massachusetts Dartmouth's School for Marine Science and Technology in the USA. UWU increased my standards to a higher level through its well-rounded higher education and scholastic approaches. I am forever grateful and happy to express the key role UWU played in fostering my success.

N.S.S. Etige
Graduate Research Assistant / MSc Candidate
SMAST Student Representative
Oceanographic Modelling & Analysis Laboratory
School for Marine Science and Technology
University of Massachusetts Dartmouth
New Bedford, MA 02744 USA.

An enormous interest on ornamenal fish trade and the earnest expectation to be a successful entrepreneur since my childhood were the secrets which open the doors of higher education at Uva Wellassa University to explore the disciplinary of Aquatic Resource Technology. Based with the balanced, novel and up to date knowledge gained through this degree programme, I was able to do a onerous service to Sri Lankan ornamental fish trade in export sector as a young entrepreneur in the feild of Aquacuture. I must highlight the guidance and knowledge gained from Uva Wellassa University that act as a magical force behind the success of my career as an upcoming young entrepreneur in Sri Lankan Ornamental Fish Trade.

T. Madushan
Proprietor
Shan Aqua Farm. Pvt LTD

STUDENTHAND BOOK 2019
Faculty of Animal Science & Export Agriculture
Uva Wellassa University

BACHELOR OF

SCIENCE HONOURS (BScHons) IN EXPORT AGRICULTURE

DEGREE PROGRAMME

BACHELOR OF SCIENCE HONOURS (BScHons) IN EXPORT AGRICULTURE DEGREE PROGRAMME

Introduction

Bachelor of Science Honours (BScHons) in Export Agriculture is a market oriented degree programme designed and introduced by the Department of Export Agriculture. Graduates of BSc in Export Agriculture are aspired to be scholars, innovators, entrepreneurs, leaders and global citizens who possess positive attitudes, values & ethics and the clusters of generic capabilities of: disciplinary & interdisciplinary knowledge and practice, critical thinking, innovativeness & problem solving skills, managerial and entrepreneurial skills, information usage & management, communication, networking and social skills required in contributing to the national economy providing innovative solutions for the issues in agricultural production, processing and marketing giving more emphasis on value addition to the agricultural resources base. This degree programme is a four-year degree programme with three specialization areas namely Agricultural Production Technology, Food Processing Technology and Entrepreneurial Agriculture. The undergraduates are taught a wide range of courses with an adequate practical exposure and field training on Agriculture Production especially during the first three years. They will also be exposed to an Industrial Training during the third year attached to leading agro-based industries in Sri Lanka to understand the real working environment. At the last semester of the academic programme, undergraduates are provided an opportunity to involve in a research project with strong emphasis on value addition to local agricultural resources through modern scientific and technological approach.

After successful completion of the degree a graduate should be able to;

- apply knowledge of ethics and ethical standards with a sense of social responsibility and accountability within the workplace and community while demonstrating positive attitudes
- apply broad general knowledge to excel in the workplace and community in dealing with real life problems.
- use advanced knowledge to propose innovative solutions pertinent to issues in the agricultural value chain.
- demonstrate practical skills in farming, agricultural technology transfers and addressing the emerging issues in the sector.

- exercise and further develop the new competencies to assume major responsibilities with confidence
- conduct research on relevant fields at different scales by need assessment, objective evaluation and interpretation giving more emphasis on value addition
- demonstrate commitment to intellectual openness (integrity) and curiosity, and the awareness of the limits of current knowledge and of the links amongst disciplines.
- make informed decisions and act with flexibility, adaptability and creativity.
- take initiatives, assume personal responsibilities and demonstrate accountability to practice entrepreneurship.
- demonstrate managerial competencies through skillful planning, organizing, leading and controlling of agricultural resources
- work in teams, assume leadership and promote social engagement
- apply specific skills in acquiring, organizing, analyzing, evaluating and presenting information recognizing the increasing prominence of digital-based activities.
- apply transferable skills related to ICT and information literacy
- communicate information, arguments and analyses effectively, both orally and in writing
- demonstrate awareness of the current developments in the agriculture sector

COURSE OUTLINE OF BACHELOR OF SCIENCE HONOURS (BScHons) IN EXPORT AGRICULTURE DEGREE PROGRAMME

YEAR: 1 SEMESTER: 1

No	Course Code	Course Title	Units	C/O/CN*
1	BGE 121-2	Ethics and Law Basics	2	C
2	ESD 103-2	Information Technology	2	C
3	ESD 121-1	English Language	1	C
4	EAG111-1	Crop Botany	1	C
5	EAG112-1	Principles of Entomology	1	C
6	EAG113-1	Principles of Microbiology	1	C
7	EAG114-2	Principles of Crop Physiology	2	C
8	EAG141-2	Agricultural Meteorology and Climatology	2	C
9	EAG 151-2	Principles of Agronomy	2	C
10	EAG 101-1	Mathematics for Biological Sciences	1	C
11	ESD 151-1	Sinhala (Level 01)	1	CN
	ESD 161-1	Tamil (Level 01)	1	CN

YEAR: 1 SEMESTER: 2

No	Course Code	Course Title	Units	C/O/CN*
1	ESD 111-1	Communication Skills I	1	C
2	ESD 122-1	Communicative English	1	C
3	ESD 141-2	Quantitative Reasoning	2	C
4	EAG115-1	Principles of Pathology	1	C
5	EAG131-3	Principles of Agricultural Economics	3	C
6	EAG142-2	Principles of Agricultural Engineering	2	C
7	EAG152-1	Principles of Seed Technology	1	C
8	EAG161-2	Biochemistry	2	C
9	EAG171-2	Principles of Soil Science	2	C
10	ESD 152-1	Sinhala (Level 02)	1	CN
	ESD 162-1	Tamil (Level 02)	1	CN

YEAR: 2 SEMESTER: 1

No	Course Code	Course Title	Units	C/O/CN*
1	BGE 211-2	Aesthetic Studies	2	C
2	ESD 221-1	Effective English Usage	1	C
3	EAG 211-2	Basic Genetics	2	C
4	EAG241-2	Farm Machinery and Mechanization	2	C
5	EAG251-3	Cereals and Other Field Crop Production	3	C
6	EAG 252-2	Principles of Horticulture	2	C
7	EAG253-1	Farming Systems	1	C
8	EAG261-1	Principles of Food Science	1	C
9	EAG 271-2	Plant Nutrition and Soil Fertility Management	2	C
10	ANS 271-2	Basics in Animal Science	2	C

YEAR: 2 SEMESTER: 2

No	Course Code	Course Title	Units	C/O/CN*
1	BGE 213-1	History	1	C
2	BGE 214-1	Geography	1	C
3	ESD 222-1	Explorative English	1	C
4	EAG201-1	Basics in Statistics	1	C
5	EAG212-2	Crop Pest and Disease Management	2	C
6	EAG 221-2	Agribusiness Management	2	C
7	EAG242-2	Irrigation and Water Management	2	C
8	EAG254-2	Fruit and Vegetable Production	2	C
9	EAG 255-3	Plantation Crop Production and Processing	3	C
10	EAG 262-1	Principles of Postharvest Technology	1	C
11	EAG 272-1	Soil and Water Conservation Technology	1	C

MAJORING IN AGRICULTURAL PRODUCTION TECHNOLOGY

YEAR: 3 SEMESTER: 1

No	Course Code	Course Title	Units	C/O/CN*
1	ESD 311-1	Communication Skills II	1	C
2	EAG 301-1	Experimental Designs	1	C
3	EAG 311-2	Advanced Agricultural Microbiology	2	C
4	EAG 312-2	Introduction to Biotechnology	2	C
5	EAG 313-2	Pesticide Formulation and Application	2	C
6	EAG 324-2	Agricultural Technology Dissemination	2	C
7	EAG 341-1	Advanced Irrigation Technologies	1	C
8	EAG 342-2	Geographic Information Systems and Remote Sensing	2	C
9	EAG 343-2	Phyto-Chemistry and Extraction Technology	2	C
10	EAG 351-1	Agro Ecology	1	C
11	EAG 381-2	Field Training on Crop Production	2	C

OPTIONAL COURSES

No	Course Code	Course Title	Units	C/O/CN*
1	EAG 321-2	Agricultural Entrepreneurship	2	O
2	EAG 323-2	Agricultural Marketing and Price Analysis	2	O
3	EAG 361-2	Advanced Postharvest Technology	2	O

MAJORING IN ENTREPRENEURIAL AGRICULTURE

YEAR: 3 SEMESTER: 1

No	Course Code	Course Title	Units	C/O/CN*
1	ESD 311-1	Communication Skills II	1	C
2	EAG 321-2	Agricultural Entrepreneurship	2	C
3	EAG 322-2	Agricultural Information Management	2	C
4	EAG 323-2	Agricultural Marketing and Price Analysis	2	C
5	EAG 324-2	Agricultural Technology Dissemination	2	C
6	EAG 331-3	Environment and Resource Economics	3	C
7	EAG 332-2	Macroeconomics	2	C
8	EAG 342-2	Geographic Information Systems and Remote Sensing	2	C
9	EAG 381-2	Field Training on Crop Production	2	C

OPTIONAL COURSES

No	Course Code	Course Title	Units	C/O/CN*
1	EAG 301-1	Experimental Designs	1	O
2	EAG 313-2	Pesticide Formulation and Application	2	O
3	EAG 320-2	Business Communication	2	O
4	EAG 333-2	Farm Accountancy	2	O
5	EAG 361-2	Advanced Postharvest Technology	2	O

MAJORING IN FOOD PROCESSING TECHNOLOGY

YEAR: 3 SEMESTER: 1

No	Course Code	Course Title	Units	C/O/CN*
1	ESD 311-1	Communication Skills II	1	C
2	ANS 371-3	Animal Product Processing Technology	3	C
3	EAG 301-1	Experimental Designs	1	C
4	EAG 311-2	Advanced Agricultural Microbiology	2	C
5	EAG 312-2	Introduction to Biotechnology	2	C
6	EAG 342-2	Geographic Information Systems and Remote Sensing	2	C
7	EAG 343-2	Phyto-Chemistry and Extraction Technology	2	C
8	EAG 361-2	Advanced Postharvest Technology	2	C
9	EAG 362-2	Food Chemistry	2	C
10	EAG 381-2	Field Training on Crop Production	2	C

OPTIONAL COURSES

No	Course Code	Course Title	Units	C/O/CN*
1	EAG 321-2	Agricultural Entrepreneurship	2	O
2	EAG 323-2	Agricultural Marketing and Price Analysis	2	O
3	EAG 324-2	Agricultural Technology Dissemination	2	O

MAJORING IN AGRICULTURAL PRODUCTION TECHNOLOGY

YEAR: 3 SEMESTER: 2

No	Course Code	Course Title	Units	C/O/CN*
1	EAG 314-2	Eco physiology	2	C
2	EAG 315-2	Genetic Improvement of Crops	2	C
3	EAG 316-2	Plant Tissue Culture	2	C
4	EAG 344-1	Applications of GIS and Remote Sensing	1	C
5	EAG 352-2	Commercial Seed Production and Nursery Management	2	C
6	EAG 353-2	Controlled Environment Agriculture	2	C
7	EAG 354-2	Medicinal Plants Production Technology	2	C
8	EAG 355-2	Organic Agriculture	2	C
9	EAG 356-2	Spice and Beverage Crop Production and Value Addition	2	C

OPTIONAL COURSES

No	Course Code	Course Title	Units	C/O/CN*
1	EAG 325-1	Agri-Tourism	1	O
2	EAG 326-2	Agro-Food Supply Chain Management	2	O
3	EAG 327-2	Farm Management	2	O
4	EAG 337-2	Farm Financial Management	2	O
5	EAG 339-1	Agricultural Policies	1	O
6	EAG 364-2	Food Preservation Technology	2	O

MAJORING IN ENTREPRENEURIAL AGRICULTURE

YEAR: 3 SEMESTER: 2

No	Course Code	Course Title	Units	C/O/CN*
1	EAG 325-1	Agri-Tourism	1	C
2	EAG 326-2	Agro-Food Supply Chain Management	2	C
3	EAG 327-2	Farm Management	2	C
4	EAG 328-1	Innovation and Creativity Management	1	C
5	EAG 329-2	Strategic Management	2	C
6	EAG 334-1	Business Law	1	C
7	EAG 335-2	Development Economics	2	C
8	EAG 336-2	Environmental Valuation	2	C
9	EAG 337-2	Farm Financial Management	2	C
10	EAG 338-2	International Marketing	2	C

OPTIONAL COURSES

No	Course Code	Course Title	Units	C/O/CN*
1	EAG 339-1	Agricultural Policies	1	O
2	EAG 344-1	Applications of GIS and Remote Sensing	1	O
3	EAG 364-2	Food Preservation Technology	2	O

MAJORING IN FOOD PROCESSING TECHNOLOGY

YEAR: 3 SEMESTER: 2

No	Course Code	Course Title	Units	C/O/CN*
1	EAG 317-2	Food Microbiology and Biotechnology	2	C
2	EAG 345-2	Food Engineering	2	C
3	EAG 363-2	Food Nutrition and Health	2	C
4	EAG 364-2	Food Preservation Technology	2	C
5	EAG 365-2	Beverage Technology	2	C
6	EAG 366-3	Food Analysis	3	C
7	EAG 367-2	Grain Product Technology	2	C
8	EAG 368-2	Spice Technology	2	C

OPTIONAL COURSES

No	Course Code	Course Title	Units	C/O/CN*
1	EAG 326-2	Agro-Food Supply Chain Management	2	O
2	EAG 339-1	Agricultural Policies	1	O
3	EAG 344-1	Applications of GIS and Remote Sensing	1	O

MAJORING IN AGRICULTURAL PRODUCTION TECHNOLOGY

YEAR: 4 SEMESTER: 1

No	Course Code	Course Title	Units	C/O/CN*
1	EAG 401-2	Bio-Statistics	2	C
2	EAG 411-2	Plant Stress Signaling	2	C
3	EAG 442-2	Precision Agriculture	2	C
4	EAG 451-2	Climate Change and Crop Production	2	C
5	EAG 452-2	Commercial Floriculture and Landscaping	2	C
6	EAG 453-2	Crop Modeling and Simulation	2	C
7	EAG 491-1	Research Methodology and Scientific Writing	1	C
8	EAG 481-2	Industrial Training	2	CN

OPTIONAL COURSES

No	Course Code	Course Title	Units	C/O/CN*
1	EAG 422-2	Human Resource Management	2	O
2	EAG 431-2	Export Import Procedures	2	O
3	EAG 441-2	Agricultural and Food Waste Utilization Technology	2	O
4	EAG 455-2	Safety and Quality Assurance for Fresh Produce	2	O
5	EAG 462-2	Food Safety and Quality Management	2	O

MAJORING IN ENTREPRENEURIAL AGRICULTURE

YEAR: 4 SEMESTER: 1

No	Course Code	Course Title	Units	C/O/CN*
1	EAG 402-2	Econometrics	2	C
2	EAG 421-2	Agricultural Project Management	2	C
3	EAG 422-2	Human Resource Management	2	C
4	EAG 423-2	Venture Creation	2	C
5	EAG 431-2	Export Import Procedures	2	C
6	EAG 432-2	International Trade and Finance	2	C
7	EAG 491-1	Research Methodology and Scientific Writing	1	C
8	EAG 481-2	Industrial Training	2	CN

OPTIONAL COURSES

No	Course Code	Course Title	Units	C/O/CN*
1	EAG 433-2	Green Economics	2	O
2	EAG 441-2	Agricultural and Food Waste Utilization Technology	2	O
3	EAG 442-2	Precision Agriculture	2	O
4	EAG 455-2	Safety and Quality Assurance for Fresh Produce	2	O
5	EAG 462-2	Food Safety and Quality Management	2	O

MAJORING IN FOOD PROCESSING TECHNOLOGY

YEAR: 4 SEMESTER: 1

No	Course Code	Course Title	Units	C/O/CN*
1	EAG 401-2	Bio-Statistics	2	C
2	EAG 441-2	Agricultural and Food Waste Utilization Technology	2	C
3	EAG 461-2	Food Packaging Technology	2	C
4	EAG 462-2	Food Safety and Quality Management	2	C
5	EAG 463-2	Functional Foods and Nutraceuticals	2	C
6	EAG 464-1	Sensory Evaluation	1	C
7	EAG 491-1	Research Methodology and Scientific Writing	1	C
8	EAG 481-2	Industrial Training	2	CN

OPTIONAL COURSES

No	Course Code	Course Title	Units	C/O/CN*
1	EAG 422-2	Human Resource Management	2	O
2	EAG 431-2	Export Import Procedures	2	O
3	EAG 455-2	Safety and Quality Assurance for Fresh Produce	2	O

YEAR: 4 SEMESTER: 2

No	Course Code	Course Title	Units	C/O/CN*
1	EAG 492-8	Research Project	8	C

*C-Compulsory courses, O-Optional courses, CN-Compulsory-Non Credit courses

COURSE OUTLINE OF BACHELOR OF SCIENCE HONOURS (BScHons) IN EXPORT AGRICULTURE DEGREE PROGRAMME

YEAR: 1 SEMESTER: 1

Refer BGE and ESD subjects offered in this semester under section "Course Structure" (Page No: 47-51).

Mathematics for Biological Sciences EAG 101-1 (C: 00/30/20)

Basic concepts in Algebra, Equations and Inequalities, Law of Indices and logarithmic functions, Functions (graphical function, composition of function, Inverse function), Limits of functions, Derivatives of a function, Integration of a function, Real world application of Mathematics functions

Crop Botany EAG 111-1 (C: 10/10/30)

Introduction to Crop Botany (Classification, ICBN), Functions, Anatomy and Modifications of Plant Vegetative Organs of Vascular Plants (Tracheophytes): Leaf, Stem and Root, Floral Biology (Reproductive System, Floral External and Internal Structures and Modifications), Control Mechanisms of Plant Reproduction, Seed Development and Fruit Formation, Characters of Important Crop Families (Poaceae and Zingerberaceae, Alliaceae, Bromeliaceae, OrchidaceaeDiascoreaceae, Musaceae, Cucurbitaceae, Cruciferae, Fabaceae, Mulvaceae, Solanaceae, Euphorbeaceae, Carica, Convulvaceae, Rutaceae, piperaceae, Anacardiaceae, Lauraceae, Rubiaceae, Sterculiaceae, Myristaceae and Myrtaceae)

Principles of Entomology EAG 112-1 (C: 10/10/30)

General announcements on the course, its contents and evaluations, Basic structure of insect body, cuticle, segmentation and insect head, Antennae, typical mouthparts and their modifications, Insect leg, wings and their modifications, Introduction to Acarology and Nematology, Insect Vision and Communication, Morphology of insect digestive system, circulatory system, respiratory system, Morphology of insect nervous system, excretory system, male and female reproductive systems, Morphology of male and female reproductive systems (contd.), Insect metamorphosis and its physiology, Physiology of circulatory, respiratory and nervous systems, Physiology of excretory system, reproductive physiology of insects

Principles of Microbiology EAG 113-1 (C: 10/10/30)

Introduction to Microbiology (History, Classification, Nomenclature, Importance of Microbiology and Branches in Microbiology), Introduction to Prokaryotic Microorganisms (Structure and Function of Bacteria), Introduction to Eukaryotic Microorganisms (Structure and Function of Fungi), Introduction to Acellular Infectious Agents (Structure and Function of Virus), Microbial Growth (Reproduction, Growth Curve and Factors Influence the Growth of Microorganisms), Growth Control of Microorganisms (Methods of Measuring Microbial Growth, Methods of Controlling Microbial Growth and Aseptic Techniques), Microbial Metabolism [Microbial Nutrition, Energy Generating Patterns in Microorganism (Aerobic respiration, Anaerobic respiration and Fermentation) and Microbial Photosynthesis], Microbial Genetics (Genetic Elements in Microbes, Inheritance and Flow of Genetic Information- Conjugation, Transformation, Transduction), Role of Microorganisms in Agriculture

Principles of Crop Physiology EAG 114-2 (C: 24/12/64)

Introduction (Crop physiology vs plant physiology, Significance of studying crop physiology), Growth and Development [Growth curve and physiological basis of different growth stages, Growth indices (CGR/AGR/RGR/NAR/LAI/LAD), Growth analysis approaches, Crop development and its controlling factors], Radiation interception (Properties of radiation, Short and long wave radiation, Direct and diffuse radiation, Absorption and action spectra, Light absorbing pigments), Photosynthesis and dry matter accumulation [Different mechanisms (C3, C4 and CAM), Factors affecting photosynthesis and dry matter accumulation], Biomass partitioning and harvest index (HI) (Models of phloem transport, Phloem transport mechanism and its controlling factors, Variability of HI and physiological approaches to enhance HI), Respiration (Photorespiration and dark respiration, Factors influencing respiration, Effect of respiration on crop productivity), Plant water relations (Absorption and transport of water in crop plants, Transpiration and its regulation, Stomatal physiology), Root Physiology (Structure and functions in relation to the metabolic processes in the root), Physiological basis of crop yields and its improvements

Agricultural Meteorology and Climatology EAG 141-2 (C: 28/04/68)

Introduction (Course Content, Evaluation Methods and List of References), Scope and Applications of Agricultural Meteorology and Climatology, Solar radiation and its impact on Agriculture, Air temperature and its impact on Agriculture, Soil temperature and its impact on Agriculture, Relative Humidity and its impact on Agriculture, Air pressure, wind and their impact on Agriculture, Clouds, Precipitation and their impact on Agriculture, Recording of meteorological data from Meteorological and Agro-met stations , Meteorological instruments, Introduction

to Analysis of climate data, Climate classification and Climate of Sri Lanka, Rainfall patterns and Cultivation seasons of Si Lanka ,AgroEcological Regions of Sri Lanka, Global atmospheric and oceanic circulation (El Nino/ La Nina, Monsoon process),Air Pollution, Global warming, Climate change and Climatic hazards affecting agricultural production

Principles of Agronomy EAG 151-2 (C: 25/10/65)

Plant propagation, Nursery management, Plant density and geometry, Cropping Seasons and yield maximization (including root growth), Crop establishment techniques and cultural practices, Cropping systems, Weed biology, physiology and weed management

YEAR: 1 SEMESTER: 2

Refer BGE and ESD subjects offered in this semester under section "Course Structure" (Page No: 47-51).

Principles of Pathology EAG 115-1 (C: 10/10/30)

Concept of Plant Health and Plant Pathology, Causes of Plant Diseases, Symptoms Caused by Different Plant Pathogens, Specialized Techniques for Identification and Study of Disease Causing Agents and Plant Diseases, Disease Triangle, Disease Cycle, Plant Defense Mechanisms

Principles of Agricultural Economics EAG 131-3 (C: 30/30/90)

Introduction to Agricultural Economics, Consumer behavior, Demand and supply, Production and costs, Cost of production, Perfect competition, Monopoly, Monopolistic competition, Oligopoly, Introduction to Welfare Economics, Introduction to Fisheries Economics, Introduction to Environmental Economics, Introduction to Macroeconomics

Principles of Agricultural Engineering EAG 142-2 (C: 27/06/67)

Basic concepts of Mechanics: Vectors and Scalar Quantities, Equations of Motion, Acceleration and Different types of Acceleration, Mass and Inertia. Newton's laws and their applications, Structural Analysis of Beams and Trusses: compression and Tensile Forces, Free Body Diagrams, Basic Concepts in Trigonometry, Static Determinacy and Stability of Beams and Trusses, Basic Concepts of Fluid Mechanics: Properties of Fluids (density, viscosity, pressure), Liquid in motion (flow discharge, continuity of flow), Energy of a flowing fluid (Bernoulli's thermo and its application). Basic concepts in Thermodynamics: Types of system, Type of equilibrium, Heat

and Temperature, Specific Heat Capacity and Specific Latent Heat, States of Matter and Phase Transitions, Internal energy, The Laws of Thermodynamics (Zeroth and First Law) and applications. Psychometrics: Psychometric chart and parameters, Psychometric process and its applications

Principles of Seed Technology EAG 152-1 (C: 13/04/33)

Structure of seed, Seed classification, Seed viability and factors affecting seed viability, Testing methods of seed viability, Seed vigour, Seed dormancy and its importance, Types of seed dormancy, Treatments to overcome seed dormancy, Seed germination and types of germination, Seed production and factors affecting seed production, Hybrid seed production and seed act, Seed testing and certification

Biochemistry EAG 161-2 (C: 25/10/65)

Basic Concepts, Structures and Functions of Basic Biomolecules, Basics of enzymology, Metabolism and absorption of basic bio molecules, Chemistry of Vitamins and Other micro nutrients

Principles of Soil Science EAG 171-2 (C: 24/12/64)

Introduction, Major rocks and minerals, Rock weathering and soil formation, Soil profile, Soil properties, soil physical properties, soil chemical properties and soil biological properties, Soil classification using Soil Taxonomy (USDA method) and World Reference Base (WRB), Major soil types in Sri Lanka and their distribution.

YEAR: 2 SEMESTER: 1

Refer BGE and ESD subjects offered in this semester under section "Course Structure" (Page No: 47-51).

Basic Genetics EAG 211-2 (C: 25/10/65)

Introduction (History of Genetics), Mendelian Genetics, Gene, Cell Division (Mitosis and Meiosis), Mendelian Genetics Deviations, Pedigree Analysis and Sex Determination, Chromosome Mutations, Linkage and Genetic Maps, Quantitative Genetics, Population Genetics, Molecular Genetics (Replication, Transcription, Translation, Gene Expression and Regulation

Farm Machinery and Mechanization EAG 241-2 (C: 28/04/68)

Source and Type of farm power, Operation and maintenance of Two wheel tractor and four wheel tractor, Types of Engine and basic functions of Internal combustion engines, Fuel system and air cleaner, Cooling system, Lubrication system, Power

transmission and ignition system, Hydraulic system and water pump, Combine Harvesters and Pesticide Applicators,Land preparations and Farm Implements, Types of seeders and their applications, Seeder calibrations, Types of weeders and their applications,Equipment used in Dairy Industry (Milking machines, Chilling units, Cream separators, Homogenizers)

Cereals and Other Field Crop Production EAG 251-3 (C: 35/20/95)

Introduction to Rice production, Soil and climatic requirements, Morphological characteristics, Growth phases of rice plant, Types and varieties, Land preparation for and establishment techniques, Crop management, Harvesting and post-harvesting, Crop improvement and seed paddy production, Maize production, Millets (Kurakkan, Meneri and Thanahal), Root and tuber crops (Potato, Cassava, Sweet potato, Yams and aroids), Legume crops, Oil Crops, Fiber crops and Other field crops

Principles of Horticulture EAG 252-2 (C: 25/10/65)

Introduction to horticultural crops Present status and constraints in growing horticultural crops, Vernalization and its influence, Photoperiodic interactions, Phytohormones and their applications in modern horticulture industry, Phenological cycle of horticultural crops, Pruning and growth control, Introduction to training, Fruit development and fruit set.

Farming Systems EAG 253-1 (C: 10/10/30)

Introduction, Factors affecting on farming system development, Classification of farming systems and major types (Chena cultivation, Dry land farming system, Lowland farming systems, Upland farming systems, Kandyan home gardening, Organic farming system, Aquaculture based farming systems, Tree based farming systems, Coconut based farming systems, Precision farming systems, etc.), Integrated farming systems, Sustainable agriculture and farming systems.

Principles of Food Science EAG 261-1 (C: 12/06/32)

Introduction to food science, Food constituents, Factors that affect on food deterioration and spoilage, Food additives and their functions, Principles of food preservation and food preservation methods, Effect of processing on quality and nutritive value of food, Browning reactions of foods, Food safety and control of hazards, Quality attributes of foods, Food-borne diseases and their prevention

Plant Nutrition and Soil Fertility Management EAG 271-2 (C: 24/12/64)

Introduction, Dynamics of essential elements in plant nutrition, Nutrient mobility in soil, Nutrient uptake mechanisms, Deficiency symptoms of essential plant

nutrients, Their availability in soil, Uptake mechanisms, Sources of plant nutrients, their application techniques and effects, The carbon and nitrogen cycles, Soil fertility management and its importance, Estimation of the soil fertility, Types of fertilizers, Calculation and formulations related to fertilizers, Specific fertilizer types, Soil fertility assessment in relation to major crops

Basics in Animal Science ANS 271-2 (C: 25/10/65)

Domestication of farm animals, Utilization of domestic animals in modern world, Importance of Livestock industry, Present status of livestock industry in Sri Lanka, Types of farm animal species, breeds and their characteristics, Feeds and Feeding, Cattle & Buffalo Management, Poultry Management, Swine Management, Aquaculture, Integrated farming systems

YEAR: 2 SEMESTER: 2

Refer BGE and ESD subjects offered in this semester under section "Course Structure" (Page No: 47-51).

Basics in Statistics EAG 201-1 (C: 00/15/35)

Elements of probability theory, Random variable and Probability, Introduction to Inference Sampling distribution & Confidence interval, Hypothesis testing, type I & type II error, Correlation and Chi-square test, Regression analysis and Goodness-of-fit test

Crop Pest and Disease Management EAG 212-2 (C: 20/20/60)

Integrated insect Pest Management, Integrated Disease Management, Integrated Weed Management, Major Pests and Diseases of Horticultural Crops, Sterile Insect Technique, Residual effect of agrochemicals

Agribusiness Management EAG 221-2 (C: 25/10/35)

Introduction to Agribusiness Management, Functions of management , Agribusiness planning, Strategic business planning, Marketing planning, Decision making making areas in agribusiness, Forms of business organizations, Record keeping and inventory management, Financial planning process, introduction to basic accounting statements, Financial analysis , Investment Appraisal, Agriculture risk management, Farm site selection, Introduction to Entrepreneurship

Irrigation and Water Management EAG 242-2 (C: 27/06/67)

Introduction to the course, evaluation and references, Importance of irrigation and water management in agriculture, Critical moisture stages and Moisture extraction

pattern of the root system, Estimation of Evapo-transpiration, Irrigation scheduling and related calculations, Irrigation Efficiencies, Water application methods, Sprinkler and drip methods of irrigation, Drainage water management, Rainwater harvesting, Groundwater management

Fruit and Vegetable Production EAG 254-2 (C: 20/20/60)

Introduction to fruit production, Orchard establishment and Management, Economically important fruit crops in Sri Lanka (Selected Fruit Crops - varieties, cultivation, aftercare management, postharvest technology), Introduction to vegetable production, Vegetable production systems, Locally available vegetable crops (Selected vegetable crops - varieties, cultivation, aftercare management, postharvest technology)

Plantation Crop Production and Processing EAG 255-3 (C: 35/20/95)

Coconut : Climatic and soil conditions , Planting densities and systems , Nursery management , Lining, Field establishment, Infilling, Nutrient management of, Irrigation practices, Soil and soil-moisture conservation, Pest and disease management, Coconut based farming systems, Introduction to processing of kernel, non- kernel and husk & shell based products, Rubber : Nursery management of rubber, Field establishment, Immature upkeep of rubber, Aftercare management, Latex harvesting, Raw rubber processing, Tea: morphology of tea, tea industry in Sri Lanka, production and consumption trends and Soil and climatic conditions, Suitable tea cultivars, Nursery Management, Land selection and land preparation, Soil rehabilitation/Establishment of shade, Field planting, fertilizer application and green manure crops, cover crops, Plucking, pruning , Major pests and diseases and management, Tea Processing, Sugarcane: Cultivation and management, Harvesting & processing ,Weed, Pest and disease management

Principles of Postharvest Technology EAG 262-1 (C: 12/06/32)

Introduction to postharvest technology, General characteristics of perishables, Pre-harvest factors that affect on quality at harvest, Maturity indices and harvesting of perishables, Postharvest losses and loss assessment, Principles of postharvest physiology, Quality control of fresh produce

Soil and Water Conservation Technology EAG 272-1 (C: 12/06/32)

Introduction, Climate and its effects on soil, Types of soil degradation and their impacts on agricultural production, Deterioration of soil quality, Soil erosivity, Erodibility, Causes and control of soil erosion, Main soil improvement/conservation techniques, Soil conservation act, Incentives provided for soil conservation

YEAR: 3 SEMESTER: 1

Refer BGE and ESD subjects offered in this semester under section "Course Structure" (Page No: 47-51).

MAJORING IN AGRICULTURAL PRODUCTION TECHNOLOGY

Experimental Designs EAG 301-1 (C: 00/30/20)

Basic concepts in Experimental design, Analysis of Variance (ANOVA), Complete Randomized Design, Randomized Complete Block Design, Latin Square Design, Analysis of Covariance, and Factorial Design

Advanced Agricultural Microbiology EAG 311-2 (C: 20/20/60)

Introduction, Food Microbiology, Water Microbiology, Soil Microbiology [Microorganisms in Soil, Plant-Microbe Interaction (Mycorrhizae, Plant Growth Promoting Rhizobacteria and their Effects on Plant Growth], Environmental Microbiology [Microorganisms in Biogeochemical Cycles, Use of Microorganisms as Bio-indicator, Biosensors and Bio-control Agents, Principles of Biological Treatments (Bioremediation)], Microbiology in Bio fertilizers and Biogas Production

Introduction to Biotechnology EAG 312-2 (C: 22/16/62)

Introduction to Biotechnology (History and Development), Genetic Engineering Techniques and Tools and Potential Applications, Basics of Prokaryotic and Eukaryotic Genomes, DNA Isolation, quantification and Fractionation, Biotechnological Techniques: Blotting Techniques and Labeling Nucleic Acids, Restriction Enzymes, Vectors and DNA Libraries, Polymerase Chain Reaction (PCR), Synthesizing and Sequencing of DNA, Gene Cloning, Gene Transfer into Bacteria, Plant and Animal cells, DNA Fingerprinting, Bioinformatics

Pesticide Formulation and Application EAG 313-2 (C: 30/00/70)

Preparation and performance of solid formulations, Preparation and performance of liquid formulations, Characteristics of solid formulations and liquid formulations, Major formulation types, Machines and equipment used in pesticide application, Pesticide dosage calculations

Agricultural Technology Dissemination EAG 324-2 (C: 20/20/60)

Introduction to agricultural Extension, Definition, Objectives, Human Behavior, Socio Economic aspects of farming, Principles of Education, Adult Education, Principles of Learning, Effective Communication, Motivation for Extension, Leadership

in Extension, Principles of Effective Extension Program, Extension Teaching Methodologies, Adoption & Diffusion of Technologies, Role of Extension Agent, Planning & Evaluation of Extension Program, Challenges for Agriculture Extension

Advanced Irrigation Technologies EAG 341-1 (C: 13/04/33)

Introduction to the course, evaluation and references, Hydraulics of Irrigation, Irrigation Automation, Estimation of irrigation requirement, Selection of suitable irrigation system, Components of irrigation system, Design, Installation, Operation and Maintenance of irrigation system

Geographic Information Systems and Remote Sensing EAG 342-2 (C: 20/20/60)

Part I GIS, Overview (content and evaluation methods),Map, Types of maps, scale, characteristics, coordinate systems and projections, Introduction to GIS and information systems(definitions, concepts and functions, Introducing Geographical entities, Attribute data, map features, and GIS theme, Data models used in GIS and their characteristics, GIS Applications, Part II Remote Sensing, What is Remote Sensing? (definitions and concepts and the components), Electromagnetic Spectrum and its interactions, Remote Sensing Systems, Platforms, Signals and Sensors and Scanning Systems, Airborne and space borne sensor systems, advantages and disadvantages, Applications of Remote Sensing, GPS system and its architecture

Phyto-Chemistry and Extraction Technology EAG 343-2(C: 25/10/65)

Introduction to secondary metabolites, Structure and functions of major classes of secondary metabolites, Biosynthetic pathways, Extraction techniques and Screening for biochemical Properties, Value addition to phyto chemicals-novel trends and approaches

Agro Ecology EAG 351-1 (C: 15/00/35)

Introduction to Ecology and Crop Ecology, Autecology and synecology, Concept of Natural Eco System and agro ecosystem, Community structure, Concept of ecological niche, Inter population interactions of agro ecosystem, Intra population interactions of agro ecosystem, Properties of populations & population dynamics, Agro ecosystem productivity, Trophic systems in Agriculture, Dynamics of crop communities and agro ecosystem management, Nutrient cycling, Global cycles and human impacts, Ecological aspects of conventional & Sustainable agro ecosystems

Field Training on Crop Production EAG 381-2 (C: 00/80/20)

Identification of nutrient deficiencies and make a recommendation to correct a nutrient deficiency, Organic Crop Production, Vegetative propagation, Familiarizing in crop animal based farming systems, Commercial Seed & Hybrid seed production

programme, Seed testing and certification, Designing and preparation of nurseries, Designs and structures of different types Controlled Environment Agriculture, Rice and Field Crop Production, Fruit and vegetable production, Crop Pest and Disease Management, Farm planning and resources management, Farm Mechanization Training Centre (FMTC) - Anuradhapura, Irrigation scheduling, Different methods of irrigation, Drainage water management, Source and types of farm power , Principles of basic functions of Internal combustion engines, Power requirements of the tillage tools, Maintenance and operation of farm machinery for efficient use, Identification of farm machinery, Tractors (4 WT, 2 WT), Combine harvester and other farm machines, Micro irrigation and solar power drip Irrigation system

OPTIONAL SUBJECTS

Agricultural Entrepreneurship EAG 321-2 (O: 25/10/65)

Introduction and historical perspective, Entrepreneurship in individual perspective, Entrepreneurship in organizational perspective, Innovation and creativity in entrepreneurship, Ethics and CSR in entrepreneurship, Development of an entrepreneurial business plan, Assessment of entrepreneurial ventures, Women entrepreneurship, Managing and succession of entrepreneurial ventures, Role of Entrepreneurship in Agriculture

Agricultural Marketing and Price Analysis EAG 323-2 (O: 30/00/70)

Agri Produce Marketing, Marketed and marketable surplus, Classification of agricultural markets, Marketing costs, Product/Production Based Approaches to Improve the Profitability of Producer, Finding assured market for agri. Products, Market price, Why market price fluctuates?, Ways and objectives of pricing, Demand components of agricultural products, Market supply, risk and uncertainty, supply response functions, Marketing margins, Marketing costs and size of margins, Seasonal variation in price, Price variations through time, Vertical coordination and contracting agriculture, Trade models, recursive models, Shift-share analysis

Advanced Postharvest Technology EAG 361-2 (O: 25/10/65)

Growth and maturation, Morphological, anatomical, physical and chemical changes during maturation, Changes during fruit ripening and flavor development, General packing house operations, Transportation and storage of fresh produce, Cold chain management, Ethylene in postharvest technology, Induced ripening of fruits, Postharvest diseases and disorders, Minimization of postharvest losses, Postharvest handling systems for selected crops

MAJORING IN ENTREPRENEURIAL AGRICULTURE

Agricultural Entrepreneurship EAG 321-2 (C: 25/10/65)

Introduction and historical perspective, Entrepreneurship in individual perspective, Entrepreneurship in organizational perspective, Innovation and creativity in entrepreneurship, Ethics and CSR in entrepreneurship, Development of an entrepreneurial business plan, Assessment of entrepreneurial ventures, Women entrepreneurship, Managing and succession of entrepreneurial ventures, Role of Entrepreneurship in Agriculture

Agricultural Information Management EAG 322-2 (C: 25/10/65)

Introduction to Management Information System, Use of information technology for competitive advantage, Historical perspective and evolution of information technology, System theory, Knowledge management principles, Introduction to data base management, Computer based information systems (Decision support systems, accounting information systems, management information systems, financial information systems, human resource information systems, marketing information system, information resources information system), Applications of MIS in agriculture

Agricultural Marketing and Price Analysis EAG 323-2 (C: 30/00/70)

Agri Produce Marketing, Marketed and marketable surplus, Classification of agricultural markets, Marketing costs, Product/Production Based Approaches to Improve the Profitability of Producer, Finding assured market for agri. Products, Market price, Why market price fluctuates?, Ways and objectives of pricing, Demand components of agricultural products, Market supply, risk and uncertainty, supply response functions, Marketing margins, Marketing costs and size of margins, Seasonal variation in price, Price variations through time, Vertical coordination and contracting agriculture, Trade models, recursive models, Shift-share analysis

Agricultural Technology Dissemination EAG 324-2(C: 20/20/60)

Introduction to agricultural Extension, Definition, Objectives, Human Behavior, Socio Economic aspects of farming, Principles of Education, Adult Education, Principles of Learning, Effective Communication, Motivation for Extension, Leadership in Extension, Principles of Effective Extension Program, Extension Teaching Methodologies, Adoption &Diffusion of Technologies, Role of Extension Agent, Planning & Evaluation of Extension Program, Challenges for Agriculture Extension

Environment and Resource Economics EAG 331-3 (C: 30/30/90)

Nature and scope of production relations, Normative criteria for decision making, Introduction to environmental economics, Property Rights, externalities and public goods, Concepts in Production functions and costs, Concepts of welfare economics, Fisheries economics, Forest economics, Water resources economics, Economics non- renewable resources- exhaustible resources, Labor Economics and Green Economics

Macroeconomics EAG 332-2 (C: 25/10/65)

National Income Accounting, Income & Spending, Economic Growth & Business Cycles, Goods Market & IS Curve, Money Market & LM Curve, IS-LM Model, Fiscal Policy, Monetary Policy, Inflation & Unemployment, International Linkages, Mundel Fleming Model

Geographic Information Systems and Remote Sensing EAG 342-2 (C: 20/20/60)

Part I GIS, Overview (content and evaluation methods),Map, Types of maps, scale, characteristics, coordinate systems and projections, Introduction to GIS and information systems(definitions, concepts and functions, Introducing Geographical entities, Attribute data, map features, and GIS theme, Data models used in GIS and their characteristics, GIS Applications, Part II Remote Sensing, What is Remote Sensing? (definitions and concepts and the components),Electromagnetic Spectrum and its interactions, Remote Sensing Systems, Platforms, Signals and Sensors and Scanning Systems, Airborne and space borne sensor systems, advantages and disadvantages, Applications of Remote Sensing, GPS system and its architecture

Field Training on Crop Production EAG 381-2 (C: 00/80/20)

Identification of nutrient deficiencies and make a recommendation to correct a nutrient deficiency, Organic Crop Production, Vegetative propagation,Familiarizing in crop animal based farming systems, Commercial Seed & Hybrid seed production programme, Seed testing and certification, Designing and preparation of nurseries, Designs and structures of different types Controlled Environment Agriculture,Rice and Field Crop Production, Fruit and vegetable production, Crop Pest and Disease Management, Farm planning and resources management, Farm Mechanization Training Centre (FMTC) - Anuradhapura, Irrigation scheduling, Different methods of irrigation, Drainage water management, Source and types of farm power , Principles of basic functions of Internal combustion engines, Power requirements of the tillage tools, Maintenance and operation of farm machinery for efficient use, Identification of farm machinery, Tractors (4 WT, 2 WT), Combine harvester and other farm machines, Micro irrigation and solar power drip Irrigation system.

OPTIONAL SUBJECTS

Experimental Designs EAG 301-1 (O: 00/30/20)

Basic concepts in Experimental design, Analysis of Variance (ANOVA), Complete Randomized Design, Randomized Complete Block Design, Latin Square Design, Analysis of Covariance, and Factorial Design.

Pesticide Formulation and Application EAG 313-2 (O: 30/00/70)

Preparation and performance of solid formulations, Preparation and performance of liquid formulations, Characteristics of solid formulations and liquid formulations, Major formulation types, Machines and equipment used in pesticide application, Pesticide dosage calculations

Business Communication EAG 320-2 (O: 30/00/70)

Communications Foundations, Writing Process Creating Business Messages (Organizing and Perfecting Business Messages), Improving Writing Techniques, Workplace Communication Electronic Messages and Memorandums, Direct Letters and Messaging, Persuasive Messages Negative Messages, Business Reporting Informal Reports (Business Proposals), Formal Business Reports, Business Presentations, Speaking and Technology Effective Oral Presentations, Employment Communication Resumes and Cover Letters

Farm Accountancy EAG 333-2 (O: 30/00/70)

Introduction to Accounting, Conceptual Frame Work of Accounting, Basic Accounting Procedures I Double Entry System of Book-Keeping, Basic Accounting Procedures II – Journal, Basic Accounting Procedures III – Ledger, Subsidiary Books I – Special Purpose Books, Subsidiary Books II – Cash Book, Subsidiary Books III – Petty Cash Book, Bank Reconciliation Statement, Trial Balance and Rectification of Errors, Capital and Revenue Transactions, Final Accounts

Advanced Postharvest Technology EAG 361-2 (O: 25/10/65)

Growth and maturation, Morphological, anatomical, physical and chemical changes during maturation, Changes during fruit ripening and flavor development, General packing house operations, Transportation and storage of fresh produce, Cold chain management, Ethylene in postharvest technology, Induced ripening of fruits, Postharvest diseases and disorders, Minimization of postharvest losses, Postharvest handling systems for selected crops

MAJORING IN FOOD PROCESSING TECHNOLOGY

Animal Product Processing Technology ANS 371-3 (C: 35/20/95)

Basic physicochemical & microbiological properties of milk & milk constituents, Milk constituents and composition of milk, Mechanism of milk coagulation, Changes in milk and milk constituents during storage and heat treatment, Processing of fluid milk: Cream separation, fat standardization and homogenization, milk pasteurization, sterilization and UHT treatment, Manufacture of value added milk products: Yoghurt, curd, butter and ghee, Structure of muscle and associated tissues, Chemical composition of muscle and its determinants, Muscle contraction and post mortem conversion of muscle in to meat, Processing of broiler chicken, Manufacture of processed meat products: Classification, meat and non-meat ingredients, processing of different meat products, Meat quality traits, Manufacture of value added fish and egg products, Fish spoilage and poisoning, Nutritive value of animal products

Experimental Designs EAG 301-1 (C: 00/30/20)

Basic concepts in Experimental design, Analysis of Variance (ANOVA), Complete Randomized Design, Randomized Complete Block Design, Latin Square Design, Analysis of Covariance and Factorial Design

Advanced Agricultural Microbiology EAG 311-2 (C: 20/20/60)

Introduction, Food Microbiology, Water Microbiology, Soil Microbiology [Microorganisms in Soil, Plant-Microbe Interaction (Mycorrhizae, Plant Growth Promoting Rhizobacteria and their Effects on Plant Growth], Environmental Microbiology [Microorganisms in Biogeochemical Cycles, Use of Microorganisms as Bio-indicator, Biosensors and Bio-control Agents, Principles of Biological Treatments (Bioremediation)], Microbiology in Bio fertilizers and Biogas Production

Introduction to Biotechnology EAG 312-2 (C: 22/16/62)

Introduction to Biotechnology (History and Development), Genetic Engineering Techniques and Tools and Potential Applications, Basics of Prokaryotic and Eukaryotic Genomes, DNA Isolation , quantification and fractionation, Biotechnological Techniques: Blotting Techniques and Labeling Nucleic Acids, Restriction Enzymes, Vectors and DNA Libraries, Polymerase Chain Reaction (PCR), Synthesizing and Sequencing of DNA, Gene Cloning, Gene Transfer into Bacteria, Plant and Animal cells, DNA Fingerprinting, Bioinformatics

Geographic Information Systems and Remote Sensing EAG 342-2 (C: 20/20/60)

Part I GIS, Overview (content and evaluation methods),Map, Types of maps, scale, characteristics, coordinate systems and projections, Introduction to GIS and information systems(definitions, concepts and functions, Introducing Geographical entities, Attribute data, map features, and GIS theme, Data models used in GIS and their characteristics, GIS Applications, Part II Remote Sensing, What is Remote Sensing? (definitions and concepts and the components),Electromagnetic Spectrum and its interactions, Remote Sensing Systems, Platforms, Signals and Sensors and Scanning Systems, Airborne and space borne sensor systems, advantages and disadvantages, Applications of Remote Sensing, GPS system and its architecture

Phyto-Chemistry and Extraction Technology EAG 343-2 (C: 25/10/65)

Introduction to secondary metabolites, Structure and functions of major classes of secondary metabolites, Biosynthetic pathways, Extraction techniques and Screening for biochemical Properties, Value addition to Phyto chemicals, novel trends and approaches

Advanced Postharvest Technology EAG 361-2 (C: 25/10/65)

Growth and maturation, Morphological, anatomical, physical and chemical changes during maturation, Changes during fruit ripening and flavour development, General packing house operations, Transportation and storage of fresh produce, Cold chain management, Ethylene in postharvest technology, Induced ripening of fruits, Postharvest diseases and disorders, Minimization of postharvest losses, Postharvest handling systems for selected crops

Food Chemistry EAG 362-2 (C: 30/00/70)

Introduction to food chemistry (Cellular basis of foods), Water (Properties of water and ice, water activity and water migration) , Enzymes (The roles of enzymes in food production, processing, and quality attributes) Fruits and vegetables (ripening and storage quality, artificial ripening), The roles of carbohydrates in food structure, color, flavor, and texture, The roles of lipids in food structure, color, flavor, and texture, The roles of proteins in food structure, color, flavor, and texture, Physical and chemical deterioration of food (Enzymatic and non-enzymatic browning reactions; influences on color , flavor, and texture, lipid oxidation and rancidity, chemical interactions, temperature, RH, light and mechanical damage) Chemistry of Food additives ,flavor and preservatives, Biochemical substances- nutraceuticals and toxicants food systems [dispersed systems (Foam, emulsions and suspensions, Chemical - Physical Interactions between Major Food Constituents)

Field Training on Crop Production EAG 381-2 (C: 00/80/20)

Identification of nutrient deficiencies and make a recommendation to correct a nutrient deficiency, Organic Crop Production, Vegetative propagation, Familiarizing in crop animal based farming systems, Commercial Seed & Hybrid seed production programme, Seed testing and certification, Designing and preparation of nurseries, Designs and structures of different types Controlled Environment Agriculture, Rice and Field Crop Production, Fruit and vegetable production, Crop Pest and Disease Management, Farm planning and resources management, Farm Mechanization Training Centre (FMTC) - Anuradhapura, Irrigation scheduling, Different methods of irrigation, Drainage water management, Source and types of farm power , Principles of basic functions of Internal combustion engines, Power requirements of the tillage tools, Maintenance and operation of farm machinery for efficient use, Identification of farm machinery, Tractors (4 WT, 2 WT), Combine harvester and other farm machines, Micro irrigation and solar power drip Irrigation system

OPTIONAL SUBJECTS

Agricultural Entrepreneurship EAG 321-2 (O: 25/10/65)

Introduction and historical perspective, Entrepreneurship in individual perspective, Entrepreneurship in organizational perspective, Innovation and creativity in entrepreneurship, Ethics and CSR in entrepreneurship, Development of an entrepreneurial business plan, Assessment of entrepreneurial ventures, Women entrepreneurship, Managing and succession of entrepreneurial ventures, Role of Entrepreneurship in Agriculture

Agricultural Marketing and Price Analysis EAG 323-2 (O: 30/00/70)

Agri Produce Marketing, Marketed and marketable surplus, Classification of agricultural markets, Marketing costs, Product/Production Based Approaches to Improve the Profitability of Producer, Finding assured market for agri. Products, Market price, Why market price fluctuates?, Ways and objectives of pricing, Demand components of agricultural products, Market supply, risk and uncertainty, supply response functions, Marketing margins, Marketing costs and size of margins, Seasonal variation in price, Price variations through time, Vertical coordination and contracting agriculture, Trade models, recursive models, Shift-share analysis

Agricultural Technology Dissemination EAG 324-2 (O: 20/20/60)

Introduction to agricultural Extension, Definition, Objectives, Human Behavior, Socio Economic aspects of farming, Principles of Education, Adult Education, Principles of Learning, Effective Communication, Motivation for Extension, Leadership in Extension, Principles of Effective Extension Program, Extension Teaching

Methodologies, Adoption & Diffusion of Technologies, Role of Extension Agent, Planning & Evaluation of Extension Program, Challenges for Agriculture Extension

YEAR: 3 SEMESTER: 2

MAJORING IN AGRICULTURAL PRODUCTION TECHNOLOGY

Ecophysiology EAG 314-2 (C: 27/06/67)

Introduction to Ecophysiology, Drought stress (causes, effects and adaptations), Heat stress and cold stress, (causes, effects and adaptations), Water- logging stress (causes, effects and adaptations),The effects of water-logging on crops and morpho-physiological adaptations to water-logging, Crop adaptations to temperature stress (Thermo tolerance and cold stress), Soil and water salinity, High radiation stress, The effects of elevated CO2 on plant functioning, Eco-physiological aspects of allelopathy

Genetic Improvement of Crops EAG 315-2 (C: 27/06/67)

History and Milestones, Breeding Objectives, Crop Germplasm, Breeding Techniques, Selection, Hybridization, Breeding methods of Self Pollinated and Cross Pollinated Crops, Genetic Improvements in Asexually Propagated Crops, Breeding for Heterosis and Resistance to Pests and Diseases, and for Wider Adaptability and Stability, Application of In Vitro Techniques in Cultivar Development, Mutation Breeding, Molecular Breeding, Participatory plant breeding Procedure to Release Varieties, Intellectual Property Rights of Breeders and Seed Act, Application of Breeding Techniques and Crop cultivar development

Plant Tissue Culture EAG 316-2 (C: 25/10/65)

Introduction to plant tissue culture, Conditions for in vitro propagation, Stages in in vitro propagation, Importance of micro-propagation, Applications of tissue culture, Haploid plant production, In vitro fertilization, Mutation breeding, Somatic hybridization, Production of secondary metabolites from cell cultures

Applications of GIS and Remote Sensing EAG 344-1 (C: 10/10/30)

Applications of GIS and Remote sensing (introducing the possible application areas, especially in agriculture), Currently operating satellites and their applications, Spectral characteristics of spatial properties ,Signature Spectra, and sensor characteristics and selection of sensors, Digital image processing and interpretation (supervised and unsupervised classification), NDVI and LAI applications and other

Indices, GIS, Functionality and challenges, Overlay, proximity and spatial analysis methods in GIS, GIS Application/ Land use mapping, land suitability mapping etc.

Commercial Seed Production and Nursery Management EAG 352-2 (C: 25/10/65)

Introduction to seed production, Seed certification, Vegetable seed production, Introduction to commercial nursery; aims, characters and classification, Designing and components of commercial nursery, Selection of potting mixtures and different types, Water management in nursery, Nutritional management in nursery, Weed management in nursery, Pest & disease management in nursery

Controlled Environment Agriculture EAG 353-2 (C: 20/20/60)

Introduction to Controlled Environment Agriculture (Definition, different types, advantages and limitations), Environment management in CEA, Selection of crops and varieties for CEA, Various structures used in CEA, Growing systems in CEA, Nursery Techniques for CEA, Cultural practices under CEA (Artificial pollination, Pruning and Training, Advanced nutrient management, Harvesting techniques), Pest and Disease management, Nutritional and Physiological disorders in CEA, Equipment for CEA, Automation in CEA

Medicinal Plants Production Technology EAG 354-2 (C: 26/08/66)

Medicinal plants and human health and therapeutic uses, Current trends and potentials for herbal industry in Sri Lanka, Taxonomy and classification of medicinal plants and identification, Conservation of medicinal plants, Cultivation of medicinal plants (Propagation, Nursery management, Field planting, Management practices, Harvesting, Post-harvest handling and storage), Value added products and marketing of value added products, Basic analysis of plants and herbal products (Chromatography, Spectrophotometer)

Organic Agriculture EAG 355-2 (C: 22/16/62)

Status of organic agriculture and IFOAM regulations, Organic Farming Vs Conventional Farming, Waste Management in the Farm (Composting, Biogas Production and Green manuring, bio charcoal production), Liquid Organic fertilizers, Bio fertilizer production, Biodynamic farming, Organic animal husbandry, Pest and Weed Management in Organic Farming, Certification and Marketing of Organic Products, Organizational Responsible for Controlling and Certification, Quality Standards & Packaging Requirements, Marketing Of Organic Products, Future of Organic Farming

Spice and Beverage Crop Production and Value Addition EAG 356-2 (C: 22/16/62)

Introduction, importance, characteristics and classification of spice and beverage crops, Climatic and soil requirements, Varieties, Main constituents of spices and beverage crops, Production of planting materials, Field planting, Aftercare practices management , Postharvest processing, Flavor and aroma development, Drying of spices and beverage crops, Spices and beverage crops based food additives, Processing of essential oils and Oleoresins, Value added spices and beverage based products, Quality parameters, Grading and international standards, Market opportunities and potentials.

OPTIONAL SUBJECTS

Agri-Tourism EAG 325-1 (O: 15/00/35)

Introduction to the agri-tourism , Benefits and costs of agri-tourism, Demand for agri-tourism, Visitor Expectations for an agri-tourism Destination, Starting an agri-tourism business, Income Sources and new type of offers in agri-tourism, Marketing an agri-tourism Enterprise, Planning and managing agri-tourism, Agri-tourism-general issues, Sustainable agri-tourism development

Agro-Food Supply Chain Management EAG 326-2 (O: 25/10/65)

Key drivers, problems and challenges in agri-food business, Supply chain definitions, advantages of Supply Chain Management, Supply Chain Management and Logistics Management, Performance drivers of Supply Chain Management, Evolving structure of Supply Chains, Aligning supply chains with business strategy, Strategic supply chain mapping, Challenges in Agri-food Supply Chain Management with globalization, Developing SCM approach to horticulture supply chains for small rural farmers

Farm Management EAG 327-2 (O: 30/00/70)

Introduction to Farm Management, Farm planning, Budgeting [Types of budgets (whole farm budget, enterprise budget, cash flow budget, partial budget)], Budget development, Budgets, productivity, competition and structural changes, Gross-margin budget, breakeven analysis, Acquiring resources for management Capital and the use of credit, Land- control and use, Human resource management, Machinery management, Marketing Management, Production and Operations Management, Quality Management and Control, Managing risk and uncertainty

Farm Financial Management EAG 337-2 (O: 25/10/65)

Introduction to farm Financial Management, Time value of money, Financial planning (risks, financial projections and cash planning), Financial preparation (operations and financial budgets), Analysis and interpretation of financial statements, Long

term financial planning and growth (capital budgeting), Short term financial planning (working capital management)

Agricultural Policies EAG 339-1 (O: 13/04/33)

Introduction to Agricultural Policies, Agricultural policies and laws related to land use, Plant imports and exports, Phyto-sanitary regulations, Agrochemical imports and use, Subsidiary schemes in agriculture, Impact of Subsidiary schemes in agriculture, Government Intervention on Agricultural Markets and Trade Policies

Food Preservation Technology EAG 364-2 (O: 25/10/65)

Introduction to food preservation, Importance of agro-food processing/preservation, Principles of raw material preparation, Water activity and food preservation, Unit operations in food preservation, Dehydration, Thermal preservation, Low temperature preservation, Food irradiation, Fermentation as a preservation method, Preservation with sugar, Aseptic processing, Hurdle technology, Current trends in agro food process technology

MAJORING IN ENTREPRENEURIAL AGRICULTURE

Agri-Tourism EAG 325-1 (C: 15/00/35)

Introduction to the agri-tourism , Benefits and costs of agri-tourism, Demand for agri-tourism, Visitor Expectations for an agri-tourism Destination, Starting an agri-tourism business, Income Sources and new type of offers in agri-tourism, Marketing an agri-tourism Enterprise, Planning and managing agri-tourism, Agri-tourism-general issues, Sustainable agri-tourism development

Agro-Food Supply Chain Management EAG 326-2 (C: 25/10/65)

Key drivers, problems and challenges in agri-food business, Supply chain definitions, advantages of Supply Chain Management, Supply Chain Management and Logistics Management, Performance drivers of Supply Chain Management, Evolving structure of Supply Chains, Aligning supply chains with business strategy, Strategic supply chain mapping, Challenges in Agri-food Supply Chain Management with globalization, Developing SCM approach to horticulture supply chains for small rural farmers

Farm Management EAG 327-2 (C: 30/00/70)

Introduction to Farm Management, Farm planning, Budgeting [Types of budgets (whole farm budget, enterprise budget, cash flow budget, partial budget)], Budget development, Budgets, productivity, competition and structural changes, Gross-margin budget, breakeven analysis, Acquiring resources for management Capital and the use of credit, Land- control and use, Human resource management, Machinery

management, Marketing Management, Production and Operations Management, Quality Management and Control, Managing risk and uncertainty

Innovation and Creativity Management EAG 238-1 (C: 13/04/33)

Role of creativity and innovation in competitive environment, Defining creativity and innovation, Measurement of creativity, Facets to creativity, Creative problem solving, Personality traits of creative individual, Boosting creativity in organizational context, Defining innovation, approaches to innovations, Strategic innovation management, Diffusion of innovations

Strategic Management EAG 329-2 (C: 25/10/65)

The nature of strategic management and its process, Environmental scanning and industry analysis, Internal scanning and organizational analysis, Strategic direction, Strategic formulation- business level strategy, Corporate level strategy, Functional level strategy, Strategic choice, Strategy implementation, Evaluation and control

Business Law EAG 334-1 (C: 25/10/15)

Introduction to business law, Law relating to associations (companies, corporations and partnerships), Contract law, Sales of goods, Law of Agency, Principles of consumer credit, Consumer protection, Negotiable instruments (bills of exchange and cheques)

Development Economics EAG 335-1 (C: 25/10/15)

Evolution of development economics, Labor market, unemployment and development, Land market and development, International trade and development, Poverty inequality and development, Population growth and development, Urbanization, Human capital and rural urban migration, Demographic transition, Role of agriculture in economic development, Role of state in economic development, Inter-Sectoral complementarities and coordination failures, Environment, climate change and development, Green Economy and Development

Environmental Valuation EAG 336-2 (C: 22/16/62)

The economy, environment and valuation, Economic theory and environmental valuation, Environmental method approaches, Valuing environmental inputs into the production of marketed good, Non-demand curve methods, Travel cost method, Hedonic pricing methods, Contingent valuation, Choice experiments, Benefit transfer, Criticisms of stated preference methods and alternatives

Farm Financial Management EAG 337-2 (C: 25/10/65)

Introduction to farm Financial Management, Time value of money, Financial planning (risks, financial projections and cash planning), Financial preparation (operations and financial budgets), Analysis and interpretation of financial statements, Long term financial planning and growth (capital budgeting), Short term financial planning (working capital management)

International Marketing EAG 338-2 (C: 25/10/65)

Introduction to Marketing and International Marketing [EPRG framework, Historical development of International Marketing, International marketing environment (Macro and micro environment)], International Business Intelligence and Market Research, International market entry strategies, International marketing mix, Marketing mix standardization and adaptation, International product strategies, International pricing strategies, international promortion strategies, International distribution strategies

OPTIONAL SUBJECTS

Agricultural Policies EAG 339-1 (O: 13/04/33)

Introduction to Agricultural Policies, Agricultural policies and laws related to land use, Plant imports and exports, Phyto-sanitary regulations, Agrochemical imports and use, Subsidiary schemes in agriculture, Impact of Subsidiary schemes in agriculture, Government Intervention on Agricultural Markets and Trade Policies

Applications of GIS and Remote Sensing EAG 344-1 (O: 10/10/30)

Applications of GIS and Remote sensing (introducing the possible application areas, especially in agriculture), Currently operating satellites and their applications, Spectral characteristics of spatial properties, Signature Spectra, and sensor characteristics and selection of sensors, Digital image processing and interpretation (supervised and unsupervised classification), NDVI and LAI applications and other Indices, GIS, Functionality and challenges, Overlay, proximity and spatial analysis methods in GIS, GIS Application/ Land use mapping, land suitability mapping etc

Food Preservation Technology EAG 364-2 (O: 25/10/65)

Introduction to food preservation, Importance of agro-food processing/preservation, Principles of raw material preparation, Water activity and food preservation, Unit operations in food preservation, Dehydration, Thermal preservation, Low temperature preservation, Food irradiation, Fermentation as a preservation

method, Preservation with sugar, Aseptic processing, Hurdle technology, Current trends in agro food process technology

MAJORING IN FOOD PROCESSING TECHNOLOGY

Food Microbiology and Biotechnology EAG 317-2 (C: 20/20/60)

Introduction, Role of Microorganisms, Metabolic Processes of Industrially Important Microorganisms in Food and Beverage Industry, Microbiological and Chemical Aspects of Fermentation, Operation of Fermentation Systems – Bioreactors, Down Stream Separation and Purification Protocols on an Industrial Scale, Utilization of Agro Wastes, Co products and Naturally Occurring Plant Material in the Production of Fermented Food and Beverage, Protein Engineering and Enzyme Biotechnology, Applications of Microbiology in Biotechnology with special emphasis on processing of agro foods and Alcoholic beverages

Food Engineering EAG 345-2 (C: 30/00/70)

Introduction to food engineering, Units and dimensions, Physical characteristics of food materials, Rheological and textural properties of foods, Fluid flow, Material and energy balance, Unit operations in food processing, Psychrometrics, Heating systems and heat transfer in food processing, Safety and fire protection

Food Nutrition and Health EAG 363-2 (C: 27/06/67)

Definition of food, Nutrients, Nutrition and Health, Nutritional requirements for different groups, Nutritional status of different age groups, Macro nutrients ,their sources and health effects, Micronutrients , their sources and health effects, Food non- nutrients, their sources and health effects [fiber, antioxidants, phytochemicals (caratinoids, flavonoids, alkaloids, isoflavons, ligans, organosulfides, phenolic acids, phytosterols)], Probiotics and Prebiotics, Effect of food nutrients on non-communicable diseases, Nutrient deficiencies, Different diet systems, their advantages and disadvantages, Food toxins and allergens

Food Preservation Technology EAG 364-2 (C: 25/10/65)

Introduction to food preservation, Importance of agro-food processing/preservation, Principles of raw material preparation, Water activity and food preservation, Unit operations in food preservation, Dehydration, Thermal preservation, Low temperature preservation, Food irradiation, Fermentation as a preservation method, Preservation with sugar, Aseptic processing, Hurdle technology, Current trends in agro food process technology

Beverage Technology EAG 365-2 (C: 25/10/65)

Introduction, Basics of carbonated beverages and value addition, Chemical constituents and health benefits of tea, Orthodox black tea manufacturing process, Green tea manufacturing process, Tea grades and tea tasting, Quality and standards for tea, Value added tea beverages, Chemical composition of cocoa, cocoa processing, cocoa products and value addition, Chemical composition of coffee, coffee processing, coffee products and value addition, Cordial and fruit concentrate processing and value addition, Processing of alcoholic beverages and value addition, Introduction to, coconut water, herbal beverages and value addition, Basics of mineral water processing, Introduction to sports and energy drinks and value addition

Food Analysis EAG 366-3 (C: 35/20/95)

Introduction to Food Analysis, Sampling and sample preparation techniques, Food extraction techniques, Proximate analysis, Classical methods of food analysis, Separation techniques in food analysis, size exclusion, ion exchange and electrophoresis, gas chromatography, Spectroscopic techniques in food analysis, Analysis of different food commodities – fruits, vegetables, cereals, Enzyme Analysis -Enzyme activities, Enzyme inhibition properties, Residual Analysis of foods

Grain Product Technology EAG 367-2 (C: 25/10/65)

Importance of grains/Economic aspects, Cereals/grains and food safety, Elimination of anti-nutrients, Post-harvest handling of grains, Milling techniques, Industrially important grains/cereals, Glycemic index, Bakery products, Confectionary products, Extruded products

Spice Technology EAG 368-2 (C: 24/12/64)

Main types of spices, Role of spice processing and value addition, An overview of spice processing industry, Main chemical constituents, Role of spices in development of aroma & flavor, Physiological and functional effects of spice constituents, Harvesting, post-harvest technology and processing of cinnamon, pepper, nutmeg, cloves, cardamom, ginger and turmeric, vanilla, Essential oils, oleoresins and oleochemicals of spices, Quality standards and specifications of spices, Marketing aspects of spices and future trends

OPTIONAL SUBJECTS

Agro-Food Supply Chain Management EAG 326-2 (O: 25/10/65)

Key drivers, problems and challenges in agri-food business, Supply chain definitions, advantages of Supply Chain Management, Supply Chain Management and Logistics Management, Performance drivers of Supply Chain Management, Evolving structure of Supply Chains, Aligning supply chains with business strategy, Strategic supply chain mapping, Challenges in Agri-food Supply Chain Management with globalization, Developing SCM approach to horticulture supply chains for small rural farmers

Agricultural Policies EAG 339-1 (O: 13/04/33)

Introduction to Agricultural Policies, Agricultural policies and laws related to land use, Plant imports and exports, Phyto-sanitary regulations, Agrochemical imports and use, Subsidiary schemes in agriculture, Impact of Subsidiary schemes in agriculture, Government Intervention on Agricultural Markets and Trade Policies

Applications of GIS and Remote Sensing EAG 344-1 (O: 10/10/30)

Applications of GIS and Remote sensing (introducing the possible application areas, especially in agriculture), Currently operating satellites and their applications, Spectral characteristics of spatial properties ,Signature Spectra, and sensor characteristics and selection of sensors, Digital image processing and interpretation (supervised and unsupervised classification), NDVI and LAI applications and other Indices, GIS, Functionality and challenges, Overlay, proximity and spatial analysis methods in GIS, GIS Application/ Land use mapping, land suitability mapping etc

YEAR: 4 SEMESTER: 1

MAJORING IN AGRICULTURAL PRODUCTION TECHNOLOGY

Bio-Statistics EAG 401-2 (C: 20/20/60)

Regression analysis with data transformation methods, Modeling binary and categorical data, Multivariate Analysis, Application of Nonparametric test (One Sample test, Tests for two related samples, Test for two independent samples, Test for K- related samples, Test for K- independent samples, Test for correlation)

Plant Stress Signaling EAG 411-2 (C: 25/10/65)

Introduction to plant stresses and effects, Stress signal adjustments, Sensing of stress signals, Stress signal transduction (Biochemical, cellular, genetic analysis), Major signalling molecules (stress hormones and Intracellular messengers, Ca2+ as a general and specific signalling molecule, Kinases and G proteins and Phospholipids in stress signalling), Plasma membrane as stress barrier, Introduction to novel approaches in stress signalling (transcriptome, proteome, metabolome, ionome), Specific stress signalling pathways (cold, drought, salt, UV and pathogenic infections)

Precision Agriculture EAG 442-2 (C: 15/30/55)

Introduction to Precision Agriculture, Understanding variability aspects of agricultural production Natural resources, Production inputs, Instrument performances (farm machinery, measuring devices) Farm operators, (human skills),Basic operation of a precision Agricultural system[flow of variability management in the precision farming, System Application of Sensors and transducers invariability management, Assessing the variability of agricultural fields by on the go field soil variability sensing components for adoptive feedback and decision support systems in variability management, Familiarizing with different types of sensors [Electrical sensors, Electromagnetic sensors, capacitor sensor, Mechanical (electro mechanical) Sensors, Electrochemical sensors, acoustic and pneumatic sensors, radiometric sensors], Introduction to radiometric sensors, Managing the variability of agricultural fields with the examples of Variable rate technologies (VRT) and yield monitoring, vegetation monitoring NDVI, VRT system example for sprayer control on demand, Yield monitoring and field mapping (components of on the go yield mapping system, Positioning system (GPS),Central task computer, Operator interface, sensors and transducers for yield mapping, mass flow sensors, impact sensors, moisture sensors for estimating yields, Economic analysis of input vs. yield mapping, resuming and progressing with sustainable approaches

Climate Change and Crop Production EAG 451-2(C: 25/10/65)

Introduction to the course, Influence of agriculture on climate change, concepts related to climate change, Impacts of climatic change on agricultural production, Adaptation strategies and Mitigation options for climate change, Climate change and modelling, Modeling crop response to changes in temperature, rainfall and CO_2, Climatic variability and the modeling of crop yields

Commercial Floriculture and Landscaping EAG 452-2 (C: 20/20/60)

Introduction to Floriculture industry, Commercial production of cut flowers species, Commercial production of cut foliage species, Interior decorations, Dry flower technology, Introduction to landscape gardening (Potential, different

types of gardens), Soft and hard landscape materials, Landscape designing, Lawn construction and management, Landscape maintenance

Crop Modeling and Simulation EAG 453-2 (C: 25/10/65)

Introduction to Crop modeling (Definitions, importance of crop modules and their application, objective of crop physiology models), Classification of Crop Model, Model Development, Crop parameters and meteorological parameters, Designing of Crop growth sub module, Introduction to modules of crop photosynthesis, water uptake and nutrient movement, Use of Models for yield prediction, its application and limitation, Model Evaluation (Visual Evaluation, Gradient (b) and Intercept (a) of the Linear Regression, Root Mean Square Error (RMSE))

Industrial Training EAG 481-2 (CN: 00/80/20)

Students will be sent to reputed Agro based industries, Students will be engaged on the work assigned in capacity associated with the specialization field in; Agriculture Production Technology, Food Processing Technology and Entrepreneurial Agriculture

Research Methodology and Scientific Writing EAG 491-1(C: 15/00/35)

Research project formulation (Identification of research problem, Its significance to the industry, Literature survey, Theory/hypothesis, Proposed experimental techniques/methods, Methods for data handling/analyses, Budgeting, Time schedule), Scientific writing(Importance of scientific skills, Structure and layout of research papers/theses/dissertations: Abstract, Introduction, Objectives, Material and Methods/Methodology, Results, Discussion and Conclusion, Acknowledgement, Citation of Literature/References/Bibliography)

OPTIONAL SUBJECTS

Human Resource Management EAG 422-2 (O: 26/08/66)

Introduction to HRM, Strategic Human Resource Planning, Change Management, Job Analysis, Human Resource Planning & Recruitment, Employee Testing & Selection, Training & Development, Performance Appraisal, Human productivity measurement, Compensation, Occupational Health & Safety, Basic Labor Laws, Labor Relations, Salary & Wages Calculations

Export Import Procedures EAG 431-2 (O: 26/08/66)

International Trade-Institutional Framework and Basics, Export Marketing Opportunities, Methods of settlement of Payment & Export and Import Finance , International Commercial Terms-2010 (INCOTERMS-2010), Export Procedures and Documentation, Import Procedures and Documentation, Quality Controls on export and imports, Shipping and Marine Insurance , Freight Forwarding and Logistics

Agricultural and Food Waste Utilization Technology EAG 441-2 (O: 24/06/70)

Industrial processes and waste generation(Food Processing industries , Agricultural farm waste, Agrochemical production, Rubber and Latex Processing, Coconut processing ,Palm oil manufacturing,), Classification of waste, Industry waste management , Waste treatment and disposal, waste water treatment, (waste water types and their characteristics, standards of WW disposal, WW generation, WW treatment methods, Reuse of treated WW), solid waste [composting, bio gas generation, thermal treatment incineration, pyrolysis, gasification, stabilization, solidification, land filling], Air waste (scrubbers, gas filters),Integrated waste management and emergency Plan Environmental issues and Pollution control Techniques for waste utilization; reuse, recovery, recycling

Safety and Quality Assurance for Fresh Produce EAG 455-2 (O: 25/10/65)

Introduction to Food Safety and Quality, Food Safety of Fresh Fruits and Vegetables, Assessing the risks, Record keeping and traceability, Code compliance and verification, Testing for contamination and Choice of laboratory, Good Agricultural Practices (GAP), Good Agricultural Practices (GAP), GLOBALGAP, Good Manufacturing Practices, Principles and Practices of Food Safety Management, Food Laws and Food Safety Regulations

Food Safety and Quality Management EAG 462-2 (O: 25/10/65)

Introduction, Cleaning and sanitation in processing factory, Designing factory layout, Personal hygiene, GMP/GAP,HACCP, Codex Alimentarius Commission, ISO and SLS standards, Laboratory accreditation, Total quality management and other novel concepts

MAJORING IN ENTREPRENEURIAL AGRICULTURE

Econometrics EAG 402-2 (C: 20/20/60)

The linear regression model: an overview, Functional forms of regression models, Qualitative explanatory variables regression models, Regression diagnostic, The logit and probit and Multinomial regression models, Ordinal regression models, Limited dependent variable regression models, Modeling count data: the Poisson and negative, binomial regression models, Time series analysis and forecasting, Panel data regression models, Stochastic regressors and the method of instrumental variables

Agricultural Project Management EAG 421-2(C: 20/20/60)

Introduction to project analysis, The projects cycle, Introduction to network analysis, Project evaluation, Project appraisal, Economic and financial analysis, Cost-benefit analysis, Valuation of costs and benefits, Shadow pricing, Discounting, Measures of projects worth, Extended cost- benefits analysis, Sensitivity analysis, Problem tree analysis, Environmental Impact Analysis, Shortcomings of projects analysis

Human Resource Management EAG 422-2(C: 26/08/66)

Introduction to HRM, Strategic Human Resource Planning, Change Management, Job Analysis, Human Resource Planning & Recruitment, Employee Testing & Selection, Training & Development, Performance Appraisal, Human productivity measurement, Compensation, Occupational Health & Safety, Basic Labor Laws, Labor Relations, Salary & Wages Calculations

Venture Creation EAG 423-2(C: 25/10/65)

Introduction to Entrepreneurship, New Venture Creation (Creativity, Idea Generation, and Feasibility Studies), Modes of Entry (Part-time and Full-time Entrepreneurship), The Business Plan, Marketing Research and Marketing Plan, Operations -Location and Capacity Planning, Financing New Ventures - Start-Up Costs and Performance Projections, Sources of Financing for New Ventures, Legal Structures and Legal Issues, The Organization and New Venture Team Development, Risk Analysis and Management

Export Import Procedures EAG 431-2 (C: 26/08/66)

International Trade-Institutional Framework and Basics, Export Marketing Opportunities, Methods of settlement of Payment & Export and Import Finance , International Commercial Terms-2010 (INCOTERMS-2010), Export Procedures and

Documentation, Import Procedures and Documentation, Quality Controls on export and imports, Shipping and Marine Insurance, Freight Forwarding and Logistics

International Trade and Finance EAG 432-2 (C: 20/20/60)

Introduction to International Trade, Theory of Comparative Advantage, Classical Model and Specific Factor Model, Heckscher – Ohlim Model & Technology Difference Model, Partial Equilibrium Analysis of Trade Policy, General Equilibrium Analysis of Trade Policy, Balance of Payment, Exchange Rate, Trade Agreements, Anti trade arguments

Industrial Training EAG 481-2 (CN: 00/80/20)

Students will be sent to reputed Agro based industries, Students will be engaged on the work assigned in capacity associated with the specialization field in; Agriculture Production Technology, Food Processing Technology and Entrepreneurial Agriculture

Research Methodology and Scientific Writing EAG 491-1(C: 15/00/35)

Research project formulation (Identification of research problem, Its significance to the industry, Literature survey, Theory/hypothesis, Proposed experimental techniques/methods, Methods for data handling/analyses, Budgeting, Time schedule), Scientific writing(Importance of scientific skills, Structure and layout of research papers/theses/dissertations: Abstract, Introduction, Objectives, Material and Methods/Methodology, Results, Discussion and Conclusion, Acknowledgement, Citation of Literature/References/Bibliography)

OPTIONAL SUBJECTS

Green Economics EAG 433-2 (C: 30/00/70)

Introduction to Green Economy, Business and Sustainability, Green Economy – Workforce Implications, Green Business, Business Engage with Climate Change, Trade and Sustainable Development, Green Taxation, Green Cities

Agricultural and Food Waste Utilization Technology EAG 441-2 (O: 24/06/70)

Industrial processes and waste generation(Food Processing industries , Agricultural farm waste, Agrochemical production, Rubber and Latex Processing, Coconut processing ,Palm oil manufacturing, Classification of waste, Industry waste

management , Waste treatment and disposal, waste water treatment, (waste water types and their characteristics, standards of WW disposal, WW generation, WW treatment methods, Reuse of treated WW), solid waste [(composting, bio gas generation, thermal treatment incineration, pyrolysis, gasification, stabilization, solidification ,land filling], Air waste (scrubbers, gas filters),Integrated waste management and emergency Plan Environmental issues and Pollution control Techniques for waste utilization; reuse, recovery, recycling

Precision Agriculture EAG 442-2 (O: 15/30/55)

Introduction to Precision Agriculture, Understanding variability aspects of agricultural production Natural resources, Production inputs, Instrument performances (farm machinery, measuring devices) Farm operators, (human skills),Basic operation of a precision Agricultural system[flow of variability management in the precision farming, System Application of Sensors and transducers invariability management, Assessing the variability of agricultural fields by on the go field soil variability sensing components for adoptive feedback and decision support systems in variability management, Familiarizing with different types of sensors [Electrical sensors, Electromagnetic sensors, capacitor sensor, Mechanical (electro mechanical) Sensors, Electrochemical sensors, acoustic and pneumatic sensors, radiometric sensors], Introduction to radiometric sensors, Managing the variability of agricultural fields with the examples of Variable rate technologies (VRT) and yield monitoring, vegetation monitoring NDVI, VRT system example for sprayer control on demand, Yield monitoring and field mapping (components of on the go yield mapping system, Positioning system (GPS),Central task computer, Operator interface, sensors and transducers for yield mapping, mass flow sensors, impact sensors, moisture sensors for estimating yields, Economic analysis of input vs. yield mapping, resuming and progressing with sustainable approaches

Safety and Quality Assurance for Fresh Produce EAG 455-2 (O: 25/10/65)

Introduction to Food Safety and Quality, Food Safety of Fresh Fruits and Vegetables, Assessing the risks, Record keeping and traceability, Code compliance and verification, Testing for contamination and Choice of laboratory, Good Agricultural Practices (GAP), Good Agricultural Practices (GAP), GLOBALGAP, Good Manufacturing Practices, Principles and Practices of Food Safety Management, Food Laws and Food Safety Regulations

Food Safety and Quality Management EAG 462-2 (O: 25/10/65)

Introduction, Cleaning and sanitation in processing factory, Designing factory layout, Personal hygiene, GMP/GAP,HACCP, Codex Alimentarius Commission, ISO and SLS

standards, Laboratory accreditation, Total quality management and other novel concepts

MAJORING IN FOOD PROCESSING TECHNOLOGY

Bio-Statistics EAG 401-2 (C: 20/20/60)

Regression analysis with data transformation methods, Modeling binary and categorical data, Multivariate Analysis, Application of Nonparametric test (One Sample test, Tests for two related samples, Test for two independent samples, Test for K- related samples, Test for K- independent samples, Test for correlation)

Agricultural and Food Waste Utilization Technology EAG 441-2 (C: 24/06/70)

Industrial processes and waste generation, Classification of waste, Industry waste management , Waste treatment and disposal, waste water types and their characteristics, standards of WW disposal, WW generation, WW treatment methods, Reuse of treated WW), solid waste [(composting, bio gas generation, thermal treatment incineration, pyrolysis, gasification, stabilization, solidification, land filling], Air waste, Integrated waste management and emergency Plan Environmental issues and Pollution control Techniques for waste utilization; reuse, recovery, recycling

Food Packaging Technology EAG 461-2 (C: 29/02/69)

Introduction to food analysis, History and development, Traditional food packaging, Functions of packaging, Factors to be considered during pack design, Types of packages, Packing materials and their classification, Advantages and disadvantages of different packing materials, Plastics in flexible packaging, Packaging technologies, Food packaging and environmental issues, Legislation rules and regulations, Labeling and labeling regulations , Current trends in food packaging

Food Safety and Quality Management EAG 462-2 (C: 25/10/65)

Introduction, Cleaning and sanitation in processing factory, Designing factory layout, Personal hygiene, GMP/GAP,HACCP, Codex Alimentarius Commission, ISO and SLS standards, Laboratory accreditation, Total quality management and other novel concepts

Functional Foods and Nutraceuticals EAG 463-2 (C: 27/06/67)

Introduction to functional foods and nutraceuticals (Definitions, history, present situation), Classification of functional foods and nutraceuticals, Role of functional

food constituents on health promotion and disease prevention, Challenges in functional foods and nutraceuticals, Strategy for developing functional foods and nutarceuticals, Quality and safety aspects of functional foods and nutraceuticals, Techniques used in developing functional foods and nutraceuticals, Economic and marketing issues of functional foods and nutraceuticals

Sensory Evaluation EAG 464-1 (C: 12/06/32)

Introduction to sensory science, preparing for the test, preparing samples, Selection of panelists, Factors that influence on sensory evaluation, Sensory evaluation methods, Statistical analysis

Industrial Training EAG 481-2 (CN: 00/80/20)

Students will be sent to reputed Agro based industries, Students will be engaged on the work assigned in capacity associated with the specialization field in; Agriculture Production Technology, Food Processing Technology and Entrepreneurial Agriculture

Research Methodology and Scientific Writing EAG 491-1(C: 15/00/35)

Research project formulation (Identification of research problem, Its significance to the industry, Literature survey, Theory/hypothesis, Proposed experimental techniques/methods, Methods for data handling/analyses, Budgeting, Time schedule), Scientific writing(Importance of scientific skills, Structure and layout of research papers/theses/dissertations: Abstract, Introduction, Objectives, Material and Methods/Methodology, Results, Discussion and Conclusion, Acknowledgement, Citation of Literature/References/Bibliography)

OPTIONAL SUBJECTS

Human Resource Management EAG 422-2 (O: 26/08/66)

Introduction to HRM, Strategic Human Resource Planning, Change Management, Job Analysis, Human Resource Planning & Recruitment, Employee Testing & Selection, Training & Development, Performance Appraisal, Human productivity measurement, Compensation, Occupational Health & Safety, Basic Labor Laws, Labor Relations, Salary & Wages Calculations

Export Import Procedures EAG 431-2 (O: 26/08/66)

International Trade-Institutional Framework and Basics, Export Marketing Opportunities, Methods of settlement of Payment & Export and Import Finance, International Commercial Terms-2010 (INCOTERMS-2010), Export Procedures and

Documentation, Import Procedures and Documentation, Quality Controls on export and imports, Shipping and Marine Insurance , Freight Forwarding and Logistics

Safety and Quality Assurance for Fresh Produce EAG 455-2 (O: 25/10/65)

Introduction to Food Safety and Quality, Food Safety of Fresh Fruits and Vegetables, Assessing the risks, Record keeping and traceability, Code compliance and verification, Testing for contamination and Choice of laboratory, Good Agricultural Practices (GAP), Good Agricultural Practices (GAP), GLOBAL GAP, Good Manufacturing Practices, Principles and Practices of Food Safety Management, Food Laws and Food Safety Regulations

YEAR: 4 SEMESTER: 2

Research Project EAG 492-8(C: 00/200/200)

Candidates are requested to carry out a research work (understanding the research problem, analytical skill, creativity, punctuality, research ethics, communication with the supervisor, handling of practical problems)

Achievements
of Graduates of
Bachelor of Science Honours (BScHons) in Export Agriculture Degree Programme

Education at Uva Wellassa University extends beyond the conventional boundaries, particularly, by blending comprehensive course curriculum with the uniquely designed Broad General Education and Essential Skills Development programmes. The solid foundation that I laid through the Export Agriculture Degree programme is the biggest strength of my professional life. Today, when I look over my shoulder in time what I can say with full confidence is that, at UWU, I have gained more than I ever expected. I love and owe so much to this wonderful place which bestowed me an amazing University life.

Mr. G. P. De Silva
Assistant Director
Ministry of Development Strategies and International Trade
Level 30, West Tower
World Trade Centre
Colombo 01

Successful formation of my scholastic heartbeat that I am joyfully experiencing was infused in me by the alma-mater, Uva Wellassa University of Sri Lanka. As the factory Manager at Tropikal Life International (Pvt) Limited, Expolanka Holdings PLC, I am contributing my knowledge enriched with my valuable experience towards the productivity of my country. I feel that the basic factor of my success is due to the new teaching methods of our authentically qualified lectures appeared in various guises such as versatile lectures, Instructors, counselors and demonstrators. I convey my heartfelt gratitude to all of them who had been lavishly conveying their supreme knowledge and dexterous ability on behalf of the progress of the nation, encircling the field of economy, community and scientific achievements enabling us to be paralleled with the modern world which has its progress by leaps and bounds while planting seeds on the moon.

T. Ranpatabendi
Factory Manager
Expolanka Holdings PLC

I graduated from Uva Wellassa University in 2013, with a bachelor's degree in Export Agriculture. Since graduating, I have received my master's degree in Agricultural science from Tennesse State University (USA) and I am currently matriculated in Auburn University's (USA) Plant Pathology Ph.D. program with the future aspiration of joining the academic sector. The undergraduate education I received within the Export Agriculture Department at UWU served as a solid foundation from which I am building my graduate education and research career. The rigorous course work, diverse research opportunities, and the excellent faculty provided me with quality education and offered the skills needed to successfully navigate my way through graduate programs and professional positions.

P. D. Liyanapathirana
PhD Candidate at Auburn University
USA

It is a great privilege for me to serve as a Lecturer at the place where I laid the foundation of my higher education. I have received the greatest benefit from my studies while being an Export Agriculture graduate at Uva Wellassa University. The degree programme led me to embrace a variety of technical and practical subjects and skills and I'm beyond grateful to my university for gifting a wonderful learning experience.

C. Amarakoon
Lecturer
Uva Wellassa University of Sri Lanka

It was one of the best things that happened in my life that I earned my bachelor degree in Uva Wellassa University. I'm pleased to convey my heartfelt gratitude to all the members of UWU family for the inspiration provided for my academic and research life, which helped me in having a successful research career in Rice Research and Development Institute of Department of Agriculture.

D. Witharana
Research Assistant
Rice Research and Development Institute, Batalagoda

STUDENT HANDBOOK 2019

Faculty of Animal Science & Export Agriculture

Uva Wellassa University

BACHELOR OF

SCIENCE HONOURS (BScHons) IN PALM & LATEX TECHNOLOGY AND VALUE ADDITION

DEGREE PROGRAMME

BACHELOR OF SCIENCE HONOURS (BScHons) IN PALM & LATEX TECHNOLOGY AND VALUE ADDITION DEGREE PROGRAMME

Introduction

Bachelor of Science Honours (BScHons) in Palm & Latex Technology and Value Addition degree programme envisages on the current issues in the Palm and Latex Industry and the scientific background needed to address those issues effectively. Palm & Latex Technology and Value Addition graduates possess theoretical knowledge, conceptual & entrepreneurial skills with practical experience needed to function effectively in palm, rubber & allied crops production, processing, value addition, marketing and to propose solutions to emerging problems through active involvement in research and development activities. During the first three years of the programme, the students are offered a wide range of courses under the key areas; production, processing & value addition and marketing with respect to the Palm and Latex Industry. Subsequently, these students are provided field training on coconut and rubber production to equip them with hands-on-experience. Further, the students undergo an Industrial Training at the beginning of the fourth year, while the second semester of the final year has been totally allocated for a research project under the theme of Value Addition in Palm and Latex Industry.

After successful completion of the degree, graduates;

- will have a rational attitude towards knowledge and understanding. They will be leaders in generating new knowledge and understanding related to palm and latex industries in a broader sense through inquiry, critique and synthesis.

- will be of innovative spirits to perceive consequential problems in different angle and will come up with innovative solutions.

- will be contributors of new knowledge creation through research and scientific inquiry.

- will be able to make use of information effectively and efficiently to pursue their duties and will be effective communicators who would create relationship values through persuasion, negotiation and in furthering their career advancement.

COURSE OUTLINE OF BACHELOR OF SCIENCE HONOURS (BScHons) IN PALM & LATEX TECHNOLOGY AND VALUE ADDITION DEGREE PROGRAMME

YEAR: 1 SEMESTER: 1

No	Course Code	Course Title	Units	C/O/CN*
1	BGE 121-2	Ethics and Law Basics	2	C
2	ESD 103-2	Information Technology	2	C
3	ESD 121-1	English Language	1	C
4	EAG 101-1	Mathematics for Biological Science	1	C
5	EAG 112-1	Principles of Entomology	1	C
6	EAG 113-1	Principles of Microbiology	1	C
7	EAG 114-2	Principles of Crop Physiology	2	C
8	EAG 141-2	Agricultural Meteorology and Climatology	2	C
9	TEA 151-2	Introduction to Agriculture	2	C
10	PLT 111-1	Crop Botany	1	C
11	PLT 131-1	Overview to Palm & Latex Industry	1	C
12	ESD 151-1	Sinhala (Level 01)	1	CN
	ESD 161-1	Tamil (Level 01)	1	CN

YEAR: 1 SEMESTER: 2

No	Course Code	Course Title	Units	C/O/CN*
1	ESD 111-1	Communication Skills I	1	C
2	ESD 122-1	Communicative English	1	C
3	ESD 141-2	Quantitative Reasoning	2	C
4	EAG 115-1	Principles of Pathology	1	C
5	EAG 131-3	Principles of Agricultural Economics	3	C
6	EAG 142-2	Principles of Agricultural Engineering	2	C
7	EAG 171-2	Principles of Soil Science	2	C
8	TEA 161-1	Introductory Food Chemistry	1	C
9	PLT 151-2	Nursery Management	2	C
10	ESD 152-1	Sinhala (Level 02)	1	CN
	ESD 162-1	Tamil (Level 02)	1	CN

YEAR: 2 SEMESTER: 1

No	Course Code	Course Title	Units	C/O/CN*
1	BGE 211-2	Aesthetic Studies	2	C
2	ESD 221-1	Effective English Usage	1	C
3	EAG 211-2	Basic Genetics	2	C
4	EAG 261-1	Principles of Food Science	1	C
5	TEA 261-2	Basic Analytical Chemistry	2	C
6	TEA 262-1	Basic Organic Chemistry	1	C
7	PLT 241-2	Water Management Technology	2	C
8	PLT 251-2	Cultivation and Management of Coconut and Other Palms	2	C
9	PLT 252-2	Cultivation and Management of Rubber and Allied Crops	2	C
10	PLT 271-2	Plant Nutrition and Soil Fertility Management	2	C

YEAR: 2 SEMESTER: 2

No	Course Code	Course Title	Units	C/O/CN*
1	BGE 213-1	History	1	C
2	ESD 214-1	Geography	1	C
3	ESD 222-1	Explorative English	1	C
4	EAG 201-1	Basics in Statistics	1	C
5	EAG 221-2	Agribusiness Management	2	C
6	TEA 211-1	Basics in In Vitro Techniques	1	C
7	TEA 231-2	Financial Accounting	2	C
8	PLT 211-2	Pests and Disease Management	2	C
9	PLT 242-2	Palm Industrial Machinery	2	C
10	PLT 243-2	Latex Industrial Machinery	2	C
11	PLT 255-2	Other Plantation Crop Production	2	C
12	PLT 253-2	Advanced Crop Physiology	2	C

YEAR: 3 SEMESTER: 1

No	Course Code	Course Title	Units	C/O/CN*
1	ESD 311-1	Communication Skills II	1	C
2	EAG 301-1	Experimental Designs	1	C
3	EAG 311-2	Advanced Agricultural Microbiology	2	C
4	EAG 312-2	Introduction to Biotechnology	2	C
5	EAG 323-2	Agricultural Marketing and Price Analysis	2	C
6	EAG 324-2	Agricultural Technology Dissemination	2	C
7	EAG 342-2	Geographic Information Systems and Remote Sensing	2	C
8	PLT 341-2	Rubber Processing Technology I	2	C
9	PLT 351-1	Energy Plantations and Crop Diversification	1	C
10	PLT 361-3	Coconut Food Product Technology	3	C
11	PLT 381-2 Production	Field Training on Coconut and Rubber	2	C
12	PLT 349-1	Instrumentation in Agricultural Research	1	CN

YEAR: 3 SEMESTER: 2

No	Course Code	Course Title	Units	C/O/CN*
1	PLT 312-2	Genetic Improvements of Perennial Crops	2	C
2	PLT 331-1	Agricultural Policies	1	C
3	PLT 342-1	Application of GIS and Remote Sensing	1	C
4	PLT 343-2	Coconut Non Food Processing Technology	2	C
5	PLT 344-1	Industrial Waste Management	1	C
6	PLT 345-2	Rubber Processing Technology II	2	C
7	PLT 346-2	Polymer Chemistry	2	C
8	PLT 347-2	Timber Processing Technology	2	C
9	PLT 352-1	Organic Agriculture	1	C
10	PLT 353-1	Ornamental Palm Production	1	C
11	PLT 354-1	Plantation Crop Based Farming Systems	1	C
12	PLT 362-2	Other Palm Food Product Technology	2	C
13	PLT 371-2	Land Reclamation and Soil Conservation	2	C

YEAR: 4 SEMESTER: 1

No	Course Code	Course Title	Units	C/O/CN*
1	EAG 401-2	Bio Statistics	2	C
2	EAG 422-2	Human Resource Management	2	C
3	EAG 431-2	Export Import Procedures	2	C
4	EAG 432-2	International Trade and Finance	2	C
5	EAG 491-1	Research Methodology	1	C
6	PLT 421-1	New Product Development	1	C
7	PLT 422-2	Quality Assurance and Certification	2	C
8	PLT 441-1	Applications of Nanotechnology in Palm & Latex Products	1	C
9	PLT 442-2	Rubber Products Designing and Development	2	C
10	PLT 481-2	Industrial Training	2	CN

YEAR: 4 SEMESTER: 2

No	Course Code	Course Title	Units	C/O/CN*
1	PLT 491-8	Research Project	8	C

* C-Compulsory courses, O-Optional courses, CN-Compulsory-Non Credit courses

YEAR: 1 SEMESTER: 1

Refer BGE and ESD subjects offered in this semester under section "Course Structure" (Page No: 47-51).

Mathematics for Biological Science EAG 101-1 (CN: 10/10/30)

Basic concepts in Algebra, Equations and Inequalities, Law of Indices and logarithmic functions, Functions (graphical function, composition of function, Inverse function), Limits of functions, Derivatives of a function, Integration of a function, Real world application of Mathematics functions

Principles of Entomology EAG 112-1 (C: 10/10/30)

Internal and External Morphology of insects, Physiology of insects, Insect metamorphosis and its physiology, molting process of insects, Introduction to Acarology and Nematology

Principles of Microbiology EAG 113-1 (C: 10/10/30)

Introduction to Microbiology, Introduction to Prokaryotic Microorganisms, Introduction to Eukaryotic Microorganisms, Introduction to Acellular Infectious Agents, Microbial Growth, Growth Control of Microorganisms, Microbial Metabolism, Microbial Genetics, Role of Microorganisms in Agriculture

Principles of Crop Physiology EAG 114-2 (C: 24/12/64)

Introduction (Crop physiology vs plant physiology, Significance of studying crop physiology), Growth and Development, Growth curves and Growth indices (CGR/ AGR/RGR/NAR/LAI/LAD), Growth analysis approaches, Crop development and its controlling factors], Radiation interception, Photosynthesis and dry matter accumulation [Different mechanisms (C3, C4 and CAM), Factors affecting photosynthesis and dry matter accumulation], Biomass partitioning and harvest index (HI), Respiration, Plant water relations, Root Physiology, Physiological basis of crop yields and its improvements

Agricultural Meteorology and Climatology EAG 141-2 (C: 28/04/68)

Introduction to the course evaluation and references, Applications of Meteorology and Climatology in Agricultural Production, Different Atmospheric parameters & their impact on Agriculture, Recording of meteorological data from Meteorological and Agro-met stations , Meteorological Instruments, Introduction to Analysis of climate data, Climate classification, Climate of Sri Lanka, Rainfall Patterns and Cultivation Seasons of Si Lanka ,Agro Ecological Regions of Sri Lanka, Global atmospheric and

oceanic circulation, Air Pollution, Global Warming, Climate Change and Climatic hazards affecting agricultural production

Introduction to Agriculture TEA 151-2 (C: 30/00/70)

History and present status of agriculture sector in Sri Lanka, Plant propagation techniques, cropping seasons, crop establishment, plant nutrition and soil fertility management, harvesting and post- harvest technology, major plantation crops, rice production, horticultural crop production, New techniques used in Agriculture (protected agriculture, micro-irrigation techniques, etc), agriculture related industries and services

Crop Botany PLT 111-1 (C: 10/10/30)

Introduction to Taxonomy and Plant Systematics, Functions, External & Internal characteristics, modifications of plant vegetative organs, floral biology, seed development and fruit formulation, Botany of Important Crop Families in Monocotyledons (Liliopsida) and Dicotyledons (Magniliopsida) of Flowering Plants (Angiosperms): Palmae, Euphorbiaceae etc

Overview to Palm & Latex Industry PLT-131-1(C: 15/00/35)

History of coconut, rubber and other underutilized and allied crops, Sri Lankan coconut and rubber industry and uses (present status, challenges and future potentials), Rubber clones, Varieties of coconuts in Sri Lanka and their distinct economics traits, Potentials to improve the underutilized (palm) and allied (latex) crops, smallholding and estate sector, institutional setup, global coconut and rubber industry, statistics: world coconut and rubber statistics, world coconut and rubber by area, world coconut and rubber by production, world coconut and rubber by export

YEAR: 1 SEMESTER: 2

Refer BGE and ESD subjects offered in this semester under section "Course Structure" (Page No: 47-51).

Principles of Pathology EAG 115-1 (C: 10/10/30)

Concept of Plant Health and Plant Pathology, Causes of Plant Diseases, Symptoms Caused by Different Plant Pathogens, Specialized Techniques for Identification and Study of Disease Causing Agents and Plant Diseases, Disease Triangle, Disease Cycle, Plant Defense Mechanisms

Principles of Agricultural Economics EAG-131-3 (C: 30/30/90)

Introduction to Agricultural Economics, Consumer behavior, Demand and supply, Production and costs, Cost of production, Perfect competition, Monopoly, Monopolistic competition, Oligopoly, Introduction to Welfare Economics, Introduction to Fisheries Economics, Introduction to Environmental Economics, Introduction to Macroeconomics

Principles of Agricultural Engineering EAG 142-2 (C: 27/06/67)

Basic concepts of Mechanics: Vectors and Scalar Quantities, Equations of Motion, Acceleration and Different types of Acceleration, Mass and Inertia. Newton's laws and their applications, Structural Analysis of Beams and Trusses: compression and Tensile Forces, Free Body Diagrams, Basic Concepts in Trigonometry, Static Determinacy and Stability of Beams and Trusses, Basic Concepts of Fluid Mechanics: Properties of Fluids, Liquid in motion, Energy of a flowing fluid (Bernoulli's thermo and its application).Basic concepts in Thermodynamics: Types of system, Type of equilibrium, Heat and Temperature, Specific Heat Capacity and Specific Latent Heat, States of Matter and Phase Transitions, Internal energy, The Laws of Thermodynamics and applications. Psychometrics: Psychometric chart and parameters, Psychometric process and its applications

Principles of Soil Science EAG 171-2 (C: 24/12/64)

Introduction, Major rocks and minerals, Rock weathering and soil formation, Soil profile, Soil properties, soil physical properties, soil chemical properties and soil biological properties, Soil classification using Soil Taxonomy (USDA method) and World Reference Base (WRB), Major soil types in Sri Lanka and their distribution

Introductory Food Chemistry TEA 161-1 (C: 10/10/30)

Structure and properties of food components, including water, carbohydrates, protein, lipids, vitamins, minerals, other nutrients and food additives, Chemistry of changes occurring during processing, storage and utilization, Principles, methods, and techniques of qualitative and quantitative physical, chemical, and biological analyses of food and food ingredients

Nursery Management PLT 151-2 (C: 20/20/60)

Rubber: Development of planting material, Site selection for nurseries, Rubber seeds and collection, Culling late germinated seeds, Stock nursery management; Source bush (budwood) nursery management, Nutrient and disease management; Clone recommendation; Bud grafting; Selection of Planting materials; Plant Certification, Irrigation techniques Planting densities.Coconut Nursery Selection and Management, Nursery Site Selection, selection of good quality seedlings, Different types of coconut seedling nurseries (Seed bed nurseries and polybag nurseries)

and their management, Some observations on the pre-nursery system for raising coconut seedlings, Certification procedure, Selling of coconut seedlings, Constraints to establishment of coconut nurseries, Coconut: Selection of seed gardens, Selection of Mother palms, Collection of seed nuts

YEAR: 2 SEMESTER: 1

Refer BGE and ESD subjects offered in this semester under section "Course Structure" (Page No: 47-51).

Basic Genetics EAG 211-2 (C: 25/10/65)

Introduction-History of Genetics, Mendelian Genetics, Gene, Cell Division-Mitosis and Meiosis, Mendelian Genetics Deviations, Pedigree Analysis and Sex Determination, Chromosome Mutations, Linkage and Genetic Maps, Quantitative Genetics, Population Genetics, Molecular Genetics: Replication, Transcription, Translation, Gene Expression and Regulation

Principles of Food Science EAG 261-1 (C: 12/06/32)

Introduction to food science, Food constituents, Factors that affect on food deterioration and spoilage, Food additives and their functions, Principles of food preservation and food preservation methods, Effect of processing on quality and nutritive value of food, Browning reactions of foods, Food safety and control of hazards, Quality attributes of foods, Food-borne diseases and their prevention

Basic Analytical Chemistry TEA 261-2 (C: 25/10/65)

Basic concepts of analytical Chemistry, Errors in Chemical Analysis, Sampling, Statistical analysis of data and evaluation, Chemical equilibria-equilibrium constants and effect of electrolytes, Classical methods of analysis-Gravimetry and titrimetry, Electrochemical methods of analysis -redox titrations and potentiometry, Introduction to spectrometric methods of analysis, Introduction to chromatographic methods of analysis, Separation techniques in analytical chemistry

Basic Organic Chemistry TEA 262-1 (C: 12/06/32)

Chemistry of Carbon-octet rule, bond formation, hybridization and valence bond theory, Physical properties and reactivity of organic compounds, Boiling point and solubility-changing patterns, Effecting factors-Inter molecular distance, functional group, inter molecular attractions, length of carbon chain etc, Structure and

reactivity of organic compounds (hydrocarbons, alcohols, carbonyl compounds, amines and amides), Nomenclature of organic compounds, Isomerism of organic compounds, Chemical reactivity-Substitution, addition, elimination, condensation reactions

Water Management Technology PLT 241-2 (C: 25/10/65)

Introduction to soil water, Soil water availability, Soil water measurement, Soil management to conserve soil moisture, Water requirement of rubber, coconut and allied crops, Soil plant water relations in relation to rubber, coconut and allied crops

Cultivation and Management of Rubber and Allied Crops PLT 251-2 (C: 30/00/70)

Rubber: Replanting, New planting, Planting densities and systems, Site selection, Preparation of planting holes, Field planting, After care and other cultural practices (Immature upkeep) in rubber lands (Infilling, Fertilizer application, Mulching, Watering, Pests and diseases, weed control), Harvesting technology of rubber, Tapping panel dryness of rubber. Allied crops: cultivation and management practices of Pine, Eucalyptus, Papaya, Cashew for latex and resin extraction

Plant Nutrition and Soil Fertility Management PLT 271-2 (C: 22/16/62)

Fundamentals of rubber and coconut growing soils: Chemical, physical and biological properties, Soil classification. Soil fertility and soil fertility management of rubber and coconut growing soils: Fertility aspects of soil, Assessment of soil fertility, Soil degradation, Soil fertility management. Soil and plant nutrition: Soil nutrition, soil nutrient availability and plant nutrition, Techniques in soil and plant nutrient analysis, Site specific fertilizer recommendations, Use of chemical fertilizers and organic manures

Cultivation and Management of Coconut and Other Palms PLT 251-2 (C: 25/10/65)

Agro-climatic conditions for coconut cultivation, soil suitability for coconut, Management practices in coconut lands. (Land preparation, planting and after-care operations), Fertilizers for coconut. (Fertilizer application, Mulching, Watering, Weed control, Propping) ,Water relations in coconut, Irrigation for coconut, Water harvesting in coconut lands, soil moisture conservation& soil conservation practices, Rehabilitation of coconut lands, Coconut based organic farming systems, Inter-cropping in coconut lands; conventional crops, Green manure production, compost, vermicompost and bio gas, Animal husbandry in coconut lands, Cultivation and management of oil palm

YEAR: 2 SEMESTER: 2

Refer BGE and ESD subjects offered in this semester under section "Course Structure" (Page No: 47-51).

Basics in Statistics EAG 201-1 (C: 10/10/30)

Elements of probability theory; Random variable and probability; Introduction to inference, sampling distribution & confidence interval; hypothesis testing, type I & type II error; Correlation and Chi-square test; regression analysis and Goodness-of-fit test

Agribusiness Management EAG 221-2 (C: 25/10/65)

Introduction to Agribusiness Management, Functions of management , Agribusiness planning, Strategic business planning, Marketing planning, Decision making making areas in agribusiness, Forms of business organizations, Record keeping and inventory management, Financial planning process, introduction to basic accounting statements, Financial analysis , Investment Appraisal, Agriculture risk management, Farm site selection, Introduction to Entrepreneurship

Basics in In Vitro Techniques TEA 211-1 (C: 12/06/32)

Introduction to plant tissue culture, Conditions for invitro propagation, Stages in invitro propagation, Importance of micro propagation, Applications of tissue culture: Haploid plant production, Invitro fertilization, Mutation breeding, Somatic hybridization, Production of secondary metabolites from cell cultures

Financial Accounting TEA 231-2 (C: 25/10/65)

Introduction, Farm Accounting for transactions, Explain the effect of transaction on, accounting questions, Record transactions in a farm petty cash book under an impress system, Prepare accounts for sales and purchases including personal accounts and control accounts, Preparation of farm accounts, Farm Accounting adjustment, Sri Lanka Accounting Stranded, Partnership account, Company Accounts, Incomplete record

Pests and Disease Management PLT 211-2 (C: 20/20/60)

Integrated Pest Management, Integrated weed management, Nursery diseases of rubber, Diseases of mature rubber plants, Pests prevailing in rubber cultivations, Major pests of coconut cultivation, Major diseases of plants

Palm Industrial Machinery PLT 242-2 (C: 30/00/70)

Introduction to the palm based products, Planting equipment, Harvesting equipment, Processing machinery (dehuskers, cracking machinery, pairing machinery, trimming machinery, type of machine, advantages and disadvantages, Working principles), Coir extraction unit- machinery used and their working principles, comparison between traditional method and new method, Basic mechanical drivers and power transmission (Gear belt, Chain drive, Connectors- Calculations)

Latex Industrial Machinery PLT 243-2 (C: 26/08/66)

Introduction to rubber material, Viscoelastic properties of polymers, Shear flow behavior of polymer melts, (Capillary rheometer, Rheometry, Mooney viscometer), Melt flow indexer, Oscillating die rheometer (ODR), Plasticity and plasticity retention index of rubber materials), Physical properties of vulcanizates and Transmissibility, Two roll mill, Internal mixing machines and their operation, Moulding techniques, Extruders, injection moulding and Calendaring ,Transfer, compression molding

Other Plantation Crop Production PLT 255-2 (C: 25/10/65)

Overview of the sugarcane industry, Botany of sugarcane, Growth phases, Sugarcane varieties, Cultural practices in sugarcane cultivation (Propagation, Land preparation, Earthing up, Hoeing, De trashing, Weed management, Harvesting, Pest and disease management), Overview of the tea industry, Botany of Tea, Clones and varieties, Nursery management in tea, Cultural practices in tea cultivation (soil rehabilitation, shade tree establishment and management, field establishment, fertilizer application, plucking, pruning, weed management, Pest and disease management)

Advanced Crop Physiology PLT 253-2 (C: 27/06/67)

Overview of coconut physiology; Germination and early seedling growth, Flowering and fruit development, Leaf area dry matter production and yield, Botany of the coconut palm, Physiology of coconut production, Overview of rubber physiology, Anatomy of rubber, Photosynthesis and physiology of latex production, Latex harvesting systems, Type of latex stimulants and their effects, Composition and quality of latex and its association with genotype and tapping systems, Physiological disorders, Physiological crop interactions in rubber and coconut based cropping systems, Climate change, CDM and coconut and rubber cultivations, (Impacts and adaptations),Water relations and screening for drought tolerance in coconut, Root physiology

YEAR: 3 SEMESTER: 1

Refer BGE and ESD subjects offered in this semester under section "Course Structure" (Page No: 47-51).

Experimental Designs EAG 301-1 (C: 10/10/30)

Basic concepts in Experimental design, Analysis of Variance (ANOVA), Complete Randomized Design, Randomized Complete Block Design, Analysis of Covaraince, Factorial Design

Advanced Agricultural Microbiology EAG 311-2 (C: 20/20/60)

Introduction; Microorganisms in Agriculture, Industry, Environment and Health Sector, Food Microbiology- Major Groups of Microorganisms and their Action on Food, Spoilage of Food, Foodborne Illnesses, Preservation of Food, Water Microbiology- Aquatic Microorganisms, Quality Standards and Indicator Microorganisms in Drinking Water, Waste Water Management, Soil Microbiology- Microorganisms in Soil, Plant-Microbe Interaction (Mycorrhizae, Plant Growth Promoting Rhizobacteria and their Effects on Plant Growth), Environmental Microbiology - Microorganisms in Biogeochemical Cycles, Use of Microorganisms as Bio-indicator, Biosensors and Bio-control Agents, Principles of Biological Treatments (Bioremediation), Microbiology in Bio fertilizers and Biogas Production

Introduction to Biotechnology EAG 312-2 (C: 22/16/62)

Introduction to Biotechnology: History and Development, Genetic Engineering Techniques and Tools and Potential Applications, Basics of Prokaryotic and Eukaryotic Genomes, DNA Isolation, quantification and Fractionation, Biotechnological Techniques: Blotting Techniques and Labeling Nucleic Acids, Restriction Enzymes, Vectors and DNA Libraries, Polymerase Chain Reaction (PCR), Synthesizing and Sequencing of DNA, Gene Cloning, Gene Transfer into Bacteria, Plant and Animal cells , DNA Fingerprinting, Bioinformatics

Agricultural Marketing and Price Analysis EAG 323-2 (C: 30/00/70)

Agri Produce Marketing, Marketed and marketable surplus, Classification of agricultural markets, Marketing costs, Product/Production Based Approaches to Improve the Profitability of Producer, Finding assured market for agri. Products, Market price, Why market price fluctuates?, Ways and objectives of pricing, Demand components of agricultural products, Market supply, risk and uncertainty, supply response functions, Marketing margins, Marketing costs and size of margins,

Seasonal variation in price, Price variations through time, Vertical coordination and contracting agriculture, Trade models, recursive models, Shift-share analysis

Agricultural Technology Dissemination EAG 324-2 (C: 20/20/60)

Introduction to agricultural Extension, Definition, Objectives, Human Behavior, Socio Economic aspects of farming, Principles of Education, Adult Education, Principles of Learning, Effective Communication, Motivation for Extension, Leadership in Extension, Principles of Effective Extension Program, Extension Teaching Methodologies, Adoption & Diffusion of Technologies, Role of Extension Agent, Planning & Evaluation of Extension Program, Challenges for Agriculture Extension

Geographic Information Systems and Remote Sensing EAG 324-2 (C: 20/20/60)

Part I: Overview (content and evaluation methods), Map, Types of Maps, scale, characteristics, coordinate systems (definitions, concepts and functions), Introducing Geographical entities, Attribute data, map features, and GIS theme, Data models used in GIS and their characteristics, GIS Applications

Part II: What is Remote Sensing? (definitions and concepts and the components), Electromagnetic Spectrum and its interactions, Remote Sensing Systems, Platforms, Signals and Sensors and scanning Systems, Airborne and space borne sensor systems, advantages and disadvantages, Applications of Remote Sensing, GPS system and its architecture

Rubber Processing Technology I PLT 341-2 (C: 25/10/65)

Definition of latex & composition, Preservation of latex, Processing of latex& dry rubber, (sheet rubber, crepe rubber, TSR, skim), End user applications of dry forms, Coagulation – of latex, Fractional coagulation, Milling of rubber, Drying systems & methods, Latex concentration, End user applications of latex cream, Modified grades of rubbers, Waste water treatment and power consumption in a factory

Energy Plantations and Crop Diversification PLT 351-1 (C: 10/10/30)

Aims/concepts of intercropping and crop diversification, methods of intercropping tea in rubber and coconut, growing export crops such as pepper, coffee, vanilla with Coconut and constraints, timber plantations, energy plantations

Coconut Food Product Technology PLT 361-3 (C: 35/20/95)

Physicochemical characteristics of edible portion of coconut kernel, coconut water and coconut sap, Copra manufacturing technology, quality standards, types

of copra, Types of coconut oil, chemistry & composition of coconut oil, Different methods of coconut oil extraction, Desiccated coconut manufacturing, uses, grades, quality standards, Coconut kernel chips and value addition, Processing technology of coconut milk, coconut milk powder and coconut ice cream, Processing of defatted coconut flour and uses, Processing technology of coconut water and value addition, Fermented Coconut Foods, Minimally processed Coconut Foods, Reactions of lipids in coconut food products, Proximate composition analysis, Lipid analysis, Packaging techniques for coconut food products, Sensory evaluation of coconut food products

Field Training on Coconut and Rubber Production PLT 381-2 (C: 00/90/10)

One month field training programme at RRISL, CRISL, Kurunagala plantations

Instrumentation in Agricultural Research PLT 349-1 (CN: 12/06/32)

Spectroscopic techniques (Theory, Instrumentation and uses of UV and IR) Chromatographic techniques (Theory, Instrumentation and uses of GC, GCMS, HPLC and TLC), Elemental analysis (total carbon analyzer, C, H, N analyzer), Titrimetric techniques, Atomic absorption spectroscopy, mass spectroscopy

YEAR: 3 SEMESTER: 2

Genetic Improvements of Perennial Crops PLT 312-2 (C: 28/06/66)

History and Milestones, Breeding objectives, Crop Germplasm, Breeding Techniques: Selection and Hybridization, Breeding Methods of Self-pollinated, Cross-pollinated crops, Genetic improvement in Asexually Propagated Crops, Breeding for Heterosis, Resistance to Pests & Diseases, Wider adaptability and Stability, Mutation Breeding, Application of Invitro-techniques in breeding, Molecular Breeding, Participatory Plant Breeding, IPR & Seed Act, Application of breeding techniques in Coconut & Rubber cultivar development

Agricultural Policies PLT 331-1 (C: 13/04/33)

Introduction to Agricultural Policies, Agricultural policies and laws related to land use, Plant imports and exports, Phytosanitary regulations, Agrochemical imports and use, Subsidiary schemes in agriculture, Impact of Subsidiary schemes in agriculture, Government Intervention on Agricultural Markets and Trade Policies

Application of GIS and Remote Sensing PLT 342-1 (C: 10/10/30)

Applications of GIS and Remote Sensing (introducing the possible application areas, especially in agriculture), Currently operating satellites and their applications, Spectral characteristics of spatial properties, Signature spectra, and sensor characteristics and selection of sensors, digital image processing and interpretation (supervised and unsupervised classification), NDVI and LAI applications and other indices, GIS, Functionality and challenges, Overlay, proximity and spatial analysis methods in GIS, GIs application/Land use mapping, land suitability mapping etc

Coconut Non Food Processing Technology PLT 343-2 (C: 20/20/60)

Harvest and post harvest technology: Harvesting, Storage and seasoning, Post harvest processing, Husking Coconut Husk and Coir Products: White Coir and Products, Brown Coir and Products, Coconut Fiber, Dust or Coco peat, Coconut Shells and Products, Properties of Coconut Wood, Coir processing technology - fiber extraction process: wet milling, dry milling, machineries to improve the fiber extraction process, grading of fiber (SLS stds), fiber bleaching, value addition to coir fiber, coir pith and coir composites and coir based products and ornamental products from coconut tree

Industrial Waste Management PLT 344-1 (C: 10/10/30)

History, policies, laws &economics of waste management systems, Industrial waste collection and transportation, Environmental and health impacts, Industrial waste sampling techniques, Biological, Physical and chemical industrial waste treatment methods, Risk assessment and safety in industrial waste, Waste incineration, Integrated waste management and emergency plan, Parameters used to estimate the resource usage and carbon emission, Cleaner Production Techniques and Process analysis

Rubber Processing Technology II PLT 345-2 (C: 25/10/65)

Latex Technology, Spontaneous coagulation & destabilization, Preservation & Stabilization, Compounding ingredients, Preparation of dispersions, emulsions and solutions, designing of compound formulations. Prevulcanization of NR latex manufacture of latex based products. Testing of latex based products. Dry Rubber Technology: Compounding ingredients, Mixing techniques, Machinery for mixing, Designing of compound formula , Manufacture of dry rubber based products: Compound testing ,Synthetic Rubber Technology: Production of rubbers, Properties & applications of different types of synthetic rubbers, Designing of compound using synthetic rubbers, Blending with natural rubber for specialized applications

Polymer Chemistry PLT 346-2 (C: 30/00/70)

Nature & Structure of Polymers; Characterization of Rubbers, Plastics and Fibers, Cis Trans configurations, Glass transition state of polymers, Characterization techniques, Basics of polymer types & general properties: (Thermoset & thermo plastic polymers), Polymerization techniques, Molecular Characterization, Polymer degradation, Reactions, The effect of degradation on the physical and electrical properties of rubber

Timber Processing Technology PLT 347-2 (C: 30/00/70)

Wood structures and timber properties; technology on timber drying; Timber conversion and machining for both primary and secondary wood machining activities, timber durability, protection and preservation; Softwood, hardwoods or panel products or a combination of them; Carcassing and strength grading and joinery and appearance grading; Timber trade practice and yard and warehouse operations

Organic Agriculture PLT 352-1(C: 10/10/30)

Organic farming vs conventional farming, need for organic farming, Liquid organic fertilizers, Green manure, Composting, Traditional agricultural practices, Pest and weed management in organic farming, Effective micro-organisms, Biodynamic farming, Waste management in the farm, Biogas production, Soil and organic farming, Soil conditioning material, Vermitech, Certification and marketing of organic products

Ornamental Palm Production PLT 353-1 (C: 12/06/32)

Introduction to Ornamental Palms, Classification and morphological characteristics, Types and varieties of Ornamental palms, Growth habits and plant requirements, Cultivation and management of Ornamental Palms, Pest and Disease Management, Post harvesting techniques and packaging for exportation, Applications of Ornamental palms

Plantation Crop Based Farming Systems PLT 354-1 (C: 13/04/33)

Farming systems (Cropping systems, Farming systems), Integrated Farming systems, Coconut based farming systems, Rubber based farming systems, Tea based farming systems, and other plantation crops based farming systems (Sugarcane), Agroforestry

Other Palm Food Product Technology PLT 362-2 (C: 25/10/65)

Chemistry and physicochemical characteristics of palmyrah fruit pulp, tubers and sap, Nutritional value, health benefits and applications of palmyrah food products,

Processing and preservation of palmyrah food products and value addition, Tapping process of Kithul palm, Physicochemical characteristics, nutritional value and health benefits of kithul sap and kithul flour based products, Processing and preservation of Kithul sap and Kithul flour based products and value addition, Harvesting of oil palm bunches and post harvest handling, Manufacturing process, Purification process, Chemistry and health benefits of palm oil and palm kernel oil, Value added products of palm oil and palm kernel oil and applications, Harvesting and post harvest handling of arecanut, Chemical constituents in arecanut, potential uses and value addition, Preservation methods of arecanut

YEAR: 4 SEMESTER: 1

Bio Statistics EAG 401-2 (C: 20/20/60)

Regression analysis with data transformation methods, Modeling binary and categorical data, Multivariate analysis, Application of Nonparametric test (One Sample test, Tests for two related samples, Test for two independent samples, Test for K- related samples, Test for K- independent samples, test for correlation) Regression analysis, Modeling binary and categorical data, Multivariate analysis, Nonparametric data analysis

Human Resource Management EAG 422-2 (C: 26/08/66)

Introduction to HRM, Strategic Human Resource Planning, Change Management, Job Analysis, Human Resource Planning & Recruitment, Employee Testing & Selection, Training & Development, Performance Appraisal, Human productivity measurement, Compensation, Occupational Health & Safety, Basic Labor Laws, Labor Relations, Salary & Wages Calculations

Export Import Procedures EAG 431-2 (C: 26/08/66)

International Trade-Institutional Framework and Basics, Export Marketing Opportunities, Methods of settlement of Payment & Export and Import Finance , International Commercial Terms-2010 (INCOTERMS-2010), Export Procedures and Documentation, Import Procedures and Documentation, Quality Controls on export and imports, Shipping and Marine Insurance , Freight Forwarding and Logistics

International Trade and Finance EAG 432-2 (C: 30/00/70)

Introduction to International Trade, Theory of Comparative Advantage, Classical Model and Specific Factor Model, Heckscher – Ohlim Model & Technology Difference Model, Partial Equilibrium Analysis of Trade Policy, General Equilibrium Analysis of

Trade Policy, Balance of Payment, Exchange Rate, Trade Agreements, Anti trade arguments

Research Methodology EAG 491-1 (C: 15/00/35)

Research project formulation: Identification of research problem, Its significance to the industry, Literature survey, Theory/hypothesis, Proposed experiment techniques/methods, Methods for da handling/analysis, Budgeting, Time schedule, Scientific writing: Importance of scientific skills, structure and layout of research paper/theses/ dissertations: Abstract. Introduction, Objectives, Material and Methods/Methodology, Results, Discussion and conclusion, Acknowledgement, Citation of Literature/references/Bibliography

New Product Development PLT 421-1 (C: 15/00/35)

Opportunity identification and selection: new products process, opportunity identification, and strategic planning for new products. Concept generation: preparation and alternatives, problem-based ideation, and perceptual mapping. Concept evaluation: concept evaluation system, concept testing, and product protocol. Development: design, development team management, and product use testing. Launch: strategic launch planning, market testing and launch management

Quality Assurance and Certification PLT 422-2 (C: 25/10/65)

Introduction (importance of food safety/ food borne illness/ major outbreaks in the world), Cleaning and sanitation in processing factory, Designing a Factory (Coconut & Rubber products), Personal hygiene, GMP/GAP, HACCP, Codex Alimentarius Commission, ISO and SLS standards for Coconut and Rubber products, Laboratory accreditation, Total quality management and other novel concepts, Personal hygiene analysis, Developing a HACCP plan to a factory

Applications of Nanotechnology in Palm & Latex Products PLT 441-1 (C: 15/00/35)

Introduction, Changes of properties of Nano materials, Synthetic approaches of Nano materials, Types of Nano materials, (Carbon nanotubes, Fullerenes, Metal based materials, Dendrimers and Nanocomposites), Properties of Nano materials, Nano emulsions and Nano clays, Applications of Nano materials in different fields (Agriculture, Food, Rubber, polymers and Medicines)

Rubber Products Designing and Development PLT 442-2 (C: 15/30/55)

Principles of product design and choice of ingredients, Synthetic rubber products, Design and manufacture of tyres, cables, belting, hoses, rubber metal bonded

products, Design of Nanocomposites using rubbers and other polymers, Rubber blending formulations, Use of rubbers and other polymers in special applications: Self-healing, flame retardants, smart polymers, bio composites etc., Colloids and Surface coatings

Industrial Training PLT 481-2 (CN: 00/80/20)

Major Activities-Choose a process to work on:describe the process, think about ways to improve this process, formulate a specific problem statement (and set a) measurable goal for improvement, identification of causes for this problem, organize the causes & identification of most significant cause (as judged by the goal for improvement),learnthe construction and use of charts, discuss collecting dataplan and make a presentation

YEAR: 4 SEMESTER: 2

Research Project PLT 491-8 (C: 00/200/200)

The research project is to be carried out on an individual basis, under the supervision of a (senior) staff member and/or an industrial supervisor, who will monitor progress, and provide an expert input to your work. The experimental work may be carried out in the laboratories in the department, in a sponsoring company, or via alternative arrangements. This includes analysis of a problem as provided by a sponsoring organization related to the theme 'value addition', project planning, use of information services (computer assisted literature and patent search), critical evaluation of results, report writing, oral presentations and finally production of a research project report/thesis

Achievements
of Graduates of
Bachelor of Science Honours(BScHons) in Palm & Latex Technology and Value Addition Degree Programme

Within a short period of time I was able to fulfill my goals as I planned and it is because of studying a special degree programme at Uva Wellassa University. Up to now, I was able to fulfill each and every task which was given by the industry both local and international scale because of the theoretical knowledge and practical experience obtained inmy BSc studies. It was also an advantage for my further studies in Quality Assurance and Quality Control, Production, Research & Development as well as Engineering aspects. I have been working as the Production Manager in Serendipol (Pvt.) Ltd., The "Dr. Bronner's Fair Trade and Organic Project", USA from 2015 to present. Serendipol is the largest Virgin Coconut Oil (VCO) Manufacturer and the Organic Coconut Producer in Sri Lanka. Also, I was fortunate to contribute as a Committee Member in Sri Lanka Standards Institute (SLSI) for the revision of coconut oil standards in Sri Lanka. I know that I have a strong background on knowledge and skills in order to contribute to maintain organic integrity throughout farm to fork. All these were gained by the strong theoretical knowledge and practical experience that I gained during my studies at UWU. I consider that the Broad General Education, which is an identical uniqueness of UWU, is one of the important parts in my educational life because it is a great advantage for my personal and professional development. I hope the Industrial Training Programme, which comes as a compulsory course module of this Degree Programme, is a great opportunity for the undergraduates to expose to the industry with the monitoring process of UWU. I obtained my training at Adamjee Lukmanjee & Sons (Pvt.) Ltd., which is one of largest coconut oil manufacturers in Sri Lanka and exporter of wide range of coconut based products in 2013. Also, I was fortunate to start my career life at Boyagane Desiccated Coconut Mills (Pvt.) Ltd. as a Quality Assurance Manager before the graduation. Further, I have developed and introduced blended hair oil, hand soap and several cosmetics including massage oil body lotion to the industry using the research skills obtained through my studies. Finally, the main goal of my life is to contribute for adding value to coconut industry in Sri Lanka as well as to render the service as an Ambassador of UWU.

R. Chandranayake
Internal Auditor (FSSC, ISO)
Manager- Production at Serendipol (Pvt) Ltd
Pannala-Kuliyapitiya Road
Pannala

I completed the BScHons in Palm and Latex Technology and Value Addition and joined to Rubber Industry immediately after the completion of my degree. We use the best ingredients to convert the inferior to the superior and furthermore we mould the unshaped compounds to have the desired shapes, strengths and qualities which are required by the trusted customers worldwide. As in the same way BScHons in Palm and Latex Technology and Value Addition degree program has well-nourished us with the in-detailed theoretical backgrounds, industrial exposures in well recognized organizations and we have been further moulded to be the best fit in the high-tech industries.

S. Gunathilake
Assistant Production Engineer
Samson Rubber Industries (Pvt) Ltd (DSI Tyres & Tubes)

It was really fortunate to be one of profound products of my Alma-mater, Uva Wellassa University where it generates her graduates to be well-rounded in their respective fields.

Being a graduate of BScHons in Palm & Latex Technology and Value Addition degree programme helped me to be one of the experts in Rubber Industry. As a production executive of Richard Pieris Natural Foams now I handle many aspects of the production lines where I can see things and implement solutions whatever necessary as soon as it is required, things which are really necessary of a company to be retained in a very competitive environment. The strength is non-other than the blood popping in my vain fulfilled with the principles and technological aspects taught during my bachelors.

L. Samarakoon
Production Executive
Richard Pieris Natural Foams
Export Processing Zone B
Biyagama

As a production executive, I was really fortunate to step into my treasure Island, Uva Wellassa University, where I have laid my own basement by putting the diamond bricks one by one. And on it, I have built my dream palace of polymer science which is really stable. I would like to offer my heartfelt gratitude to all of my lectures and facilitators who guided me to safely arrive at the place where I am flourishing now. On top of that, it is really wonderful to be an independent learner believing that the knowledge is a quest which only the best people can pursue. On the other hand, the practical based interactive learning environment under the supervision of specialists of the polymer industry was the key point of success where I determined my career life would be like and I'm sure that the graduates of BScHons in Palm & Latex Technology and Value Addition degree programme will engrave their names in the field of Technology.

D. Peries
Executive – Production (Latex)
Midas Safety
Workware Lanka (Pvt) Ltd.
Malwana
Sri Lanka

It is a great honor for me to serve as a Lecturer at Uva Wellassa University where the place I made the foundation of my higher education from 2010 to 2014 as the 2nd intake of BScHons in Palm & Latex Technology and Value Addition degree programme. The strong theoretical background and practical exposure in wider scope in the BScHons in Palm & Latex Technology and Value Addition degree programme improved my knowledge, way of thinking and skills. Further, I was able to improve ethics, communication skills and social values through Broad General Education which is unique to UWU. Now I am teaching subjects on Rubber Technology at UWU and completed my MSc in Polymer Science and Technology at University of Sri Jayewardenepura. I exactly know that the skeleton was gifted me by the strong technology related courses taught in the degree programme. Finally, I would grateful to my University for gifting me a wonderful future.

I. Wijesinghe
Lecturer in Rubber Technology
Uva Wellassa University of Sri Lanka

BACHELOR OF

SCIENCE HONOURS (BScHons) IN TEA TECHNOLOGY AND VALUE ADDITION

DEGREE PROGRAMME

BACHELOR OF SCIENCE HONOURS (BScHons) IN TEA TECHNOLOGY AND VALUE ADDITION DEGREE PROGRAMME

Introduction

Having identified the greater need for revitalization of tea sector in Sri Lanka, Bachelor of Science Honours (BScHons) in Tea Technology and Value Addition degree programme was introduced. Tea technology & Value Addition graduates of the Uva Wellassa University of Sri Lanka will possess theoretical knowledge, conceptual and entrepreneurial skills with practical experience needed to function effectively in tea production, processing, value addition, marketing and to propose solutions to emerging problems through active involvement in research and development activities. During the first year of the programme, students are offered fundamental courses on Tea Technology & Value Addition, Essential Skills Development and Broad General Education. During the second, third and fourth years of the programme, the students are offered a wide range of courses under different key areas; production, processing, value addition and marketing with respect to the Tea Technology. Moreover, these students are provided creeper training in tea plantations for three months in their third year to equip them with hands-on-experience. An industrial training will also be offered in the final year of the degree programme to enable them to get the experience in either in the private or public sector. Further, the students undergo a research project under the theme of Value Addition in Tea Technology Industry at the second semester of the final year.

After successful completion of the degree a graduates should be able to;

- apply broad general knowledge and skills to solve emerging issues and problems in the industry with an innovative spirit.

- demonstrate managerial competencies through skillful planning, organizing, leading and controlling of plantation resources.

- contribute novel and improved methods and techniques demonstrating their techno-preneurial skills to the tea industry through involvement in crop management and tea processing practices, research and scientific inquiry, critique and synthesis.

- make use of information effectively and efficiently to pursue their duties and become effective communicators who would create relationship and values through persuasion, negotiation and in furthering their career advancement.

COURSE OUTLINE OF BACHELOR OF SCIENCE HONOURS (BScHons) IN TEA TECHNOLOGY AND VALUE ADDITION DEGREE PROGRAMME

YEAR: 1 SEMESTER: 1

No	Course Code	Course Title	Units	C/O/CN*
1	BGE 121-2	Ethics and Law Basics	2	C
2	ESD 103-2	Information Technology	2	C
3	ESD 121-1	English Language	1	C
4	EAG 101-1	Mathematics for Biological Science	1	C
5	EAG 112-1	Principles of Entomology	1	C
6	EAG 113-1	Principles of Microbiology	1	C
7	EAG 114-2	Principles of Crop Physiology	2	C
8	EAG 141-2	Agricultural Meteorology & Climatology	2	C
9	TEA 111-1	Tea Botany	1	C
10	TEA 131-1	Overview to Tea Industry	1	C
11	TEA 151-2	Introduction to Agriculture	2	C
12	ESD 151-1	Sinhala (Level 01)	1	CN
	ESD 161-1	Tamil (Level 01)	1	CN

YEAR: 1 SEMESTER: 2

No	Course Code	Course Title	Units	C/O/CN*
1	ESD 111-1	Communication Skills I	1	C
2	ESD 122-1	Communicative English	1	C
3	ESD 141-2	Quantitative Reasoning	2	C
4	EAG 115-1	Principles of Pathology	1	C
5	EAG 131-3	Principles of Agricultural Economics	3	C
6	EAG 142-2	Principles of Agricultural Engineering	2	C
7	EAG 171-2	Principles of Soil Science	2	C
8	TEA 152-3	Tea Cultivation and Management	3	C
9	TEA 161-1	Introductory Food Chemistry	1	C
10	TEA 162-1	Tea and Health	1	C
11	ESD 152-1	Sinhala (Level 02)	1	CN
	ESD 162-1	Tamil (Level 02)	1	CN

YEAR: 2 SEMESTER: 1

No	Course Code	Course Title	Units	C/O/CN*
1	BGE 211-2	Aesthetic Studies	2	C
2	ESD 221-1	Effective English Usage	1	C
3	EAG 211-2	Basic Genetics	2	C
4	EAG 261-1	Principles of Food Science	1	C
5	TEA 241-2	Water Management Technology	2	C
6	TEA 251-2	Other Beverage and Spice Crops	2	C
7	TEA 252-2	Other Plantation Crop Production	2	C
8	TEA 261-2	Basic Analytical Chemistry	2	C
9	TEA 262-1	Basic Organic Chemistry	1	C
10	TEA 271-2	Plant Nutrition and Soil Fertility Management	2	C

YEAR: 2 SEMESTER: 2

No	Course Code	Course Title	Units	C/O/CN*
1	BGE 213-1	History	1	C
2	BGE 214-1	Geography	1	C
3	ESD 222-1	Explorative English	1	C
4	EAG 201-1	Basics in Statistics	1	C
5	EAG 221-2	Agribusiness Management	2	C
6	TEA 211-1	Basics in In Vitro Techniques	1	C
7	TEA 212-2	Pests and Disease Management	2	C
8	TEA 231-2	Financial Accounting	2	C
9	TEA 242-2	Tea Processing Technology I	2	C
10	TEA 253-1	Crop Diversification	1	C
11	TEA 263-2	Tea Chemistry	2	C

YEAR: 3 SEMESTER: 1

No	Course Code	Course Title	Units	C/O/CN*
1	ESD 311-1	Communication Skills II	1	C
2	EAG 301-1	Experimental Designs	1	C
3	EAG 311-2	Advanced Agricultural Microbiology	2	C
4	EAG 312-2	Introduction to Biotechnology	2	C
5	EAG 323-2	Agricultural Marketing and Price Analysis	2	C
6	EAG 324-2	Agricultural Technology Dissemination	2	C
7	EAG 342-2	Geographic Information Systems and Remote Sensing	2	C
8	EAG 343-2	Phyto-Chemistry & Extraction Technology	2	C
9	TEA 311-2	Advanced Tea Physiology	2	C
10	TEA 341-2	Tea Processing Technology II	2	C
11	TEA 381-2	Field Training on Tea Production	2	C
12	EAG 349-1	Instrumentation in Agricultural Research	1	CN

YEAR: 3 SEMESTER: 2

No	Course Code	Course Title	Units	C/O/CN*
1	TEA 312-2	Tea Cultivar Development	2	C
2	TEA 321-1	Ecotourism	1	C
3	TEA 331-1	Agricultural Policies	1	C
4	TEA 332-1	Tea Auctioning	1	C
5	TEA 333-1	Environmental Impact of Tea Industry	1	C
6	TEA 334-2	Tea Resource Economics	2	C
7	TEA 342-2	Energy Management in Tea Processing	2	C
8	TEA 343-1	Application of GIS and Remote Sensing	1	C
9	TEA 345-2	Tea Process Engineering and Factory Automation	2	C
10	TEA 351-2	Organic Tea Production	2	C
11	TEA 371-2	Land Reclamation and Soil Conservation Techniques	2	C

YEAR: 4 SEMESTER: 1

No	Course Code	Course Title	Units	C/O/CN*
1	EAG 401-2	Bio Statistics	2	C
2	EAG 422-2	Human Resource Management	2	C
3	EAG 431-2	Export Import Procedures	2	C
4	EAG 432-2	International Trade and Finance	2	C
5	EAG 491-1	Research Methodology and Scientific Writing	1	C
6	TEA 421-1	New Product Development	1	C
7	TEA 422-2	Quality Assurance and Certification	2	C
8	TEA 451-1	Climate Change and Adaptations	1	C
9	TEA 461-2	Tea Packaging and Value Addition	2	C
10	TEA 481-2	Industrial Training	2	CN

YEAR: 4 SEMESTER: 2

No	Course Code	Course Title	Units	C/O/CN*
1	TEA 491-8	Research Project	8	C

* C-Compulsory courses, O-Optional courses, CN-Compulsory-Non Credit courses

YEAR: 1 SEMESTER: 1

Refer BGE and ESD subjects offered in this semester under section "Course Structure" (Page No: 47-51).

Mathematics for Biological Science EAG 101-1 (C: 10/10/30)

Basic concepts in Algebra, Equations and Inequalities, Law of Indices and logarithmic functions, Functions (graphical function, composition of function, Inverse function), Limits of functions, Derivatives of a function, Integration of a function, Real world application of Mathematics functions

Principles of Entomology EAG 112-1 (C: 10/10/30)

Internal and External Morphology of insects, Physiology of insects, Insect metamorphosis and its physiology, molting process of insects, Introduction to Acarology and Nematology

Principles of Microbiology EAG 113-1 (C: 10/10/30)

Introduction to Microbiology, Introduction to Prokaryotic Microorganisms, Introduction to Eukaryotic Microorganisms, Introduction to Acellular Infectious Agents, Microbial Growth, Growth Control of Microorganisms, Microbial Metabolism, Microbial Genetics, Role of Microorganisms in Agriculture

Principles of Crop Physiology EAG 114-2 (C: 24/12/64)

Introduction (Crop physiology vs plant physiology, Significance of studying crop physiology), Growth and Development, Growth curves and Growth indices (CGR/ AGR/RGR/NAR/LAI/LAD), Growth analysis approaches, Crop development and its controlling factors], Radiation interception, Photosynthesis and dry matter accumulation [Different mechanisms (C3, C4 and CAM), Factors affecting photosynthesis and dry matter accumulation], Biomass partitioning and harvest index (HI), Respiration, Plant water relations, Root Physiology, Physiological basis of crop yields and its improvements

Agricultural Meteorology and Climatology EAG 141-2 (C: 28/04/68)

Introduction to the course evaluation and references, Applications of Meteorology and Climatology in Agricultural Production, Different Atmospheric parameters & their impact on Agriculture, Recording of meteorological data from Meteorological and Agro-met stations , Meteorological Instruments, Introduction to Analysis of climate data, Climate classification, Climate of Sri Lanka, Rainfall Patterns and Cultivation Seasons of Si Lanka , Agro Ecological Regions of Sri Lanka, Global atmospheric and

oceanic circulation, Air Pollution, Global Warming, Climate Change and Climatic hazards affecting agricultural production

Tea Botany TEA 111-1 (C: 10/10/30)

Introduction to Taxonomy & Plant systematics, Internal and External characters and Modifications of Plant Vegetative Organs of Vascular Plants (Tracheophytes), Floral Biology, Seed Development and Fruit Formation, Origin and Distribution and Classification of Tea, Vegetative and Reproductive Characterization of Tea and allied species, Seed and Clonal Propagation of Tea

Overview of Tea Industry TEA 131-1 (C: 15/00/35)

History of tea plantation sector, Institutional frame work of Sri Lanka Tea Industry, Present status and future challenge of Sri Lanka Tea Industry, Global Tea Industry, Analysis of production, productivity and consumption trends, Marketing and value addition of Sri Lankan Tea, Labour Management and planning in tea sector, Social development and welfare activities in the tea sector

Introduction to Agriculture TEA 151-2 (C: 30/00/70)

History and present status of agriculture sector in Sri Lanka, Plant propagation techniques, cropping seasons, crop establishment, Plant nutrition and soil fertility management, harvesting and post- harvest technology, major plantation crops, rice production, horticultural crop production, New techniques used in Agriculture (protected agriculture, micro-irrigation techniques, etc), agriculture related industries and services

YEAR: 1 SEMESTER: 2

Refer BGE and ESD subjects offered in this semester under section "Course Structure" (Page No: 47-51).

Principles of Pathology EAG 115-1 (C: 10/10/30)

Concept of Plant Health and Plant Pathology - History of Plant Pathology, Definition and Terminology Used in Plant Pathology, Economic Importance of Plant Diseases, Causesof Plant Diseases- Biotic, Abiotic and Mesobiotic, Symptoms Caused by Different Plant Pathogens (Bacteria, Fungi, Virus, Nematodes), Specialized Techniques for Identification and Study of Disease Causing Agents and Plant Diseases - Koch's Postulation, Disease Triangle - Definition, Concept and Importance, Disease

Development – Parasitism and Pathogenicity, Mode of Pathogenicity, Inoculum and Disease Activity, Host-Parasite Relation, Stages in Development of Disease (Disease Cycle), Plant Defense Mechanisms

Principles of Agricultural Economics EAG 131-3 (C: 30/30/90)

Introduction to Agricultural Economics, Consumer behavior, Demand and supply, Production and costs, Cost of production, Perfect competition, Monopoly, Monopolistic competition, Oligopoly, Introduction to Welfare Economics, Introduction to Fisheries Economics, Introduction to Environmental Economics, Introduction to Macroeconomics

Principles of Agricultural Engineering EAG 142-2 (C: 27/06/67)

Basic concepts of Mechanics: Vectors and Scalar Quantities, Equations of Motion, Acceleration and Different types of Acceleration, Mass and Inertia, Newton's laws and their applications, Structural Analysis of Beams and Trusses: compression and Tensile Forces, Free Body Diagrams, Basic Concepts in Trigonometry, Static Determinacy and Stability of Beams and Trusses, Basic Concepts of Fluid Mechanics: Properties of Fluids (density, viscosity, pressure), Liquid in motion (flow discharge, continuity of flow), Energy of a flowing fluid (Bernoulli's thermo and its application), Basic concepts in Thermodynamics: Types of system, Type of equilibrium, Heat and Temperature, Specific Heat Capacity and Specific Latent Heat, States of Matter and Phase Transitions, Internal energy, The Laws of Thermodynamics (Zeroth and First Law) and applications, Psychometrics: Psychometric chart and parameters, Psychometric process and its applications

Principles of Soil Science EAG 171-2 (C: 24/12/64)

Introduction, Major rocks and minerals, Rock weathering and soil formation, Soil profile, Soil properties, soil physical properties, soil chemical properties and soil biological properties, Soil classification using Soil Taxonomy (USDA method) and World Reference Base (WRB), Major soil types in Sri Lanka and their distribution

Tea Cultivation and Management TEA 152-3 (C: 37/24/89)

Ecological requirements for tea cultivation, Agro-ecological regions suitable for tea cultivation, Land Selection, Tea Varieties/Jats/Types, Tea Nursery Management, Land Preparation, Soil Rehabilitation/Establishment of Shade, Planting of Tea, After Care Operation – Fertilizer Application/Shade Management/Bush Management, Establishment of Green manure crops and cover crops, Pruning of Tea, Harvesting of Tea

Introductory Food Chemistry TEA 161-1 (C: 10/10/30)

Chemistry and functions of food constituents, including water, carbohydrates, proteins, lipids, vitamins and minerals, Chemistry of changes occurring/ during processing, storage and utilization. Principles, methods and techniques of analysis of food

Tea and Health TEA 162-1(C: 15/00/35)

Introduction on human nutrition and nutritional basis of diseases, chemistry and nutritional value of tea, biological activities of tea components, Health benefits of other minor chemical constituents, effect of tea consumption on human health, Comparison of green tea and black tea health benefits, Effects of overdoses of tea

YEAR: 2 SEMESTER: 1

Refer BGE and ESD subjects offered in this semester under section "Course Structure" (Page No: 47-51).

Basic Genetics EAG 211-2 (C: 25/10/65)

Introduction – History of Genetics, Mendelian Genetics, Gene, Cell Division - Mitosis and Meiosis, Mendelian Genetics Deviations, Pedigree Analysis and Sex Determination, Chromosome Mutations, Linkage and Genetic Maps, Quantitative Genetics, Population Genetics, Molecular Genetics: Replication, Transcription, Translation, Gene Expression and Regulation

Principles of Food Science EAG 261-1 (C: 12/06/32)

Introduction to food science, Food constituents, Factors that affect on food deterioration and spoilage, Food additives and their functions, Principles of food preservation and food preservation methods, Effect of processing on quality and nutritive value of food, Browning reactions of foods, Food safety and control of hazards, Quality attributes of foods, Food-borne diseases and their prevention

Water Management Technology TEA 241-2 (C: 28/04/68)

Introduction: Course Content, Evaluation Methods & List of References, Importance of water management in plantation agriculture, Estimation of crop water requirement and related calculations, Irrigation scheduling & related calculations, Irrigation Efficiencies & related calculations, Water application methods: Surface & subsurface methods of irrigation, Sprinkler & drip methods of irrigation, Drainage water management, Rainwater harvesting and groundwater management, Different

water management methods used in tea plantations, Different water management methods used in rubber plantations, Different water management methods used in coconut plantations

Other Beverage and Spice Crops TEA 251-2 (C: 26/08/66)

Introduction, importance, characteristics and classification of spice and beverage crops; Varieties, main constituents of spices and Beverage crops, Production of planting materials, Field planting of spices, Aftercare practices: Weeding, Fertilization, Pruning / de-suckering, Pest and disease management, Specific agronomic practices, Harvesting, Post-harvest processing, Flavor and aroma development of each crops, Drying of spices and Beverage crops, Spice based food additives, Processing of essential oils, Processing of Oleoresins, Value added spice products, Potential to value addition, Quality parameters of spice products, Grading and international standards, Market opportunities and potentials

Other Plantation Crop Production TEA 252-2 (C: 26/08/66)

Rubber – Statistics, Agro-climatic & soil requirements for cultivation, development of high quality planting materials, field establishment, fertilizing & aftercare practices, planting densities & spatial arrangements, rubber based farming systems & benefits, standards for harvesting & harvesting technology, use of rain guards & yield stimulants. Coconut - Agro-climatic & soil requirements for cultivation, planting material, field establishment, fertilizing, irrigation & aftercare, soil & soil moisture conservation, coconut based farming systems. Sugarcane - Overview of the sugarcane industry, Botany of sugarcane, Growth phases, Sugarcane varieties, Cultural practices in sugarcane cultivation (Propagation, Land preparation, Earthing up, Hoeing, De trashing, Weed management, Harvesting, Pest and disease management)

Basic Analytical Chemistry TEA 261-2 (C: 25/10/65)

Basic concepts of analytical Chemistry, Errors in Chemical Analysis, Sampling, Statistical analysis of data and evaluation, Chemical equilibria-equilibrium constants and effect of electrolytes, Classical methods of analysis-Gravimetry and titrimetry, Electrochemical methods of analysis-redox titrations and potentiometry, Introduction to spectrometric methods of analysis, Introduction to chromatographic methods of analysis, Separation techniques in analytical chemistry

Basic Organic Chemistry TEA 262-1 (C: 12/06/32)

Chemistry of Carbon – octet rule, bond formation, hybridization and valence bond theory, Physical properties and reactivity of organic compounds, Boiling point and solubility – changing patterns, Effecting factors – Inter molecular distance, functional group, inter molecular attractions, length of carbon chain etc, Structure

and reactivity of organic compounds (hydrocarbons, alcohols, carbonyl compounds, amines and amides), Nomenclature of organic compounds, Isomerism of organic compounds, Chemical reactivity – Substitution, addition, elimination, condensation reactions

Plant Nutrition and Soil Fertility Management TEA 271-2 (C: 20/20/60)

Tea soil: Fundamentals of tea soils; soil physical, chemical and biological properties Fertilizer mixtures: plant nutrients, their availability & deficiency symptoms, maintenance of soil acidity, fertilizer mixtures, time and method of application, correction of nutrient deficiencies, soil and leaf sampling for analysis

YEAR: 2 SEMESTER: 2

Refer BGE and ESD subjects offered in this semester under section "Course Structure" (Page No: 47-51).

Basics in Statistics EAG 201-1 (C: 10/10/30)

Elements of probability theory; Random variable and probability; Introduction to inference, sampling distribution & confidence interval; hypothesis testing, type I & type II error; Correlation and Chi-square test; regression analysis and Goodness-of-fit test

Agribusiness Management EAG 221-2 (C: 27/06/67)

Introduction to Agribusiness Management, Functions of management , Agribusiness planning, Strategic business planning, Marketing planning, Decision making making areas in agribusiness, Forms of business organizations, Record keeping and inventory management, Financial planning process, introduction to basic accounting statements, Financial analysis , Investment Appraisal, Agriculture risk management, Farm site selection, Introduction to Entrepreneurship

Basics in In Vitro Techniques TEA 211-1 (C: 12/06/32)

Introduction to plant tissue culture, Conditions for invitro propagation, Stages in invitro propagation, Importance of micropropagation, Applications of tissue culture: Haploid plant production, Invitro fertilization, Mutation breeding, Somatic hybridization, Production of secondary metabolites from cell cultures

Pests and Disease Management TEA 212-2 (C: 20/20/60)

Basics of tea pest management, A brief look at the management strategies of tea pests, Classification of pesticides, Recommended pesticides for tea cultivation and its uses, Guideline for the safe use of pesticides, Integrated pest management (IPM), Standard spray equipment, Introduction to diseases in tea, Disease management in tea, Weed Biology and Integrated Weed management (IWM) in tea

Financial Accounting TEA 231-2 (C: 25/10/65)

Introduction, Record transactions in Accounts according to basic accounting equation, Record transaction in Accounts according to the double entry system, Posts the transactions to the ledger using primary books, Prepares Trail Balance by balancing ledger accounts, Rectify the trail balance errors, Prepares Farm Financial Statements, Analyses the conceptual Framework of Financial Accounting

Tea Processing Technology I TEA 242-2 (C: 26/06/68)

Introduction to global and Sri Lankan tea manufacturing, classification of teas and its manufacturing, Introduction to Black tea manufacturing, Methods of black tea manufacturing, Pure Orthodox black tea manufacturing, Orthodox-Rotorvane black tea manufacturing, CTC black tea manufacturing, Tea Tasting, Energy Management in tea manufacturing, Quality management and certifications in black tea manufacture, Marketing and its channels of manufactured black teas, Value addition to tea manufacturing and its products

Crop Diversification TEA 253-1 (C: 13.5/03/33.5)

Introduction/Definitions of crop diversification/Importance, Agronomic/economic and environmental Benefits of Crop Diversification, Different Crop Diversification models- Multiple Cropping -Mixed cropping- [Chenna cultivation/Kandyan Forest gardens and tea + Spice crops based MC systems], Intercropping- Tea & Rubber IC/ Tea & Coconut IC/ Tea & Spice Crop IC/ Tea & Fruits IC/Coconut & spice crops/ Coconut & fruit crops, Maize +Cowpea, Maize +Mung bean , Chilli +Mung bean I, Measuring the efficacy of I/C systems- Land Equivalent Ratio (LER), Relay cropping/ Crop rotation, Agroforestry system – Ally Cropping, Utilization of bear lands/ marginal tea lands for multiple cropping with fruit crops, Planting of timber trees/ Bio fuel plants

Tea Chemistry TEA 263-2 (C: 25/10/65)

Chemical constituents in tea, Factors affecting chemical compositions of tea, Properties, functions and synthesis of tea polyphenols, tea alkaloids and other minor constituents, Changes of chemical constituents during tea processing, Chemical quality parameters of tea

YEAR: 3 SEMESTER: 1

Refer BGE and ESD subjects offered in this semester under section "Course Structure" (Page No: 47-51).

Experimental Designs EAG 301-1 (C: 10/10/30)

Basic concepts in Experimental design, Analysis of Variance (ANOVA), Complete Randomized Design, Randomized Complete Block Design, Analysis of Covaraince, Factorial Design

Advanced Agricultural Microbiology EAG 311-2 (C: 20/20/60)

Introduction; Microorganisms in Agriculture, Industry, Environment and Health Sector, Food Microbiology- Major Groups of Microorganisms and their Action on Food, Spoilage of Food, Foodborne Illnesses, Preservation of Food, Water Microbiology- Aquatic Microorganisms, Quality Standards and Indicator Microorganisms in Drinking Water, Waste Water Management, Soil Microbiology- Microorganisms in Soil, Plant-Microbe Interaction (Mycorrhizae, Plant Growth Promoting Rhizobacteria and their Effects on Plant Growth), Environmental Microbiology - Microorganisms in Biogeochemical Cycles, Use of Microorganisms as Bio-indicator, Biosensors and Bio-control Agents, Principles of Biological Treatments (Bioremediation), Microbiology in Bio fertilizers and Biogas Production

Introduction to Biotechnology EAG 312-2 (C: 22/16/62)

Introduction to Biotechnology: History and Development, Genetic Engineering Techniques and Tools and Potential Applications, Basics of Prokaryotic and Eukaryotic Genomes, DNA Isolation, quantification and Fractionation, Biotechnological Techniques: Blotting Techniques and Labeling Nucleic Acids, Restriction Enzymes, Vectors and DNA Libraries, Polymerase Chain Reaction (PCR), Synthesizing and Sequencing of DNA, Gene Cloning, Gene Transfer into Bacteria, Plant and Animal cells , DNA Fingerprinting, Bioinformatics

Agricultural Marketing and Price Analysis EAG 323-2 (C: 30/00/70)

Agri Produce Marketing, Marketed and marketable surplus, Classification of agricultural markets, Marketing costs, Product/Production Based Approaches to Improve the Profitability of Producer, Finding assured market for agri. Products, Market price, Why market price fluctuates?, Ways and objectives of pricing, Demand components of agricultural products, Market supply, risk and uncertainty, supply response functions, Marketing margins, Marketing costs and size of margins,

Seasonal variation in price, Price variations through time, Vertical coordination and contracting agriculture, Trade models, recursive models, Shift-share analysis

Agricultural Technology Dissemination EAG 324-2 (C: 20/20/60)

Introduction to agricultural Extension, Definition, Objectives, Human Behavior, Socio Economic aspects of farming, Principles of Education, Adult Education, Principles of Learning, Effective Communication, Motivation for Extension, Leadership in Extension, Principles of Effective Extension Program, Extension Teaching Methodologies, Adoption & Diffusion of Technologies, Role of Extension Agent, Planning & Evaluation of Extension Program, Challenges for Agriculture Extension

Geographic Information Systems and Remote Sensing EAG 342-2 (C: 20/20/60)

Overview (content and evaluation methods), Map, Types of Maps, scale, characteristics, coordinate systems (definitions, concepts and functions), Introducing Geographical entities, Attribute data, map features, and GIS theme, Data models used in GIS and their characteristics, GIS Applications, What is Remote Sensing? (definitions and concepts and the components), Electromagnetic Spectrum and its interactions, Remote Sensing Systems, Platforms, Signals and Sensors and scanning Systems, Airborne and space borne sensor systems, advantages and disadvantages, Applications of Remote Sensing, GPS system and its architecture

Phyto-Chemistry and Extraction Technology EAG 343-2 (C: 25/10/65)

Introduction to secondary metabolites, Structure and functions of major classes of secondary metabolites, Biosynthetic pathways, Extraction techniques and Screening for biochemical Properties, Value addition to phyto chemicals-novel trends and approaches

Instrumentation in Agricultural Research EAG 349-1 (CN: 12/06/32)

Spectroscopic techniques (Theory, Instrumentation and uses of UV and IR), Chromatographic techniques (Theory, Instrumentation and uses of GC, GCMS, HPLC and TLC), Elemental analysis (total carbon analyzer, C, H, N analyzer), Titrimetric techniques, Atomic absorption spectroscopy, mass spectroscopy

Advanced Tea Physiology TEA 311-2 (C: 26/08/66)

Introduction, Photosynthesis and productivity of tea, Respiration and productivity of tea, Yield components and their determinants, Biomass Partitioning and harvest index (HI), Physiology of shoot growth and plucking (periodicity of shoot growth, shoot growth and regeneration factors affecting shoot regeneration), Shade and tea,

Physiology of pruning and root reserves, Water relations of tea, Climate change and tea physiology; Tea production under abiotic stresses, Tea root physiology (types of roots, changes with ageing, responses to environmental factors)

Tea Processing Technology II TEA 341-2 (C: 26/09/65)

Introduction to different types of teas, Producing countries and its demands in the current global market, Classifications of tea manufacturing, Introduction to non oxidized, semi oxidized and post oxidized tea manufacturing, Green tea manufacturing-pan firing and steaming methods, Oolong tea manufacturing, Other special tea manufacturing, Value addition to tea; instant teas manufacturing, special design tea manufacturing etc

Field Training on Tea Production TEA 381-2 (C: 00/90/10)

One month Field Training Programme conducts at Telbedde, Wewesse, Glen Alpine and Ury Tea Estates of Balangoda Plantations PLC on Uprooting, Soil Rehabilitation, Soil Conservation, Replanting, Pruning, Shade Management, Fertilizer Application, Nursery Management, Plucking, Record Keeping, Pests and Disease Management, Chemical Spraying, Labor Management and Welfare, Muster, Orthodox Manufacturing, Rotorvane Manufacturing

YEAR: 3 SEMESTER: 2

Tea Cultivar Development TEA 312-2 (C: 28/06/66)

History and Milestones, Breeding Objectives, Breeding Techniques: Selection and Hybridization, Breeding methods of self-pollinated crops; Mass Selection, Pureline Selection and for cross pollinated crops; Progeny Selection, Hybridization, Breeding based on controlled mating; Pedigree Method, Bulk Population Method, Single Seed Descent Method, Backcross Method for self pollinated crops and cross pollinated crops, Genetic Improvements in Asexually Propagated Crops, Breeding for Heterosis, Resistance to Pests and Diseases, Wider Adaptability and Stability, Participatory Plant Breeding, Application of In Vitro Techniques in Asexually propagated crops, Mutation Breeding, Molecular Breeding, Participatory plant breeding, Procedure to Release Varieties, Intellectual Property Rights of Breeders and Seed Act, Application of Breeding Techniques in Tea Cultivar Development

Ecotourism TEA 321-1 (C: 13/06/31)

Introduction to the tourism, Introduction to eco tourism, emerging concepts in ecotourism, ecotourism as a worldwide phenomena, ecotourism in 3rd world countries, prospects for sustainability, concept of carrying capacity, concept of

planning ecotourism destinations, Ecotourism and community development, Concept of eco lodges, Ecotourism in Sri Lankan context, Environmental, socio cultural and economical benefits and costs of ecotourism, Ecotourism and Entrepreneurship

Agricultural Policies TEA 331-1 (C: 13/04/33)

Introduction to Agricultural Policies, Agricultural policies and laws related to land use, Plant imports and exports, Phytosanitary regulations, Agrochemical imports and use, Subsidiary schemes in agriculture, Impact of Subsidiary schemes in agriculture, credit policy, research policy, price policy, extension policy, marketing policy, subsidy policy, land policy, trade policy

Tea Auctioning TEA 332-1 (C: 27/06/17)

Introduction to marketing of teas, Introduction to Global tea markets and Sri Lankan tea market, marketing channels applied in marketing tea, advantages and disadvantages of each marketing channels, evolution of tea auction systems in the world and Colombo tea auction, pre-auction, auctioning and post auction procedures in marketing teas, tea tasting, introduction of auctioning and other strategies

Environmental Impact of Tea Industry TEA 333-1 (C: 15/00/35)

Brief introduction on the relationships between environment to achieve high quality production in tea industry, impact of climate change for tea production, importance of carbon sequestration, deforestation, habitat conversion, soil conservation occur in tea cultivation and soil degradation, different environmental and health impacts occurred by overuse of agrochemicals and emission of gases/substances with tea manufacturing processes and effect of waste materials

Tea Resource Economics TEA 334-2 (C: 30/00/70)

Introduction of tea production system as a major user of resources, resource requirement of tea cultivation, quantification and valuation- from nursery to the field, cost of tea cultivation, resource requirement of tea processing (primary), quantification and valuation – from receiving to the factory up to dispatch of made tea, cost of tea processing, efficient use of resources in tea production: land use, human resource (labour), capital investment, fuel & energy and other material inputs, economic viability of tea production system, basic principles in resource management, production economics, labour economics, investment appraisal, land economics and management

Energy Management in Tea Processing TEA 342-2 (C: 28/06/66)

Energy and the environment, Energy management and improvements, Renewable energy and non renewable energy source, Introduction to the Ceylon Tea

Manufacture, Energy consumption in tea manufacture, Electrical energy used in tea manufacturing, Thermal energy used in tea manufacturing, Boiler applications, Direct firing, Mechanical energy used in tea manufacturing, Energy Management Process, Energy Audit in a tea factory, Energy monitoring, targeting and waste avoidance, Energy saving methods and energy saving equipment/Efficient use of energy, Implementation of an energy plan, Waste Avoidance, Energy management and certifications, Emerging technologies in energy consumption, Dendro power, Lighting, Office buildings, Cleaner production

Application of GIS and Remote Sensing TEA 343-1 (C: 10/10/30)

Application of GIS and Remote sensing (Introducing the possible application areas, especially in agriculture), currently operating satellites and their applications, Spectral characteristics of spatial properties, signature spectra, and sensor characteristics and selection of appropriate sensors, Digital image processing and interpretation (supervised and unsupervised classification), RS generated Indices and their application, GNSS, GIS, functionality, and challenges, Overlay, proximity and other spatial analysis, methods in GIS, GIS application

Tea Process Engineering and Factory Automation TEA 345-2 (C: 28/06/66)

Basic electricity, Engineering aspects in tea machinery, Heat exchangers & Combustion of fuels, Properties of air, Factory maintenance, Industrial safety, Instrumentation, Process monitoring & Automation

Organic Tea Production TEA 351-2 (C: 24/12/64)

Introduction, Status of organic agriculture, Definition, IFOAM, Principles of organic agriculture, Organic farming Vs conventional Farming, Relevance of organic tea cultivation, Establishment and maintenance of organic tea plantations, Conversion of tea plantations, Maintenance of new and established tea plantations, Nutrient Management, Biofertilizer and compost production, Crop protection, Post-harvest and manufacturing practices, Orthodox, CTC, Oolong, Green tea,, Manufacturing facilities, Storage, packing, transportation, Inspection and certification, Marketing of organic tea

Land Reclamation and Soil Conservation Techniques TEA 371-2 (C: 27/06/67)

Introduction, Reasons for land degradation and types of land/soil degradation, Land desertification process, Major types of soil degradation: salinisation, alkalinasation, acidification, Land reclamation and remediation, Soil erosivity, Erodibility, Causes

and control of soil erosion, Main soil improvement/conservation techniques in Tea, Soil conservation act, Incentives provided for soil conservation

YEAR: 4 SEMESTER: 1

Bio Statistics EAG 401-2 (C: 20/20/60)

Regression analysis with data transformation methods, Modeling binary and categorical data, Multivariate analysis, Application of Nonparametric test (One Sample test, Tests for two related samples, Test for two independent samples, Test for K- related samples, Test for K- independent samples, test for correlation)

Human Resource Management EAG 422-2 (C: 26/04/70)

Introduction to HRM, Strategic Human Resource Planning, Change Management, Job Analysis, Human Resource Planning & Recruitment, Employee Testing & Selection, Training & Development, Performance Appraisal, Human productivity measurement, Compensation, Occupational Health & Safety, Basic Labor Laws, Labor Relations, Salary & Wages Calculations

Export Import Procedures EAG 431-2 (C: 26/08/66)

International Trade-Institutional Framework and Basics, Export Marketing Opportunities, Methods of settlement of Payment & Export and Import Finance , International Commercial Terms-2010 (INCOTERMS-2010), Export Procedures and Documentation, Import Procedures and Documentation, Quality Controls on export and imports, Shipping and Marine Insurance , Freight Forwarding and Logistics

International Trade and Finance EAG 432-2 (C: 30/00/70)

Introduction to International Trade, Theory of Comparative Advantage, Classical Model and Specific Factor Model, Heckscher – Ohlim Model & Technology Difference Model, Partial Equilibrium Analysis of Trade Policy, General Equilibrium Analysis of Trade Policy, Balance of Payment, Exchange Rate, Trade Agreements, Anti trade arguments

Research Methodology and Scientific Writing EAG 491-1 (C: 15/00/35)

Research project formulation: Identification of research problem, Its significance to the industry, Literature survey, Theory/hypothesis, Proposed experiment techniques/methods, Methods for da handling/analysis, Budgeting, Time schedule, Scientific writing: Importance of scientific skills, structure and layout of research

paper/theses/ dissertations: Abstract. Introduction, Objectives, Material and Methods/Methodology, Results, Discussion and conclusion, Acknowledgement, Citation of Literature/references/Bibliography

New Product Development TEA 421-1 (C: 13/04/33)

Introduction to new product development (NPD) and its importance, Classification of new products, NPD Process, Product Life Cycle, Risk, time, cost and quality management in NPD, R&D in NPD, Market-oriented NPD

Quality Assurance and Certification TEA 422-2 (C: 25/10/65)

Introduction (importance of food safety), cleaning and sanitation in processing factory, factory design, personal hygiene, GMP/GAP, HACCP, Codex Alimentarius Commission, ISO and SLS standards, laboratory accreditation, total quality management and other novel concepts

Climate Change and Adaptations TEA 451-1 (C: 12/06/32)

Introduction: Current trends and future projections of climate change and its potential effects on global food security, The influence of agriculture on climate change, Introduction to the concepts related to climate change: Vulnerability, Adaptation and Mitigation, Adaptation strategies and mitigation options for climate change, Carbon sequestration to mitigate climate change (including soil carbon sequestration), Carbon trading from agro-forestry systems, fruit orchards and plantation crops, Introduction to crop modeling and simulations definitions, climate change and modeling methodology, Overview of Crop Simulation Modeling and impacts of climate change on agricultural production systems, Modeling crop responses (i.e. yield, nutrition and water uptake) to changes in temperature, rainfall and CO2 , Constructing a basic climate model for climate change/forecasting

Tea Packaging and Value Addition TEA 461-2 (C: 25/10/65)

Introduction to secondary tea manufacturing to produce value added tea products; blending, flavoring, packing and distribution of produced tea products, Quality management during the value added tea products, requirements of quality certifications in exportations and the quality of teas, the role of packaging to maintain the quality of teas , Introduction to food packaging, functions of food packaging, factors considered in designing a package , types of packages, packaging materials and their classification, advantages and disadvantages of different types of packing material, packaging technologies, packages, packaging materials and packaging,

machineries used to produce different types of tea and tea based products, novel and current trends applied in food packaging, current trends and potential novel packages introduced to tea industry, food packaging, and environmental issues, legislation rules, and regulations, labeling and labeling regulations

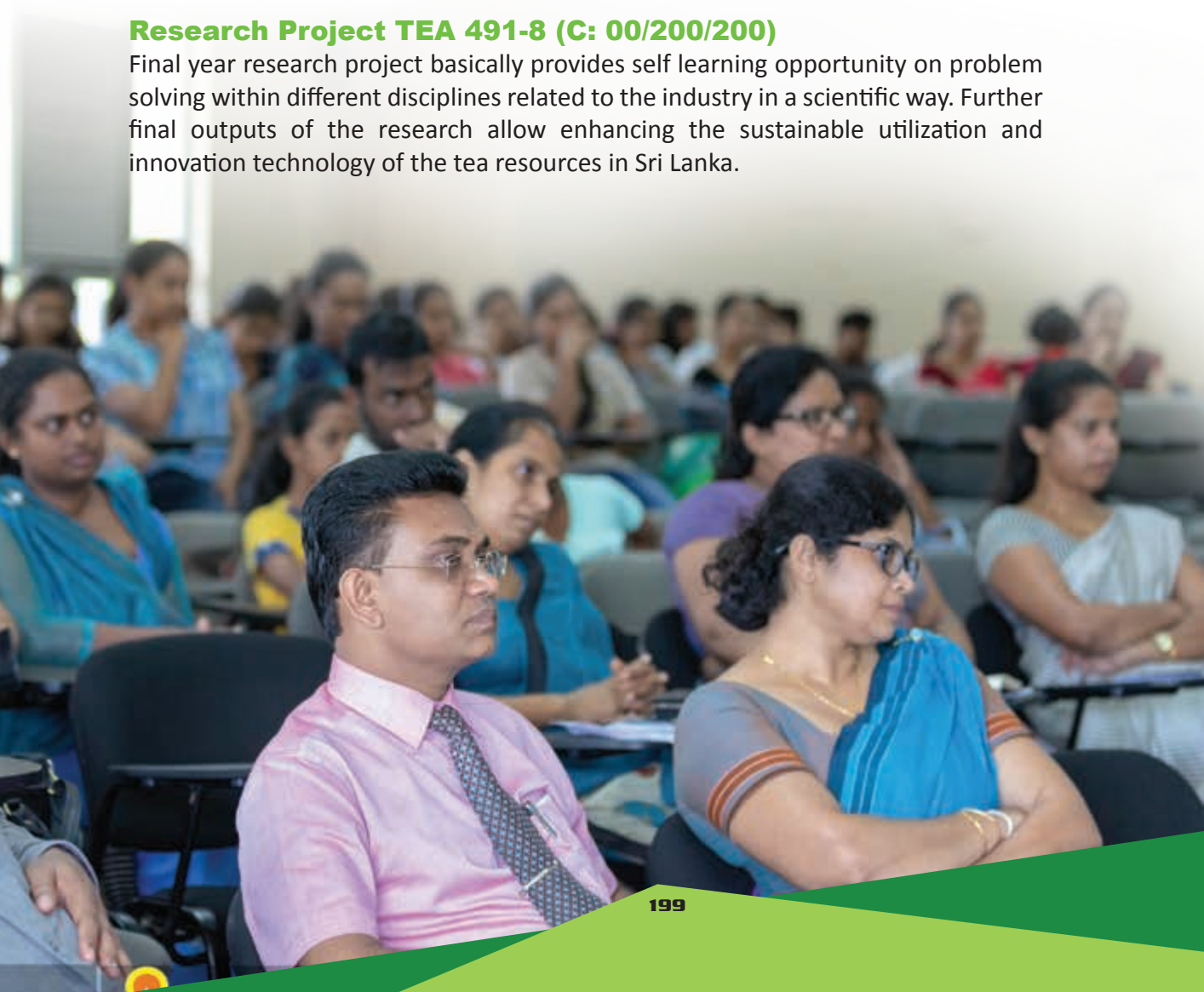
Industrial Training TEA 481-2 (CN: 00/80/20)

Students will be sent to reputed tea based companies; tea plantation companies, tea brokering, tea exporting companies, semi government and government institutes, Students will be engaged on the work assigned in capacity associated with their knowledge and skills

YEAR: 4 SEMESTER: 2

Research Project TEA 491-8 (C: 00/200/200)

Final year research project basically provides self learning opportunity on problem solving within different disciplines related to the industry in a scientific way. Further final outputs of the research allow enhancing the sustainable utilization and innovation technology of the tea resources in Sri Lanka.



Achievements
of Graduates of
Bachelor of Science Honours(BScHons) in Tea Technology & Value Addition Degree Programme

For me, Uva Wellassa University is my second family. I felt very happy and secure there, and I loved living in Badulla. Uva Wellassa University has excellent facilities and a supportive environment for undergraduates. I was amazed with the University infrastructure and I felt like I had everything I need to succeed there. The relationship between students and Lecturers was very friendly and I always felt listened to and supported by my Lecturers.I graduated with BSc in Tea Technology and Value Addition (Hons) in 2012. I was an internee at Forbes and Walker Tea Brokers during that time. Then, I got an opportunity to work as a Trainee Tea Taster at Tea and Herb Company and worked for two good years there.

Currently, I am working for Beta Gida Sanayi Ve. Ticaret AS, as the country representative for Kenya. We are among the top 10 tea brands in the world. I involved in tea grading, tasting, procurement, blending and supervision of the production. UWU has given me confidence to become an active global citizen and pursue my passion of making an impact through research.I have a message to my junior fellows that we cannot always build the future for our youth but we can build our youth for the future. Remember,the reward of every good action will be good only.

P. Bodikotuwa
Executive - International Business Relations
Beta Gida Sanayi ve.Ticaret AS
EATTA building
Nyerere Avenue

Ceylon Tea Industry has more than 150 years older history. When any industry becomes older it obviously built a systematic path. According to my point of view the path of entering to tea industry is such system. But the reason behind entering in to tea industry and having a competitive advantage for myself is Tea Technology & Value Addition Degree Programme and UWU culture. Today I am an active tea Taster.

K. Perera
Tea Executive - Trading and Marketing
The Tea & Herbs Company

Being a proud product as an entrepreneur running my own business in the tea sector, I have managed to share and disseminate the fruitful knowledge laid experience reaped by Tea Technology & Value Addition degree program which also propped up myself in getting inclined to my present career as an entrepreneur with self-confident and a Procurement Executive in Sri Lanka's leading Tea Export Company.

P. Nuwan
Purchasing Executive - Amazon Trading (Pvt Ltd
Entrepreneur - Lollicup Teas

Value of UWU reflects the achievement of my career. Not only knowledge more than that. Consequently, skills, attitudes social experience are the essence of the undergraduateship that has been sharpen the present status. For instances, creeper training experience enhance the willingness to accept more challenges. Moreover, Broad general studies, Law basics, Psychology and Sociology streams inspired me to search new knowledge par with highly competitive world. As a result, I was able to become a SLAS officer. Thus, I strongly believe the blessings of mother UWU that lead us to reach our goals. I congratulate future graduates of UWU to become all-rounders that the nations need.

U.D.R.E. Ruwanpura
Assistant Divisional Secretary
Sri Lanka Administrative Service

Even though I was born in front of Geragama tea factory, the real tea exposure was received from Tea Technology and Value Addition degree programme. World recognized multidisciplinary education system followed by the university was really helpful to gain all-round competencies to become a complete tea professional. Surrounding Lush green tea fields and blue misty hills has created UWU a real paradise to study on tea aspects. Entrepreneurial skills obtained from the degree program made me so comfortable during my 3 years of stay in China as a tea master. It's a great pleasure to say that all my success is due to the head start I received from the mother UWU.

N. Wisnagalage
Senior Executive - Tea Department
Heritage Teas (Pvt) Ltd

BY-LAWS OF THE FACULTY
OF ANIMAL SCIENCE & EXPORT AGRICULTURE

BY-LAWS OF THE FACULTY OF ANIMAL SCIENCE AND EXPORT AGRICULTURE UVA WELLASSA UNIVERSITY OF SRI LANKA

By-Laws approved by the Council of the Uva Wellassa University at the 132nd meeting held on 18.05.2018 and subjected to confirmation at its 133rd meeting held on 29.06.2018 under section 135 of the University Act No. 16 of 1978.These by-laws are applicable for all degree programs offered by the faculty.

1. Subject to these By-Laws, a student may be awarded the Degrees of Bachelor of Animal Science [BAScHons], Bachelor of Science in Aquatic Resources Technology [BScHons (Aquatic Resources Technology)], Bachelor of Science in Export Agriculture [BScHons (Export Agriculture)],Bachelor of Science in Palm & Latex Technology and Value Addition [BScHons (Palm & Latex Technology and Value Addition)] and Bachelor of Science in Tea Technology and Value Addition [BScHons (Tea Technology and Value Addition)] if he/she,

(a) has been admitted to the University as a student under section 15 (vii) of the Universities Act No. 16 of 1978;

(b) has been a duly registered student of the University for the period prescribed for courses of study leading to the Degrees of Bachelor of Animal Science [BAScHons], Bachelor of Science in Aquatic Resources Technology [BScHons (Aquatic Resources Technology)], Bachelor of Science in Export Agriculture [BScHons (Export Agriculture)], Bachelor of Science in Palm & Latex Technology and Value Addition [BScHons (Palm & Latex Technology and Value Addition)] and Bachelor of Science in Tea Technology and Value Addition [BScHons (Tea Technology and Value Addition)] and his/her registration continues to be in force;

(c) has completed, to the satisfaction of the Vice Chancellor, the courses of study leading to the Degrees of Bachelor of Animal Science [BAScHons], Bachelor of Science in Aquatic Resources Technology [BScHons (Aquatic Resources Technology)], Bachelor of Science in Export Agriculture [BScHons (Export Agriculture)], Bachelor of Science in Palm & Latex Technology and Value Addition [BScHons (Palm & Latex Technology and Value Addition)] and Bachelor of Science in Tea Technology and Value Addition [BScHons (Tea Technology and Value Addition)] prescribed by these By-Laws, and the Rules and Regulations made by the University in respect of examinations/ assessments pertaining to each course unit counted towards the said Degrees;

(d) has satisfied the following requirements-

(i) he/she should have pursued the relevant programme of study for a minimum period of four academic years;

(ii) he/she has passed all the examinations leading to the Degrees of Bachelor of Animal Science [BAScHons], Bachelor of Science in Aquatic Resources Technology [BScHons (Aquatic Resources Technology)], Bachelor of Science in Export Agriculture [BScHons (Export Agriculture)], Bachelor of Science in Palm & Latex Technology and Value Addition [BScHons (Palm & Latex Technology and Value Addition)] and Bachelor of Science in Tea Technology and Value Addition [BScHons (Tea Technology and Value Addition)];

(ii) he/she should have accumulated a minimum number of Credits to complete the degree as given in the table.

Degree	Compulsory Credits	Compulsory Non Credits	Optional
BAScHons (Animal Science)	115	12	05
BScHons (Aquatic Resources Technology)	112	09	08
BScHons (Export Agriculture)	120	05	04
BScHons (Palm & Latex Technology and Value Addition)	129	05	00
BScHons (Tea Technology and Value Addition)	128	03	00

(iii) in the case of BScHons (Export Agriculture), he/she should have completed 57compulsory credits specializing into one of the three majoring areas viz Crop Product Technology, Entrepreneurial Agriculture and Food Processing Technology after completion of 67 compulsory credits and prescribed number of non-credit courses during the first two years;

(iii) in respect of the course units taken into consideration in the computation of the Final Grade Point Average (FGPA), he/she should have obtained, grades of “C” or better in course units aggregating to at least 80% of total number of credits, and grades of “D” in the remaining course units in aggregating to not more than 6 credits within 4 academic years;

(iv) he/she should have obtained a minimum FGPA of 2.00;

(v) he/she should have obtained minimum of 40% marks from continuous assessment and end semester examination

(vi) he/she should have completed the relevant requirements within a maximum period of eight academic years;

(e) has paid such fees as may have been prescribed by the University and any other dues payable by him/her to the University;

(f) has fulfilled all other conditions and requirements as may have been prescribed by these By-Laws and the Rules and Regulations of the University;

2. On the recommendation of the Faculty Board, the senate shall have the power to change, to amend, to add or to delete subjects/ course units of curricula of degree programmes; and to change or amend or add or delete any Rules and Regulations relating to any of the examinations/assessments counted towards the Degrees of Bachelor of Animal Science [BAScHons], Bachelor of Science in Aquatic Resources Technology [BScHons (Aquatic Resources Technology)], Bachelor of Science in Export Agriculture [BScHons (Export Agriculture)], Bachelor of Science in Palm & Latex Technology and Value Addition [BScHons (Palm & Latex Technology and Value Addition)] and Bachelor of Science in Tea Technology and Value Addition [BScHons (Tea Technology and Value Addition)]. Due notice of any such amendments, changes, additions or deletions shall be given to the students in advance;

3. The Examinations leading to Degrees of Bachelor of Animal Science [BAScHons], Bachelor of Science in Aquatic Resources Technology [BScHons (Aquatic Resources Technology)], Bachelor of Science in Export Agriculture [BScHons (Export Agriculture)], Bachelor of Science in Palm & Latex Technology and Value Addition [BScHons (Palm & Latex Technology and Value Addition)] and Bachelor of Science in Tea Technology and Value Addition [BScHons (Tea Technology and Value Addition)] shall be;

(a) the first year first semester examination,

(b) the first year second semester examination,

(c) the second year first semester examination,

(d) the second year second semester examination,

(e) the third year first semester examination,

(f) the third year second semester examination,

(g) the fourth year first semester examination,

(h) the fourth year second semester examination.

4. The structure of question papers for the examinations leading to the Degrees of Bachelor of Animal Science [BAScHons], Bachelor of Science in Aquatic Resources Technology [BScHons (Aquatic Resources Technology)], Bachelor of Science in Export Agriculture [BScHons (Export Agriculture)], Bachelor of Science in Palm & Latex Technology and Value Addition [BScHons (Palm & Latex Technology and Value Addition)] and Bachelor of Science in Tea Technology and Value Addition [BScHons (Tea Technology and Value Addition)] shall be approved by the Senate on the recommendation of the Faculty Board;

5. A Student shall not be permitted to take an examination unless the Head of the relevant Department certifies on the recommendation of Lecturers/Course Coordinators that the student has completed the course/courses of degrees of Bachelor of Animal Science [BAScHons], Bachelor of Science in Aquatic Resources Technology [BScHons (Aquatic Resources Technology)], Bachelor of Science in Export Agriculture [BScHons (Export Agriculture)], Bachelor of Science in Palm & Latex Technology and Value Addition [BScHons (Palm & Latex Technology and Value Addition)] and Bachelor of Science in Tea Technology and Value Addition [BScHons (Tea Technology and Value Addition)] for the examination by attending such proportions of theory/practical components and other forms of instructions in each examination as may be prescribed by the Senate.

6. The examinations prescribed by these By-Laws shall be conducted by a Board of Examiners appointed by the Senate on the recommendation of the Faculty Board. Such a Board;

(a) shall test any candidate in writing and/or orally and may adopt any other forms of evaluation if the Senate has so decided on the recommendation of the Faculty Board, and

(b) may take into consideration theory/practical components and other forms of instructions (tutorials, practical courses, field work, seminars, dissertations/project reports etc.) in the evaluation.

7. A candidate shall appear himself/herself for the examination/assessment in respect of each course unit counted towards the Degrees of Bachelor of Animal Science [BAScHons], Bachelor of Science in Aquatic Resources Technology [BScHons (Aquatic Resources Technology)], Bachelor of Science in Export

Agriculture [BScHons (Export Agriculture)], Bachelor of Science in Palm & Latex Technology and Value Addition [BScHons (Palm & Latex Technology and Value Addition)] and Bachelor of Science in Tea Technology and Value Addition [BScHons (Tea Technology and Value Addition)] on the first occasion on which the examination is held upon the completion of studies pertaining to the course unit, unless the Senate decides otherwise.

8. A candidate shall be considered to have appeared for any examination/ assessment in respect of the course unit/s that he/she had registered at the beginning of a semester irrespective of whether the candidate appears or does not appear for the examination/assessment unless the Senate decides otherwise.

9. Award of Classes

(a) A candidate who has satisfied the requirements in (1) above in respect of the Degrees of Bachelor of Animal Science [BAScHons], Bachelor of Science in Aquatic Resources Technology [BScHons (Aquatic Resources Technology)], Bachelor of Science in Export Agriculture [BScHons (Export Agriculture)], Bachelor of Science in Palm & Latex Technology and Value Addition [BScHons (Palm & Latex Technology and Value Addition)] and Bachelor of Science in Tea Technology and Value Addition [BScHons (Tea Technology and Value Addition)] may be awarded the First Class Honours, the Second Class (Upper Division) Honours or the Second Class (Lower Division) Honours, as the case may be, on the overall performance in the course units counted towards the said Degrees.

(b) A candidate shall be eligible for the award of Honours if he/she satisfies the criteria as laid down in section (10) below, unless the Senate decides otherwise.

10. Eligibility for the Award of Honours

(a) First Class Honours

A candidate may be awarded First Class Honours provided he/she has

(i) obtained, in respect of the course units taken into consideration in the computation of the FGPA, grades of A or better in course units aggregating to at least 50 percent of total credits, provided that 50 percent of the said grades are from the third year and the fourth year course units and grades of C or better in the remaining course units,

(ii) obtained a minimum FGPA of 3.70, and

(iii) completed the relevant requirements within eight semesters

(b) Second Class (Upper Division) Honours

A candidate may be awarded Second Class (Upper Division) Honours provided he/she has

(i) obtained, in respect of the course units taken into consideration in the computation of the FGPA, grades of B+ or better in course units aggregating to at least 50 percent of total credits, provided that 50 percent of the said grades are from the third year and the fourth year course units and grades of C or better in the remaining course units,

(ii) obtained a minimum FGPA of 3.30,

(iii) completed the relevant requirements within eight semesters

(c) Second Class (Lower Division) Honours

A candidate may be awarded Second Class (Lower Division) Honours provided he/she has

(i) obtained, in respect of the course units taken into consideration in the computation of the FGPA, grades of B or better in course units aggregating to at least 50 percent of total credits, provided that 50 percent of the said grades are from the third year and the fourth year course units and grades of C or better in the remaining course units,

(ii) obtained a minimum FGPA of 3.00,

(iii) completed the relevant requirements within eight semesters.

11. Non-Credit Courses/ Required Courses

The Degrees of Bachelor of Animal Science [BAScHons], Bachelor of Science in Aquatic Resources Technology [BScHons (Aquatic Resources Technology)], Bachelor of Science in Export Agriculture [BScHons (Export Agriculture)], Bachelor of Science in Palm & Latex Technology and Value Addition [BScHons (Palm & Latex Technology and Value Addition)] and Bachelor of Science in Tea Technology and Value Addition [BScHons (Tea Technology and Value Addition)]

may offer Non-credit Courses/Required Courses as part of the programme. These are considered in the fulfillment of the requirements of the particular degree programme and shall provide the student with an opportunity to enhance his/her knowledge. Grades are given for such course units and these will appear in the transcript. However, the grades of these courses are not considered in calculating the FGPA.

12. Optional Courses

The Degrees of the Bachelor of Animal Science (BAScHons) and BScHons (Export Agriculture and Aquatic Resources Technology) may offer Optional Courses as part of the programme. Each student should accumulate the minimum number of optional credits specified under each degree program to complete the degree. The optional courses are defined as credited courses and therefore counted in calculating the FGPA.

13. Essential Skills Development (ESD) and Broad General Education (BGE)

Every student is required to follow Course Units related to "Essential Skills Development" and "Broad General Education" during the academic programme as specified in each curriculum. The credits earned from these course units shall be counted for the award of the BSc Degrees and the Degree of Bachelor of Animal Science. However, obtaining at least a D grade in each of these Course Units is compulsory, and the grades earned for these Course Units shall be included in the transcripts and counted in calculating the Semester GPA and the FGPA if the course is specified as a credited course.

14. Registration for Courses

A student is strongly advised to obtain necessary instructions from his/her Faculty or Departmental academic advisors/ Student counselors if he/she has any questions regarding course units in his/her study programme. A student must also ensure that he/she has fulfilled the correct pre-requisites (if any). A student must complete his/her registration for a selected course combination before the commencement of each academic semester.

15. Changes of Optional Courses

A student wishing to drop or add a course unit may do so within the first two weeks of the relevant semester. No changes in enrolment for course units shall be permitted later than specified time duration. Dropping or adding a course is applicable to optional courses only.

16. Attendance

A minimum of 80% attendance is compulsory for all components of theory and practical lessons. In an exceptional case such as attending extracurricular activities representing the university etc., students shall write to the Dean of the Faculty for necessary approval for attendance through the relevant Head of the Department and the relevant authorities for the given extracurricular activities, in advance.

In case of an illness or any other sudden incidence, student/ guardian shall inform the Dean of the Faculty within 10 working days of the incidence. Once the student returns to the university after such incidence, he/ she shall report to the Dean of the Faculty through Head of the Department by a letter with acceptable evidences of such an incidence. Final decision about the attendance shall be taken by the Faculty Board and students will be informed the decision within one week after the confirmation of the decision.

Failure to fulfill the attendance requirements shall disqualify a candidate from sitting for that examination, but it shall be treated as an attempt. Such candidate/s shall repeat the entire course unit and shall be required to pay the examination fees as stipulated by regulations where applicable.

17. Evaluation

a. Allocation of Marks

Final marks for each course unit in a particular semester shall be allocated on the following basis.

(i) 40% of marks for each course for continuous assessment
(ii) 60% marks for end semester examination

b. Continuous Assessment (CA)

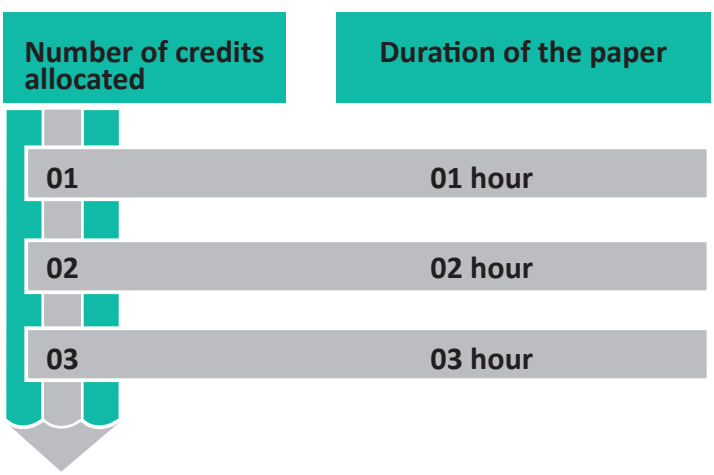
Performance of a student shall be assessed throughout each academic semester using various assessment methods. Continuous assessment will carry 40% of overall final marks that are counted for a grade. There will be no second marking or re-correcting of answer scripts of continuous assessments at any level.

Method of assessment will vary with the nature of the course unit. At the commencement of the course, lecturer/s shall announce how a particular course is assessed continuously. This may include mid semester exam, quizzes, assignments, tutorials, laboratory practical sessions, presentations, field visit reports/quizzes and oral examinations etc. A continuous evaluation shall not be repeated at any level.

If a student is absent for continuous assessment methods such as laboratory practical, presentations, field visits, mid semester examination and oral examinations, those shall not be conducted again during the same semester.

18. End Semester Examination

The maximum total marks for the end semester examination shall be 60% of the overall final marks which are counted for a grade. The time factor of a question paper is determined based on the number of credits allocated to the respective subjects as follows;



End semester examination for each course unit should be conducted according to a prescribed timetable. However, if a course unit is specified as a practical course unit, it may or may not have an end semester exam. Mid semester examinations, if any, also should be conducted within the prescribed period. In addition to the end semester examination, evaluation of course unit may contain at least one other practical component specified as a component of end semester examination. As such, students should obtain a minimum of 40 % for each of theory and practical component (if any) in the end semester examination to pass the examination.

Criteria	Weight	Minimum Marks for Each Criterion
Continuous Assessment	40%	16= (40x40%) (out of 40)
End - semester Examination	60%	24= (60x40%) (out of 60)
Total	100%	40

19. Guidelines for the Calculation of Final Marks for Courses in Examinations

The theory component of an end-semester examination of a course may consist of multiple choice questions, structured and essay type questions and the Departments of study shall decide on the composition of the examination paper, subjected to approval by the Faculty Board and the Senate.
The practical components of courses shall be assessed continuously, by an end-semester examination or by both methods depending on the course and relevant Department.

Oral examinations, when held, shall be as a component of practical assessment or as a separate examination.

For each course, an appropriate evaluation scheme shall be determined by the relevant lecturer with the recommendation of the Department prior to the commencement of the semester which shall be approved by the Faculty Board and the Senate subsequently. An introduction to the course, class/laboratory activities, assignments and weights assigned to each component of evaluation shall be made to the students by the relevant lecturer at the beginning of the course.

20. Field Training

On site training shall be provided for the students to expose them for hands on experience related to the practical component of each degree programme. The allocated credit limit for field training shall differ depending on the requirements of each degree program. Each candidate shall be assessed based on the evaluation criteria prescribed by each degree programme.

21. Industrial Training

In-plant training shall be given in the related industries in the public and the private sector to expose students to gain hands on experience and knowledge related to each degree programme. Each candidate shall be assessed through an internal and an external evaluation based evaluation criteria prescribed by each degree programme.

22. Research Project

Every student shall conduct a research project to fulfill the partial requirements of each degree programme. The allocated credit number for research project may vary depending upon the requirements of each degree programme.

The research project shall be completed under internal and/ or external supervision and evaluated using the evaluation criteria laid down related to each degree programme. A comprehensive Research Dissertation prepared according to guidelines prescribed by each Department shall be submitted by the student having made an oral presentation in presence of prescribed evaluation panel. Further, in writing a dissertation/ or any other written submission, no candidate can copy from internet or any other unauthorized material without proper acknowledgement.

23. Grading System

Marks obtained in respect of a course unit shall be graded according to the following grading system.

	Range of Marks	Grade	Grade Point Value
1	91-100	A+	4.0
2	85-90	A	4.0
3	80-84	A-	3.7
4	75-79	B+	3.3
5	70-74	B	3.0
6	65-69	B-	2.7
7	60-64	C+	2.3
8	55-59	C	2.0
9	50-54	C-	1.7
10	45-49	D+	1.3
11	40-44	D	1.0
12	<40	E	0.0

24. Grade Point Value

Grade Point Average (GPA)

GPA is the credit weighted arithmetic mean of grade point values. It is determined by dividing the total credit weighted grade point value by the total number of credits. The grade point value shall be calculated to the second decimal place. Rounding off of the decimal point should be done according to the standard mathematical methods.

As an example, a student who has obtained following grades given in the table will have a GPA of 2.69 as worked out below.

$$GPA = (\sum C_i G_i) / \sum G_i$$

Where, C_i is the number of credits for i^{th} course
G_i is the grade point obtained for the i^{th} course

Grade obtained	No of Credits	Credit weighted grade
A+	3	(3x4.0)= 12.0
A	3	(3x4.0)= 12.0
B+	2	(2x3.3)= 6.6
C	3	(3x2.0)= 6.0
D	1	(1x1.0)= 1.0
E	2	(2x0.0)= 0.0
Total	**14**	**37.6**

Grade Point Average (GPA) =37.6/14 = 2.69

Grade point values and credit values of all registered course units except compulsory non-credit/ required courses in a study programme of a student shall be taken into account in calculating the Final GPA, unless stated otherwise.

25. Final Grade Point Average (FGPA)

The FGPA shall be calculated by averaging the weighted GPA values of all four years. The weightages allocated for each year in calculating FGPA are given in following table:

Level	Weightage (%)
100	20
200	25
300	30
400	25

FGPA and Respective Grades

FGPA	Grades
FGPA ≥ 3.70	**First Class**
3.30 ≤ FGPA < 3.70	**Second Class Upper Division**
3.00 ≤ FGPA < 3.30	**Second Class Lower Division**
2.00 ≤ FGPA < 3.00	**Pass**
FGPA < 2.00	**Academic Probation* if the FGPA is less than 2.00**

*Academic probation is the most common term used in Universities to indicate that a student is not proceeding academically as required by the institution. "Academic probation" often means that a student's grades and/or GPA are not high enough to continue in university if they stay the same.

The student shall maintain the Final Grade Point Average (FGPA) at the level of 2.00 or above. The student shall repeat the courses with less than D grade at the next earliest attempt and the student can only obtain a maximum of C grade. If the student has obtained C- or D grades for a course, he/she has two alternatives either to repeat the course or to keep the grade as it is, if he/ she can maintain the minimum FGPA requirement. Students with an FGPA of less than 2.0 shall be considered as 'Academic Probation' until the FGPA is raised to 2.00, by repeating failed courses and/or taking more optional courses.

For compulsory non-credit/ required courses, students shall obtain a minimum of C grade to pass the course. Students who fail to achieve a minimum of C grade for a compulsory non-credit/ required course shall repeat the examinations at the next earliest attempt.

Students who fail to sit the end semester examination, but have fulfilled all other requirements and also have obtained concessionary approval from the senate followed by recommendation of faculty board can sit for the final examination at the next earliest attempt.

26. Restrictions for number of attempts for course examinations

Number of attempts to sit an end semester examination shall be not more than three, unless the student has obtained concessionary approval from the Faculty Board and the Senate.

27. Restrictions for the period for completion of the degree

The maximum allowable time period to complete each degree in the Faculty of Animal Science and Export Agriculture, Uva Wellassa University is Eight Years.

28. Absentees at Examinations

a. A candidate who has been absent from a whole end-semester examination shall be treated as if he/she has used an occasion, unless a valid reason has been furnished by the candidate and accepted by the Faculty Board and the Senate. A candidate with an accepted valid reason shall take the whole end-semester examination on the next immediate occasion and shall get grades for those courses. If a candidate avoids taking the whole end-semester examination on the next immediate occasion without furnishing a valid reason, it shall be treated as an attempt.

b. If a candidate has sat only for a part of one or more course/s of an end-semester examination, it will be treated as a complete attempt for all prescribed courses in that examination, unless a valid reason has been furnished by the candidate and accepted by the Faculty Board and the Senate.

c. Absence of a candidate from an end-semester examination on account of bereavement in the family (death of a parent, brother or sister, and if married, spouse or child) will be excused if approval is obtained from the Faculty Board and the Senate by submitting a death certificate and appropriate proof of relationship.

d. All absentees at examinations due to medical reasons shall submit a medical certificate obtained from a person listed under item 30. These medical certificates shall be endorsed by the University Medical Officer (UMO) before being presented to the Faculty Board and the Senate for approval.

e. An end-semester examination, which involves different components, shall be taken at one occasion, except in the case of continuous evaluations. In the case of repeat or absent candidate, marks obtained for continuous evaluations shall be counted in the next end-semester examination.

29. Examination Procedure, Offences and Punishments

Regulations made by the Senate of the Uva Wellassa University under section 136 read with Sections 29, 45 and 46 of the Universities Act No. 16 of 1978 as amended by the Universities (Amendment) Act No. 7 of 1985 are applicable.

30. Medical certificates for failure to attend examinations

Students are requested to support the absence from examinations 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 registered medical officer and certified by the UMO.

Students who fall ill during sessions of examination time should contact the University Medical Officer at the University Health Center immediately. If a student falls sick at home or elsewhere during the session of an examination time he/she or his/her guardian should inform the Dean of the Faculty within 10 working days followed by a letter indicating the nature of the illness and the name of the attending doctor and other relevant information. Medical certificate supporting the illness of the student should also be sent to the Dean of the Faculty.

31. Scheme for awarding degrees

To award the degree the student shall complete all the components of the degree course including compulsory courses, compulsory non-credit courses, optional courses, field training if any, industrial training and research project and also shall complete the minimum numbers of credit requirement with respect to the degree program. To obtain a degree with a class, the student should complete the credit requirement within a period of four academic years (eight semesters) unless special approvals have been obtained from the Senate.

32. Effective Date of the Degrees

The effective date of the all degrees shall be the last date of the stipulated examination period on which the Final Examination of the fourth year second semester is held. To be eligible for this effective date, a candidate shall submit the prescribed number of completed bound copies of the project report within specified time duration given by each Department of study after completion of the examination. For repeat students, effective date shall be the date of commencement of the final examination of the final year second semester after completion of all the requirements of the degree.

These regulations provide the criteria and other conditions relating to examinations leading to all five degrees. Any interpretations of these regulations shall be submitted to the Senate and the decision of the Senate shall be final. These regulations shall be effective for the new entrants for the academic year 2018/2019 and thereafter.

FORUMS FOR DISSEMINATION OF SCIENTIFIC KNOWLEDGE & RESEARCH FINDINGS AND APPRAISAL

UNIVERSITY RESEARCH COMMITTEE

Research Committee is the steering body that manages the research and related activities of the University. It has been working as a subcommittee of the Senate since the inception of the University towards becoming renowned scientists. The committee is driven by the Chairman appointed by the Vice Chancellor, with all Deans of the Faculties, Heads of Departments and the Librarian. Mainly, the Research Committee plays a key role in disbursement of ministry funds for research and related activities under inter-disciplinary and multi-disciplinary aspects, monitoring research and related activities, promoting research publications both locally and internationally, commencing and maintaining refereed journals by opening pathways to scientists to publish the scientific findings, monitoring annual 'International Research Conference' of the University, monitoring activities of the Research Awards Committee, recommending research publications and research project proposals for obtaining research allowance and seeing the progress of the latter. Accordingly, postgraduate and undergraduate research candidates gain opportunity to involve with different research projects under the respective disciplines.

The University research highly focuses and expects to contribute to the economic development of the country going with the University theme "Value addition to the local resources". As identified by the Research Committee, research grants are awarded annually to the University staff members, on competitive basis, under the following research priority areas.

- **Value addition to local resources base**
- **Multidisciplinary research towards socio-economic development of the country**
- **Development of private-public partnerships**
- **Sustainable development**

University has the following vision and mission in relation to research.

Vision

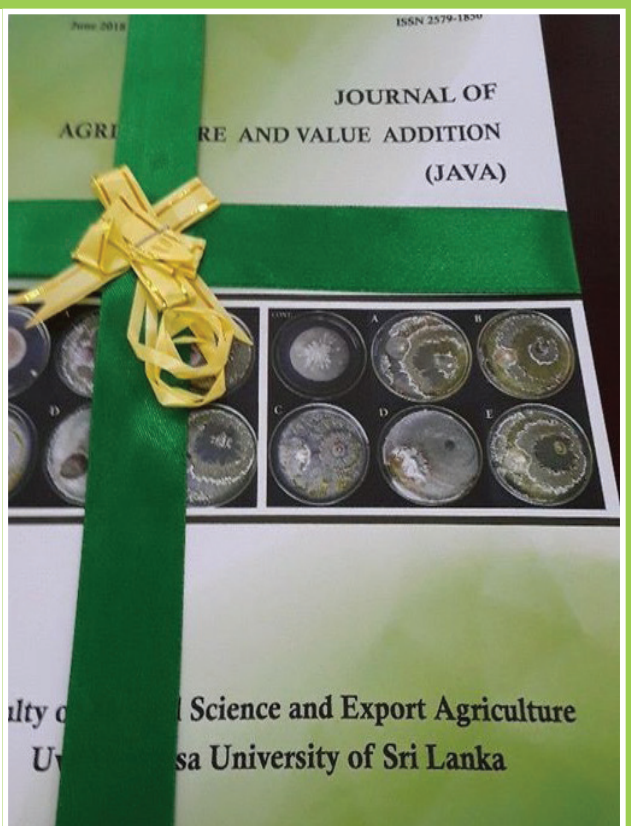
Be the centre of excellence for research in value addition in Sri Lanka

Mission

To conduct, discuss, apply and disseminate need driven academic research with strong emphasis on value addition to the national resources and to make an outstanding contribution to the national development.

Journal of Agriculture and Value Addition (JAVA) and International Research Symposium/ Conference of Uva Wellassa University (IRSUWU/IRCUWU) are the major forums that provide opportunities for both the students and graduates in disseminating their scientific findings and research outputs.

JOURNAL OF AGRICULTURE AND VALUE ADDITION (JAVA)



Journal of Agriculture and Value Addition (JAVA) was launched on May 31, 2018 as the maiden Research Journal of the Faculty of Animal Science and Export Agriculture and also of the Uva Wellassa University. The editorial board of JAVA includes renowned local and foreign scientists. JAVA creates the pathway for effective dissemination of novel findings under the main disciplines of crops, livestock, poultry, aquaculture & fisheries and food. JAVA acts as the professional platform to integrate above key areas & diverse developments and provide a unique opportunity to make significant advances in the research, while providing a special opening to connect domain experts from chemistry, biology, environmental science which are also interconnected with the theme of value addition. Objectives of the JAVA are:

- **to focus research that promotes value addition in agriculture and fisheries**
- **to offer readers an opportunity to tap into the future enhancement of agriculture and fisheries sector**
- **to streamline the relevant findings towards economic development**

INTERNATIONAL RESEARCH SYMPOSIUM/ CONFERENCE OF UVA WELLASSA UNIVERSITY

International Research Symposium/Conference (IRSUWU/IRCUWU) is the major forum to publish scientific findings of research projects of Undergraduates. With the key objective of expanding knowledge horizons, while paving the way towards sustainable development through value addition to national resources, UWU organizes IRCUWU/IRSUWU annually under different themes. This is an event, which encourages reseachers to discuss, share and disseminate reseach findings at the dignified forum by actively engaging Sri Lanka's sustainable development, enhancing technology and innovation. This enoromous event provides a prospect for the scientists, the industry personal and international delegates to unite and present their scientific innovations and global trends in different fields. Excellent researchers and scientists are appreciated at this scientific forum for their outstanding achivements.

AWARDS AND MEDALS

Different awarding schemes have been initiated for appreciation of academic performances and research findings. Vice Chancellor's awards are offered annually for the students in each degree programme for their best academic performance, at the General Convocation. Selection criteria for the awarding are based on the overall GPA value for four years. Five awards are offered to the Faculty representing five degree programmes as given below.

- Vice Chancellor's award for the best performance in Bachelor of Animal Science Honours (BAScHons) degree programme
- Vice Chancellor's award for the best performance in Bachelor of Science Honours (BScHons) in Aquatic Resources Technology degree programme
- Vice Chancellor's award for the best performance in Bachelor of Science Honours (BScHons) in Export Agriculture degree programme
- Vice Chancellor's award for the best performance in Bachelor of Science Honours (BScHons) in Palm and Latex Technology and Value Addition degree programme
- Vice Chancellor's award for the best performance in Bachelor of Science Honours (BScHons) in Tea Technology and Value Addition degree programme

"Asha Weerasooriya Special Awards" are presented annually for the recipients with the highest GPA from the two respective

Departments of the Faculty at the General Convocation.

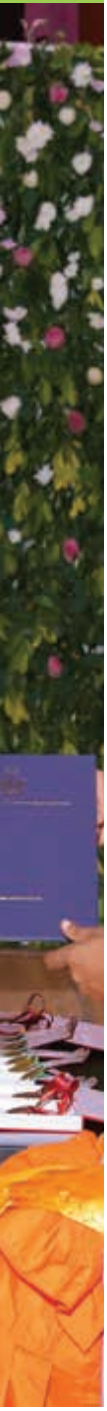
- "Asha Weerasooriya Memorial Gold Medal" for Department of Animal Science

- "Asha Weerasooriya Memorial Gold Medal" for Department of Export Agriculture

Further a special award is offered for the overall highest performance of Faculty of Animal Science and Export Agriculture as given below at the convocation.

- "Mahinda Katugaha Gold Medal" for the highest achiever from the Faculty of Animal Science and Export Agriculture

In addition, the undergraduates have an opportunity to be awarded as the best oral presenter and poster presenter under each track/ session at the annual International Research Symposium/Conference of Uva Wellassa University (IRSUWU/IRCUWU) as appreciation of young scientists.




UWU
Uva Wellassa
University

FACILITIES AND SERVICES

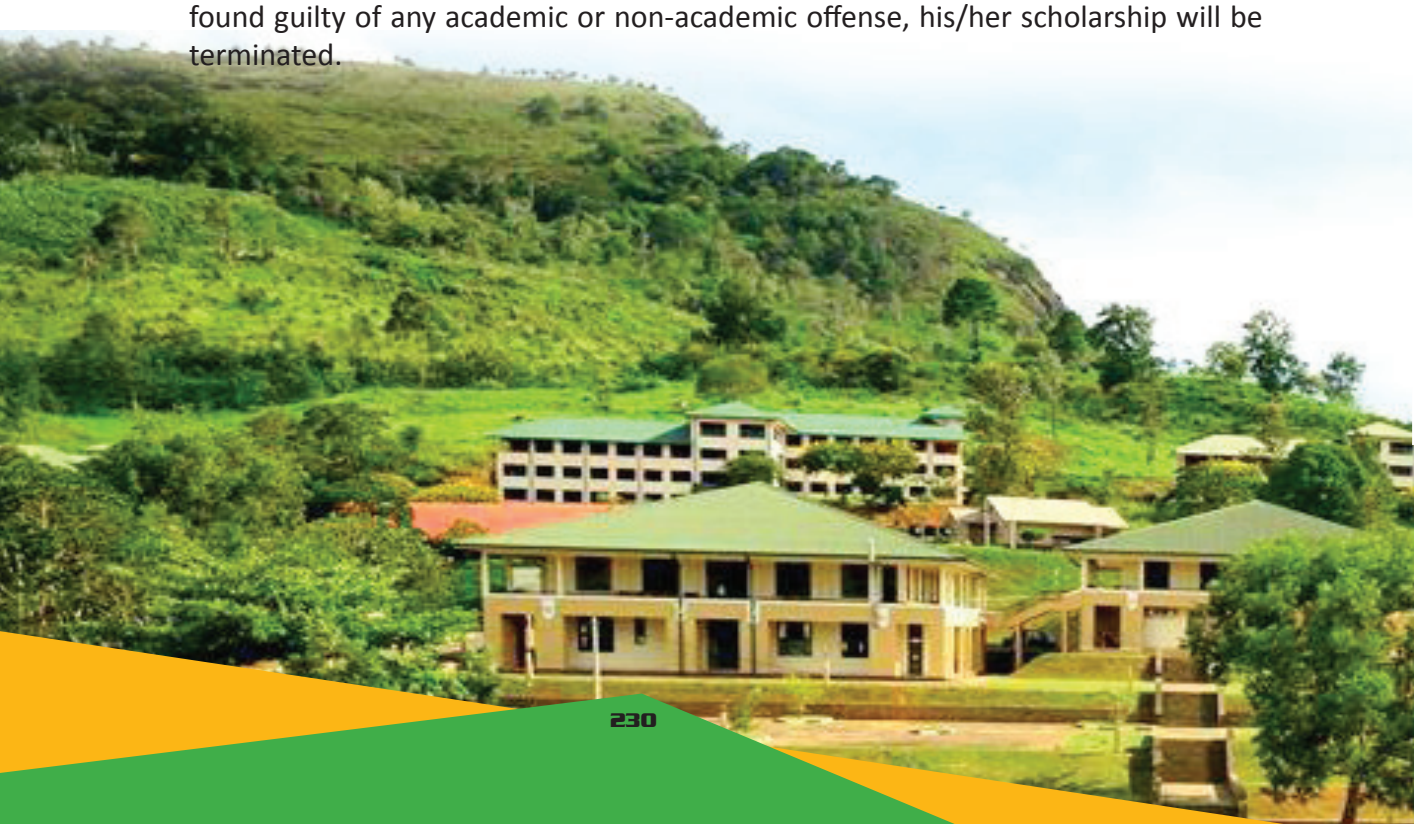
FINANCIAL SUPPORT

Mahapola and Bursary

UWU as one of the national Universities in Sri Lanka provides two schemes of financial assistance from the Government as Mahapola Higher Education Scholarship and Bursaries. Both these assistances are given on a competitive basis and at the national level. Students should apply for both financial supporting schemes giving necessary information such as students family income, marks obtained at G.C.E. (Advanced Level), their academic achievements etc. to be taken in to consideration by the Government authorities to choose the scholarship and bursary holders. Students can contact the Student Affairs Division for relevant information.

Chancellor's Scholarship

The Chancellor of Uva Wellassa University, Thripitakacharya, Dharma Keerthi Sri Sumangala Rathanapala Dhammarakkhitha, Most Venerable Bengamuwe Sri Dhammadinna Nayake Thero is very pleased about academic programmes, student activities and disciplines of students. It resulted to initiate a scholarship programme for UWU undergraduates. These scholarships are offered to the students who are truly in need of financial support. The selection would be done by a selection committee appointed by the Ven. Chancellor. The selected undergraduates receive Rs.1500/= per month for 10 month of academic year up to four years, until completion of the degree programme. However, the financial support would not be offered, if the particular student is absent or repeated for a particular academic semester or not fully enrolled for the semester. Furthermore, if a receiver of the scholarship is found guilty of any academic or non-academic offense, his/her scholarship will be terminated.



MENTORING PROGRAMME

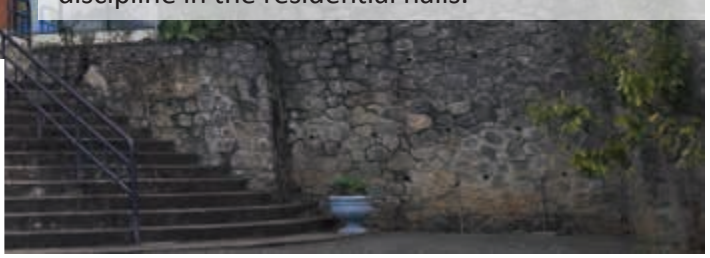
Each student is allocated to a mentor to discuss academic & related matters and personal issues to build up his/her academic performance and future career. Mentoring programme is one of the unique programmes to provide a trusted friend, counselor and an advisor to each student. The mentor is a permanent academic staff member. Each lecturer owns a small group of students as mentees. Mentoring process starts by introducing mentors to the students during the integration programme and remains as the mentor until the graduation of the student. Students are encouraged to meet their mentors regularly to get the guidance in their academic life.

COUNSELING

Counseling helps students to get relief from mental stress, improve behavior, establish relationships and make decisions. UWU has formed Faculty student counseling scheme to serve the students by appointing permanent lecturers as student counselors. Student counselors coordinate with student matters in a very confidential manner.

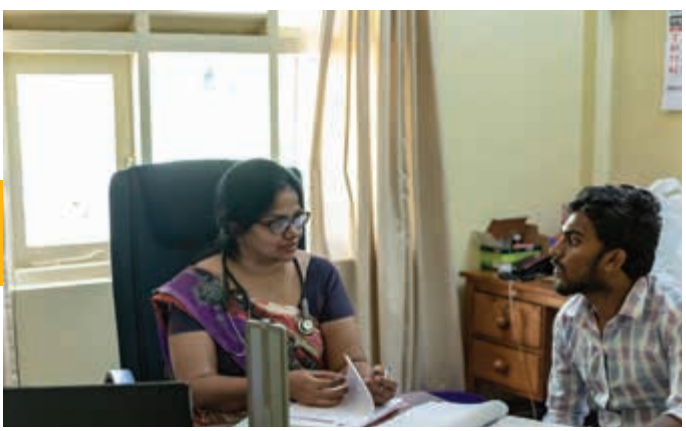
HOSTEL AND ACCOMMODATION FACILITIES

The Uva Wellassa University provides outstanding hostel facilities for all the first year, third year and fourth year undergraduates, upon their requests. Hostel facilities are available inside and outside the University premises. Internal Hostels are equipped with bed rooms, computer clusters and study halls shared by students. A nominal fee per term is charged for room and other facilities. Hostel wardens and sub-wardens from the academic staff and full time permanent sub wardens have been appointed for smooth functioning of hostels and maintenance of the discipline in the residential halls.

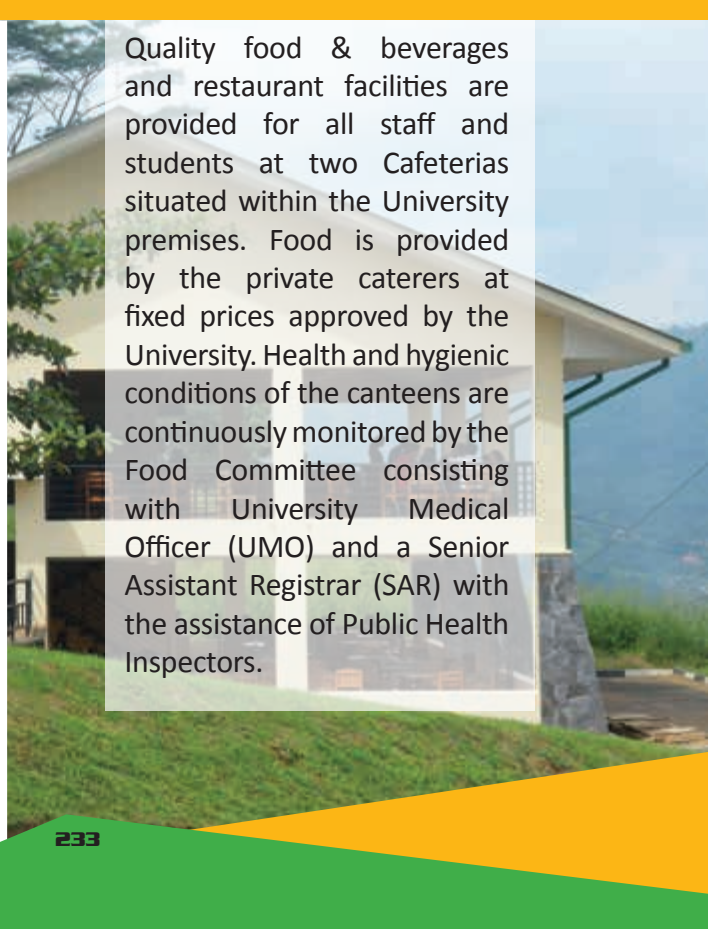


UNIVERSITY MEDICAL CENTER

All University students have access to medical care free of charge under the guidance of the University Medical Officer (UMO). The University Medical Center is further strengthened with a qualified nurse and a pharmacist. All medical reports of students should be certified by the UMO, before being submitted to the Faculty Board and Senate for approval.



CAFETERIA



Quality food & beverages and restaurant facilities are provided for all staff and students at two Cafeterias situated within the University premises. Food is provided by the private caterers at fixed prices approved by the University. Health and hygienic conditions of the canteens are continuously monitored by the Food Committee consisting with University Medical Officer (UMO) and a Senior Assistant Registrar (SAR) with the assistance of Public Health Inspectors.

PHYSICAL EDUCATION UNIT

The students have access to sports activities in the University Physical Education Unit headed by its Director. Students have adequate indoor (Gymnasium) and outdoor facilities for sports. Gymnasium and playground provide opportunities for students and staff to improve and engage in sport activities. The sports activities of the University specially focus on Inter-University tournaments. In addition students organize sports activities such as Inter Degree Programme Annual Games, Inter-Faculty tournaments, Cricket, Football, Badminton and Elle tournaments under the guidance of academic staff. The sports activities are coordinated under the guidance of the Sports Advisory Board. The students interested in sports can find more information from Physical Education Unit.


2019

LIBRARY

The Uva Wellassa University Library was established in August 2006, when the University was formally established in Badulla.UWU Library is one of the central support services provided by Uva Wellassa University. As an information center, the mission of the UWU library is to underpin the University's vision and mission in building synergies between information, innovation, education and research through an excellent library and information services. The Uva Wellassa University Library plays a major role in the collection development and dissemination of scientific and technical information to meet the present and future needs of the students and staff members. At present, the library is used by over 2000 readers including both students and staff of the University. Library provides quality services and access to information. It also offers teaching and learning environment by providing a wide-range of knowledge with diverse resources. All members of the University can register with the Library and obtain their Library cards. The students' Library cards are issued at the beginning of every academic year. All the students should return the borrowed lending books within two weeks. Reference (SR) books will be issued only for overnight reading.

At present, the Library provides different services such as lending, photocopy facility, Research Support Service (RSS), bibliometrics, theses deposit, E-document delivery, UGC-CONSAL service and open access scholarly service. Online Public Access Catalogue (OPAC) is another facility of UWU library. The library is automated using KOHA open source Integrated Library Management (ILM) software. Web OPAC

provides the facility of searching, browsing and reserving physical materials available at the UWU library. With OPAC, the entire library's collection can be searched by author, title, publisher, ISBN, keyword, year of publication, subject and even the call number. Online Document Delivery Service is available for the research purposes of students and staff members. Full research papers from various journals and scholarly databases can be accessed through article's URL/DOI.

The library is opened throughout the year except the Public Holidays.

Library Opening Hours

Monday - Friday	**8.00 a.m. – 6.00 p.m.**
Saturday & Sundays	**8.00 a.m. – 4.30 p.m.**
Public Holidays	**Closed**
Reading area	**Open in 24 hours daily**

CENTRE FOR GENDER EQUITY AND EQUALITY (CGEE)

Centre for Gender Equity and Equality (CGEE) of Uva Wellassa University was established in 2016 upon the request made by the UGC, Sri Lanka. The CGEE has a strong background with a solid Policy Framework to guide the University in integrating Gender Equity and Equality (GEE) in all staff and student activities. The CGEE has four faculty cells which is a mandatory requirement of the GEE policy framework and it is a sub-committee functioning under the University Gender Equity and Equality Committee, with the intention of facilitating the CGEE by creating gender sensitive environment at the Faculty level. There are male and female academic staff members assigned from the Faculty to take care of the matters with GEE at the Faculty level. CGEE assists in promoting socially and gender sensitive sub cultures and an environment of freedom and security that allows students and all university staff to pursue their study and work without discrimination and oppression.

Vision of CGEE

A university with gender sensitive working and learning environment to all its members and are recognized for their excellent practices, with zero tolerance towards sexual and gender-based violence-SGBV.

Objective of CGEE

To ensure equal opportunities and terms for both genders among the university community while creating gender sensitive environment within the University with zero tolerance toward sexual and gender-based violence-SGBV.

Following are the key functions of the CGEE

- Developing gender-sensitive university culture and university environment.
- Promoting harmonious relations between different categories of staff and students at UWU
- Monitoring in implementing the policy on GEE at the institutional level.
- Conducting awareness programs/training for staff and students – during orientation/induction to students/staff.
- Identifying ways of preventing SGBV within the university.
- Empowering students and staff to prevent and respond to SGBV.
- Inquiring SGBV and proposing to university councils for disciplinary actions to offenders and facilities to victims.
- Disseminating information about GEE policies and GEE activities by posting /circulating relevant material through relevant channels to the university community.
- Facilitating to develop university curricula and research, and contribute other gender-related inputs to the University Community.
- Ensuring transparency, equal opportunities and equal treatment for all, both in relation to the appointment of positions, recruitments, employment and career development.
- Developing and maintaining a mechanism of redress for SGBV within the university.

CAREER GUIDANCE UNIT (CGU)

Career Guidance Unit (CGU) was established on 18th July 2013. Vision of CGU is to produce well-rounded graduates to become Entrepreneurial Manages. Mission is to facilitate the undergraduates to develop skills, capabilities and positive attitudes to become Entrepreneurial Managers

CGU was created with the following objectives:

- To develop relations between University and Employment Sector in a mutually beneficial way.
- To help undergraduates to choose and proceed on an optimal career path based on the student's ability, desire and available opportunities.
- To help undergraduates obtain an orientation to the employment sector and develop Transferable Skills such as effective communication skills, Leadership skills, Teamwork skills, and management skills so that they will become productive and efficient members of the work force.
- To liaise with private and public sector organizations to find out about existing job opportunities, bring them to the notice of graduates and direct the most suitable applicants to the organization

It recognizes that a fresh graduate could become successful in this competitive world by setting proper career goals and making career plans from the first year in university which requires strategic thinking on the part of the young student which is only possible by making informed choices, preferably guided by professionals. For that CGU helps the undergraduates to develop their skills & abilities of self–assessment information seeking and decision making required for coping with the needs of complex of world of work and to develop lifelong learning ambitions, which helps to manage the career development. Success in career development depends on providing up to date information on training and employment opportunities and having a good knowledge of available opportunities in the local and international training market. Therefore CGU guides the undergraduates to select and manage career successfully by providing following facilities during their undergraduate period.

- Facilitating the young person's transition from school to University
- Counselling and advising on careers
- Employability skills enhancement
- Career–related information provision
- Networking with the industry
- Availing works experience
- Graduate placement
- Integration of career guidance within curricular in the form of instructional modules (i.e. Career Development Course Modules)
- Entrepreneurship skills development
- Training, research and development
- Social responsibilities and community development skills
- Facilitating the undergraduates transition from University to world of work

UNIVERSITY BUSINESS LINKAGES (UBL)

The main role of UBL Unit is to coordinate and act as the interface with private sector by developing the University Business Linkages giving more emphasis on the Small and Medium Enterprises (SME) of Uva region. A number of functions such as facilitation, support, analysis, negotiation, strategy design, organization, documentation, planning and monitoring of UBL portfolio are coordinated as the responsibilities of UBL. This established UBL Unit produce benefits based on following criteria.

(a) Increasing efficiency and effectiveness of UBL related activities
(b) Commercialization of research & development outputs
(c) Organization of services involving revenues or exchange
(d) Innovative income/compensation-generating business models, in a future agenda. Also the University expects to meet following objectives through this UBL Unit.

- To encourage industries through improvement of quality of products and services.
- To reduce the migration of (younger generation) people from Uva region to other areas.
- To transfer technology to the SME sector of the region.
- To contribute to the local/regional economy.

Different centers have been established in the University to meet the expected outcomes through UBL.

UWU International Collaboration Center (UWU-ICC)

The UWU International Collaboration Center (UWU-ICC) was established in 2016 with the aim of internationalization of the University. The main tasks of the UWU-ICC include;

- Building up collaboration with local and international Universities, research centers, research institutes, and industries in respect to teaching, research, patenting and entrepreneurial activities.
- Establishing a platform for the exchange of local and international academia, research scholars and students.
- Promoting and coordinating the registration for postgraduate programmes of international students.
- Facilitating international research conferences, training programmes, and seminars in the University.

Vision of UWU-ICC:

To aid the Uva Wellassa University to be recognized as a fast growing world-class research university that will help attract, create, and retain both Sri Lankan and international talent to Uva Wellassa University and Sri Lanka while providing the Staff and Students of the University with facilitation and resources to enhance high quality research activities

Mission of UWU-ICC:

Foster research and innovation in the country through facilitation of postgraduate programmes and research by providing the students and staff members with resources, platforms and scholarly exchanges which will create a university environment of innovation, integrate education and research, and lay the foundation for a world-class research University.

Workshop on Zebrafish Egg Model

INTERNAL QUALITY ASSURANCE UNIT (IQAU)

In 2012, the Internal Quality Assurance Unit (IQAU) of Uva Wellassa University was established after a Senate approval to coordinate all QA related activities within the University yet, all the members of staff take personal responsibility for the quality of their contribution to the student learning experience. Uva Wellassa University values the highest academic and professional standards, and aims to be an internationally renowned University for the quality of teaching, learning facilities and educational experience presented to students. The mission of IQAU places students at the center, engaging them in collaborative learning in a supportive, well-resourced and conducive academic environment.

IQAU of Uva Wellassa University directs quality assurance for all new and existing degree programmes, faculties and units. IQAU ensures that the Uva Wellassa University operates in conformity with the Sri Lankan Qualification Framework and other standards set forth by Quality Assurance and Accreditation Council of Sri Lanka. The University's internal QA processes include:

- degree program and module approval
- student feedback
- peer observation of academic teaching, and external examiners
- periodic review of modules and degree programmes.

Faculty level QA activities are administered by the Faculty QA Cell headed by the Dean of the Faculty.

SOCIETIES & CLUBS
OF THE FACULTY

REGISTRATION OF SOCIETIES AND CLUBS

Societies and clubs functioning in the University should be registered at the Student Affairs Division. Application forms can be obtained from the Student Affairs Division. Duly filled application forms should be submitted for the approval of the Vice Chancellor through the Senior Student Counselor. Successfully registered societies/ clubs will be informed of their registration along with the valid society/club registration number. The registration is valid for one year and should be renewed annually. It is mandatory for every Society and Club to submit their annual activity plan and budget to Student Affairs Division within the first two weeks of the first semester.

ACTIVE SOCIETIES/CLUBS

ANIMAL SCIENCE SOCIETY

Animal Science club was established focusing on following objectives.

- To enhance the awareness and knowledge on livestock farming and production among farmers, schools, and the society.
- To introduce various products related to livestock sector, first to the university community and extend it as possible.
- To publicize the value addition theme in Animal Science field.
- To enhance the practical background of Animal Science students.
- To promote the Animal Science degree program and the university through the value addition theme.

All the undergraduates of the Animal Science degree programme act as members of the club. Different activities have been targeted by the club as given below.

- Establishing and maintaining farm and sales units within University premises.

- Carrying out workshops, seminars, programs and practical including food festivals, practical sessions and camps.
- Publishing a magazine to promote the activities of the society and knowledge on livestock sector at the end of every semester.

Blood donation campaign, ANS Trophy football tournament, AURORA Food Festival and Saarkshara are some of annual events organizing by the society. Blood donation campaign is a collaborative task organized with the blood bank of Badulla General Hospital. “ANS Trophy” - football tournament is important in encouraging the students of the fellow Departments to brush up their ingenuities and ameliorate the spirits of the game. With promoting the degree programme and its concept of value addition to the livestock and aquatic products, “Aurora” Food Festival is annually organized by the third year students of the Animal Science Degree Programme with the guidance of staff. “SAARKSHARA” was solely introduced to aid the rural schools in the Uva Province. With the aim of disseminating the students’ activities conducted by the undergraduates of Department of Animal Science, a newsletter, “ANS NEWSLETTER” is published bi-annually.

AQUA-CLUB

AQUA-CLUB is the society established under the membership of undergraduates of Aquatic Resources Technology degree programme. The activities and tasks of the club have been focused on enhancing creativity, organizing skills, leadership ability, team work, and student development activities. The main objectives of this society are;

- To enhance the capture fishery sector in rural areas
- To conserve & protect aquatic resources in Uva province
- To fulfill the Corporate Social Responsibilities (CSR) for Uva Province
- To strengthen the creativity, art and professional skills of undergraduates
- To enhance the practical skills, awareness & technical knowledge on aquaculture and fishery among undergraduates of Department of Animal Science.

The club is annually organizing lots of events such as musical shows, training programmes, stage drama, "DAETH" programme and educational workshops. "DAETH" is another CSR event introduced to aid the rural, remote schools around the Uva Province. This event further allows University students to share their experiences and encourage the young generation in schools by providing necessary requirements.

Life saving training camp is collaboratively organized by Aqua Club, Department of Animal Science and Sri Lanka Coast Guard (SLCG) at the Coast Guard Life Saving Training School, Balapitiya as a biannual event. The main objective of this training is to provide the practical exposure about the importance of life saving and improve the life saving skills of undergraduates. Academic staff members of the Department of Animal Science coordinate this training programme.

UWU AGRO CLUB

Society of Export Agriculture was established focusing on following objectives.

- To enhance the awareness and knowledge on crop production, processing and marketing among the farmer and school communities
- To carry out workshops, seminars, trainings and events including food festivals and practical sessions
- To introduce various new products related to agriculture sector with different stakeholders
- To establish and maintain a sales unit of agricultural commodities within the university premises.
- To publish a magazine to promote the activities of the society and to disseminate knowledge on agricultural technology
- To enhance the practical knowledge of the undergraduates of Department of Export Agriculture

EVENTS ORGANIZED UNDER THE UWU AGRO CLUB

Nimthera Abiyasa Charity work

Nimthera Abiyasa is an annual charity program conducted to uplift the moral and attitudes of school children from selected rural school while providing the financial support to develop the infrastructure facilities. This programme is conducted for 03 consecutive days in a selected school with an outbound training session, seminars and workshops.

Athwela **Programme**

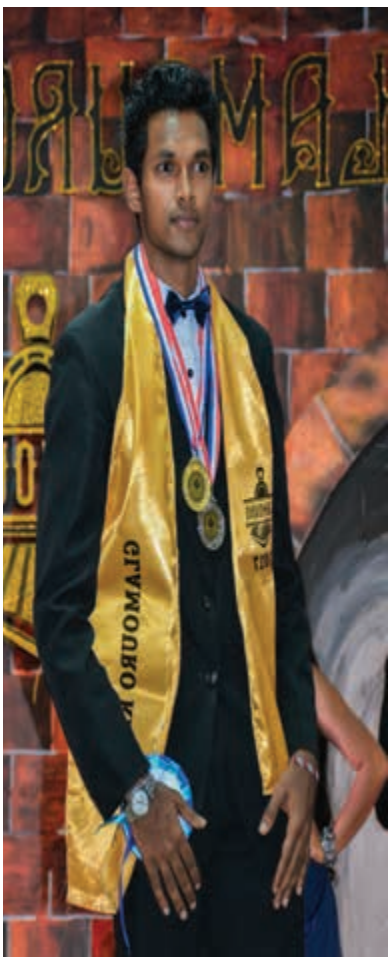
Having understood the responsibility of escalating educational level of students in the Uva Province, the undergraduates of Palm & Latex Technology and Value Addition degree programme of Uva Wellassa University conduct a programme named “ATHWELA”, which is a donation campaign of library books for libraries of rural schools. The main objective of the programme is to build up an intimate relationship between the University and the community while providing the assistance for uplifting some of the selected schools in the area.

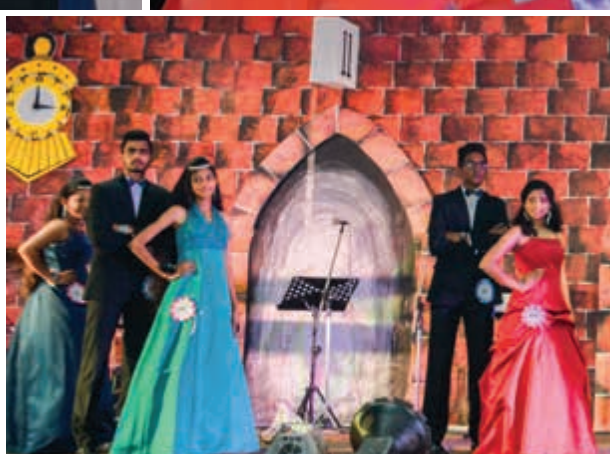
OTHER
EXTRA - CURRICULAR ACTIVITIES

Number of existing extracurricular activities plays a satisfactory role in improvement of socio-emotional skills of undergraduates. Integration programme of first year undergraduates is the foundation step of socio-emotional skills development. Series of events are organized throughout this programme and "Talent Day" are such kind of events mainly focusing on development of creativity, leadership, team work, communication and social skills. Students perform their talents in a specific forum in the first week of their University life.

Glamouro

"Glamouro" is a high profile event organized as a co-curricular event of Communication Skills course under the "Essential Skills Development" which is mainly focused on first year students. This event supports in developing communication skills of students by allowing students to successfully complete in various activities. Glamouro also helps to develop personality of students with self-esteem, confidence and individuality. During this event, different competitions are organized among various competing students.





Wellasse Kona Mangalya

Undergraduates of the Faculty have opportunities to organize and participate in different cultural and religious events at the University. Sinhala - Tamil New Year festival - "Wellasse Kona Mangalya" is such kind of annual cultural event focusing on improving the collaboration between students & staff members, while developing the socio-emotional skills of undergraduates. The event is comprised with New Year games and other entertaining activities where Sinhala and Tamil sweets delight the New Year dining table.

Namunukula Vesak Sanda

Buddhist Union of Uva Wellassa University annually organizes the "Namunukula Vesak Sanda": a series of events, parallel to Vesak Poya day. Students get the opportunity to actively engage with the religious activities such as Vesak devotional songs concert, Vesak lantern competition, programme of observing sil, Alms giving and Bana preaching events, while enhancing the spiritual as well as aesthetic values by developing the religious harmony of students.

Malaiththendral

"Malaiththendral" is organized by the Tamil students with participation of all undergraduates of UWU to promote the artistic and cultural values of the students exhibiting the cultural diversity of the University.



Christmas Carol

The annual Christmas Carol Service of UWU is organized to share the joy of Chirstmas with members of UWU family.

"Athambula" is another event to enrich the art appreciation skills of UWU undergraduates. This workshop is organized as a partial fulfillment of the subject "Aesthetic Studies", which is a part of Broad General Education of UWU curriculum.

Manusath Handa

The Art Festival of UWU, "Manusath Handa" is annually organized by the Art Club with series of events such as 'Rookada Sandarshana' (a puppet show), 'Cinema Sathiya' (Cinema week), 'Gosha' melodious musical night. 'Nidra' and 'Bhaawa sankalana' are intra-University programs of Music & Dancing Circles focusing on developing unique music & dancing performances of undergraduates. "Spandana" & "Warsha" events are organized with the engagement of popular artists offering unforgettable experience to Uva community. There are school level competitions: singing, dancing, drama, art and all winners are awarded with certificates at the closing ceremony.

Nirudakayata Diyapodak

Undergraduates have the opportunity of providing service concerning environmental, educational, social and economic aspects through the community service project of 'Nirudakayata Diyapodak'. Several programmes and events (cleaning programmes in public areas, solid waste management awareness programmes, volunteer teaching events for rural schools, nature conservation programmes, implementing water filters, book donation programmes to schools in rural & remote areas, renovation of elders' home) are organized by this project focusing on enhancement of the environment quality, developing literacy rates among the local community & University colleagues, and providing them with quality sanitation facilities.

Uva Wellassa University Nature Explorers' Team - UWU NET is another organization which organizes several events with the involvement of undergraduates. Fresher's hikes, competitions, awareness programmes, clean-up programmes and night camps are such kind of annual events of NET.

ALUMNI

ALUMNI

Degree programmes of the Faculty already maintains their own unique Alumni Associations. Alumni have been established for maintaining interactions between University and graduates. Also, alumni provide several benefits such as scholarships, employments, training opportunities and fund raising for the undergraduates. Alumni organizes several events annually with the participation of academic staff members, undergraduates and graduates for enhancing the synergistic collaboration and interaction.

Alumni Association of Department of Animal Science; "IMPREUNA", was established in 2017, with the objectives of supporting the Undergraduates of Department of Animal Science through enhancing the academic excellence of its undergraduates, welfare of its members and disseminating information on relevant activities, opportunities & requirements of the degree programmes. With the commencement of the Alumni, a flash light system which was a foremost deficit for the University playground was donated to facilitate the sports events including ANS Trophy in University premises. Alumni also initiated a scholarship programme to support undergraduates who require financial assistance to carry out the studies successfully.

Since most of the other degree programmes of the Faculty meet their 10th batch in 2019, they are in the progression of commencing their own alumni associations with the collaboration of 10 batches in 2019. Once all the degree programmes are equipped with their own alumni associations, a premier alumni association will be established for the Faculty of Animal Science and Export Agriculture.

KEY OFFICIALS

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Senior Assistant Librarians

Dr. T. Pratheepan
Dr. K.M.R.K. Kulathunge

Assistant Librarian

Ms. D.P.C. Vithana

Directors and members of the committees, Centers & Units

Research Committee

Chairman

Prof. H.M.S.K. Herath

Members

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Prof. E.P.S.K. Ediriweera *(Dean/Faculty of Science & Technology)*
Prof. K.B. Wijesekara *(Dean/ Faculty of Technological Studies)*
Mr. G.H. Abeyweera *(Dean/Faculty of Management)*
Mr. N.P.P. Liyanage *(Head/Department of Animal Science)*

Dr. P.E. Kaliyadasa *(Head/Department of Export Agriculture)*
Dr. J.P.R.C. Ranasinghe *(Head/Department of Management Science)*
Dr. P.H.T. Kumara *(Head/Department of Public Administration)*
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FAQS

Q: What are Compulsory Non-Credit Courses/Required Courses in the course structure?

A: These are considered in the fulfillment of the requirements of the particular degree programme and grades of these courses are not considered in calculating the Final Grade Point Average(FGPA).

Q: What are optional courses?

A: Optional Courses are offered as part of the programme. Each student should accumulate the minimum number of optional credits specified under each degree program to complete the degree. The optional courses are defined as credited courses and therefore counted in calculating the FGPA.

Q: If I would be unable to attend the lectures or practical sessions, in case of an illness or any other sudden incidence, what kind of actions I should follow?

A: Student/guardian shall inform the Dean of the Faculty within 10 working days of the incidence. Once the student returns to the University after such incidence, he/she shall report to the Dean of the Faculty through Head of the Department by a letter with acceptable evidences of such an incidence. Final decision about the attendance shall be taken by the Faculty Board.

Q: What is Continuous Assessment?

A: Students are assessed for their learning during the semester as an ongoing continuous process. Thus students have to face mid semester examinations, practical exams, spot tests, assignments, field works, project work, presentations, viva and tutorials. The weightage for continuous assessment is 40% and 60% will be allocated for end semester examinations.

Q: What is the minimum mark to be obtained for Continuous Assessments and End Semester Examinations, to pass a particular course?

A: Refer page No: 212 - 213 for information.

Q: What is the minimum Final Grade Point Average (FGPA) to complete the degree?

A: Minimum FGPA of 2.00

Q: How many numbers of attempts are allowed to be sitting for an end semester examination?

A: Number of attempts allowed to sit an end semester examination shall be not more than three, unless the student has obtained concessionary approval from the Faculty Board and the Senate.

Q: What is the maximum allowable time period to complete each degree?

A: The maximum allowable time period to complete each degree is eight years.

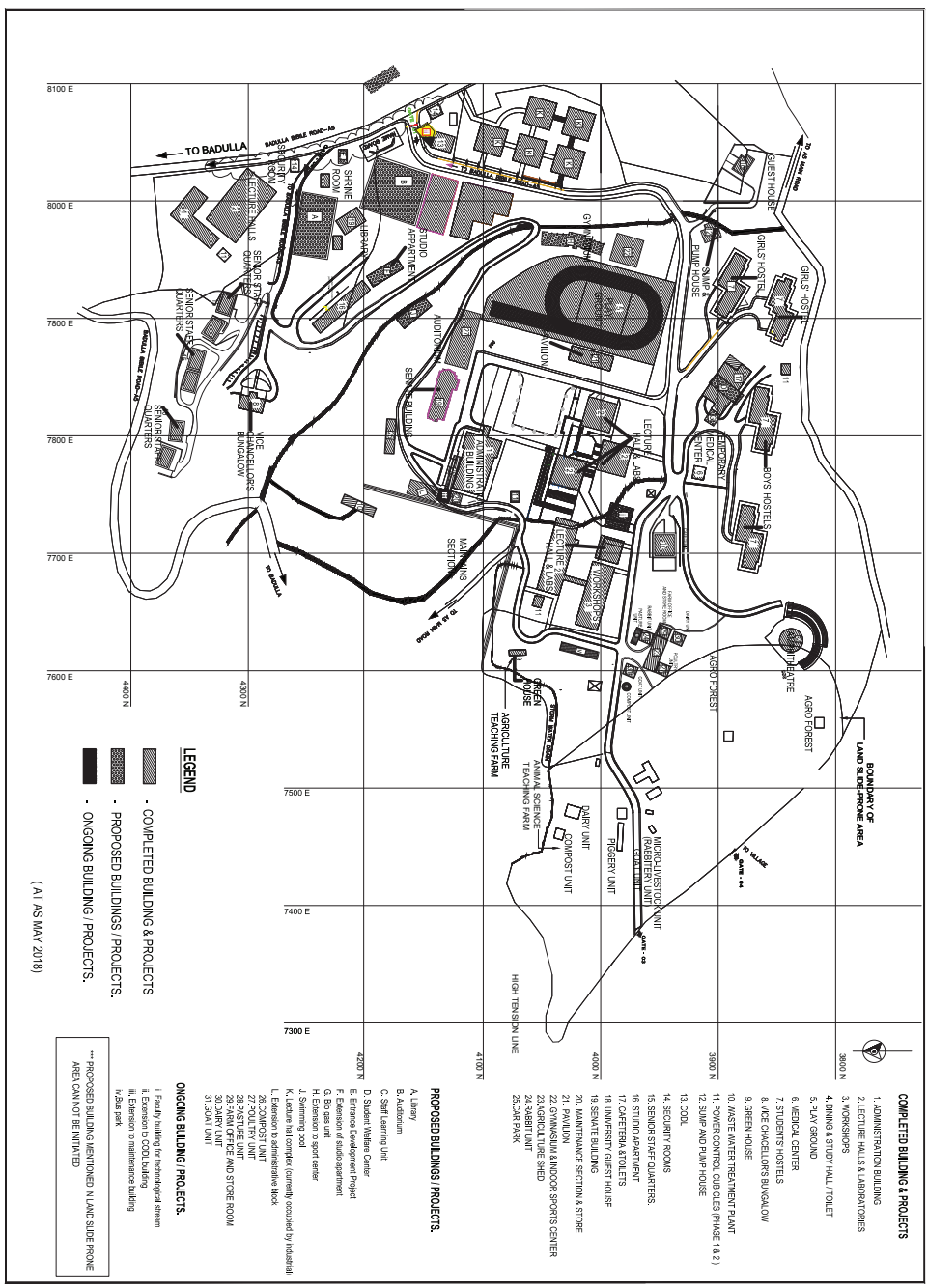
Q: Can I get the excuse for the absence of an end-semester examination due to bereavement in the family (death of a parent, brother or sister, and if married, spouse or child)?

A: Student will be excused if approval is obtained from the Faculty Board and the Senate by submitting the death certificate and appropriate proof of evidence.

Q: How to calculate the FGPA and representive grades/class accordingly?

A: Refer page No: 214 - 216 for information.

SITE MAP
UVA WELLASSA UNIVERSITY



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