



**FACULTY OF AGRICULTURAL SCIENCES  
SABARAGAMUWA UNIVERSITY OF SRI LANKA**

**Hand book**

**2014/2015**

The Faculty of Agricultural Sciences, reserves the right at any time, with the approval of the Senate, to change or modify any aspect of any course or programme whenever, in its judgment, it becomes necessary or advisable to do so.

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# **SABARAGAMUWA UNIVERSITY OF SRI LANKA**

## **VISION**

*“To be an internationally acclaimed centre of excellence in higher learning producing dynamic leaders and nation builders to guide the destiny of Sri Lanka”*

## **MISSION**

*“Our mission is to search for and disseminate knowledge promote learning, research and training to produce men and women proficient in their respective disciplines possessing practical skills and positive attitudes enabling them to contribute towards the man power requirements of the nation”*

*It will be a centre of excellence for research and development for the Sabaragamuwa Province in particular and Sri Lanka in general.*

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# **1 INTRODUCTION**

## **1.1 SABARAGAMUWA UNIVERSITY OF SRI LANKA**

### **1.1.1 BACKGROUND**

The Sabaragamuwa University of Sri Lanka was established under the Universities Act Number 16 of 1978 on 7<sup>th</sup> November 1995 and ceremonially inaugurated on 2<sup>nd</sup> February 1996. Assigned to the University are the Faculties of Agricultural sciences, Applied Sciences, Geomatics, Management Studies and Social Sciences and Languages set up at Belihuloya in Rathnapura District of the Sabaragamuwa Province.

SUSL has eight study centers/units viz. Centre for Computer Studies, Staff Development Centre, Career Guidance Unit, Center for Open and Distance Learning, English Language Teaching Unit, Centre for Indigenous Community Studies, and Sabaragamuwa University Industry Community Interaction Cell (SUICIC) established within the University.

### **1.1.2 VISION AND MISSION OF THE UNIVERSITY**

The University has a vision “to be an internationally acclaimed centre of excellence in higher learning and research, producing dynamic managers, leaders and nation builders to guide the destiny of Sri Lanka”.

The mission of the University is “to search for and disseminate knowledge, promote learning, research and training to produce men and women proficient in their respective disciplines possessing practical skills and positive attitudes enabling to contribute towards sustainable development of the country”.

In support of its vision the University has setup four goals, in its corporate plan

To be a centre of excellence in higher education

Achieve the status of an internationally acclaimed regional institute of research and development

Enhance industry, connectivity and community participatory activities

To be within the top 250 universities in Asia

### **1.1.3 THE FACULTIES AND DEGREE PROGRAMMES**

The Sabaragamuwa University of Sri Lanka offers the following degree programmes through its five faculties.

The Faculty of Agricultural Sciences offers four year B.Sc. (special) degree program in Agricultural Sciences and Management through its three departments, the Department of Agribusiness Management, the Department of Export Agriculture and the Department of Livestock Production.

The Faculty of Geomatics offers B.Sc. degree programme in Surveying Sciences, through its two departments, the Department of Surveying and Geodesy and the Department of Cartography, Photogrammetry, Remote Sensing and Geographic Information Systems (GIS).

The Faculty of Management Studies offers B.Sc. degree programmes in Business, Financial, Marketing, Tourism and Eco-Business Management through its four departments, the Department of Business Management, the Department of Accounting and Finance, the Department of Tourism Management and the Department of Marketing Management.

The Faculty of Social Sciences and Languages offers B.A. degree programmes in Social Sciences and Languages through its five departments, the Department of Economics and Statistics, the Department of Social Sciences, the Department of Languages, the Department of English Language Teaching and the Department of Geography and Environmental Management.

The Faculty of Applied Sciences offers four year B.Sc. (Special) degree programmes in Food Science and Technology, Environmental Sciences and Natural Resources Management, Chemical Technology, Computer Science and Technology, Applied Physics, Sports Science and Management, Physical Education, Computing and Information Systems through its five departments, the Department of Food Science and Technology, the Department of Natural Resources, the Department of Physical Sciences and Technology, the Department of Computing and Information Systems, and the Department of Sports Sciences and Physical Education. However, there is a possibility to exit at the end of the third year (completing a general degree) for students who enrol for B.Sc. degree programmes in Environmental Sciences and Natural Resources Management and Physical Sciences.

## 1.1.4 UNIVERSITY LOGO AND THE FLAG

### UNIVERSITY LOGO



The University logo comprises of a traditional oil lamp, rays of light, book, the Samanala (peak wilderness) mountain, gems, and sheaves of paddy, symbolising the region and the people that it serves and the ideas for which they stands. The traditional oil lamp and the rays of light denote the imparting of knowledge and enlightenment; book represents education; the Samanala Mountain and gems stand for the Sabaragamuwa Province and Rathnapura District respectively, and the sheaves of paddy symbols prosperity.

### UNIVERSITY FLAG

University flag comprises two colours maroon and gold, and the logo is in the centre of the flag. The maroon colour in the flag indicates maturity and the gold colour indicates the knowledge.





## **1.2 OFFICERS AND ADMINISTRATIVE STAFF OF THE UNIVERSITY**

### **1.2.1 CHANCELLOR**

Most Venerable Prof. Kamburugamuwe Vajira *Thero*

### **1.2.2 OFFICERS**

Vice Chancellor	Prof. Chandana P.Udawatte
Dean / Faculty of Agricultural Sciences	Dr. H.S.R. Rosairo
Dean / Faculty of Applied Sciences	Prof. R.M.U.S.K. Rathnayaka
Dean / Faculty of Geomatics	Dr. H.M.I. Prasanna
Dean / Faculty of Management Studies	Dr. Wasantha Rathnayake
Dean / Faculty of Social Sciences and Languages	Dr. W. Manoj Ariyaratne
Registrar	Mr. M.F. Hibathul Careem
Librarian	Ms. T.N. Neighsoorei
Bursar	Mr. K.A.R.S. Jayakody

### **1.2.3 ADMINISTRATIVE STAFF**

Deputy Registrar (Academic Establishments)	Mr. K. Gunawardana
Senior Asst. Internal Auditor	Mr. A.M.R.A. Priyashantha
Senior Asst. Bursar	Ms. K.D.D.S. Sugathapala
Senior Asst. Registrar (Examinations)	Mr. M.L. Warnasooriya
Senior Asst.Registrar(Capital Works and Planning)	Ms. S.D.D. Hiranthi
Asst. Registrar (Non Academic Establishments)	Ms. Y. Sandamali Rajapaksha
Asst. Registrar (Student Affairs)	Ms. P.D.K.R.Pathirage
Asst. Registrar (General Administrations)	Ms. L. P. Perera
Asst. Registrar (Capital Works and Planning)	Mr. G.A.D.M.Thennakoon
Asst. Bursar (Salaries)	Mr. R.M.N.K. Rathnayake
Asst. Bursar (Accounts)	Ms. C.P. Hatharasinghe
Asst. Bursar (Supplies)	Ms. Ashoka Liyanagamage
Asst. Registrar (Social Sciences)	Ms. A.A.S Priyadarshanee
Asst. Registrar (Applied Sciences)	Ms. A.K.A.S Amarasinghe
Asst. Registrar (Agricultural Sciences)	Ms. H.M.D.Y. Herath
Asst. Registrar (Management)	Ms. M.A.W.O.M.Karunarathna
Asst. Registrar (Geomatics)	Mr. N.N. Kandewatta
Asst. Registrar (CODL)	Ms. N Subodinee
Curator (Landscaping)	Mr. R.D. Rajapaksha
Works Engineer (Civil)	Mr. W.M.L.M.K. Wijesundara
Farm Manager	Mr. C.N.K. Balasooriya
Medical Officer	Dr. W.M.A.S. Wijerathne

## 2 FACULTY OF AGRICULTURAL SCIENCES

### 2.1 INFORMATION AT A GLANCE

<b>Address</b>	:	Faculty of Agricultural Sciences Sabaragamuwa University of Sri Lanka Belihuloya – 70140
<b>Telephone</b>	:	0452280041/2280046/2280073/2280074
<b>Website</b>	:	<a href="http://www.sab.ac.lk">http://www.sab.ac.lk</a>
<b>Location</b>	:	1.5 km from Colombo Badulla Road
<b>Distances to main towns</b>	:	18 km to Balangoda 30 km to Haputale 60 km to Ratnapura 50 km to Bandarawela
<b>Nearest Post Office</b>	:	Sub post office – Belihuloya
<b>Nearest Railway Station</b>	:	Haputale
<b>Police Division</b>	:	Balangoda
<b>Hospitals</b>	:	University Medical Centre Rural Hospital, Pambahinna
<b>Divisional Secretariat</b>	:	Imbulpe
<b>District</b>	:	Ratnapura
<b>Grama Niladari Division</b>	:	Muththettuwegama
<b>Elevation</b>	:	600 m above MSL
<b>Average Annual Temperature</b>	:	25°C
<b>Annual Rain fall</b>	:	1250 mm
<b>Accommodation for Visitors</b>	:	University Guest Houses University Farm Stay Belihuloya Rest House Pearl Inn, Belihuloya, River Garden Hotel, Belihuloya Water Garden, Hotel Belihuloya

## **2.2 MISSION OF THE FACULTY**

The mission of the faculty is to search for, and disseminate knowledge in the sphere of Agriculture. The faculty produces graduates in Agricultural Sciences who are proficient in the sciences/disciplines and practical skills in agriculture to contribute towards the manpower requirements of the nation.

## **2.3 OBJECTIVES OF THE FACULTY**

The objectives of the faculty at the Sabaragamuwa University of Sri Lanka is to produce graduates who would be able to

- Demonstrate broad knowledge in agriculture related subjects in Plantation, Horticulture, Livestock and Agribusiness Management.
- Apply theoretical knowledge in practical situations of commercial agriculture.
- Apply scientific knowledge to define, analyze and solve agricultural and agriculture related environmental problems
- Design and conduct scientific inquiries and experimentation when required
- Apply the principles of sound practice in relation to health, safety, animal welfare and the environment in agricultural and related industries
- Exchange, acquire and disseminate scientific and industry related information and be a partner in technology transfer
- Demonstrate excellent communication and interpersonal skills
- Secure employment opportunities worthy of the degree earned

In order to be able to achieve the above objectives, the Faculty undertook several activities to define its graduate profile.

The knowledge, skills and attitudes expected by potential employers from a graduate in agriculture have thus been identified as, knowledge and skills of subject disciplines; job commitment; good working knowledge of English; knowledge of IT; ability to meet deadlines and complete assigned tasks; punctuality; emotional maturity to take on responsibilities; ability to use resources effectively; ability to work with minimum supervision; honesty; general intelligence and ability and willingness to work diligently;

All of the above attributes and many more are basically categorized into seven broad criteria given below, as the abilities and skills that should be developed in a graduate.

- Intellectual skills
- Practical skills
- Numerical skills
- Communication skills
- ICT skills
- Interpersonal and teamwork skills
- Self management and professional development skills

Minimum performance levels of each of these have also been defined in order for a student to be eligible for graduation using benchmark statements and level descriptors in parallel to reputed universities in the world.

## **2.4 LOCATION AND FACILITIES**

### **LOCATION**

The Faculty of Agricultural Sciences is located in one of the most picturesque areas of the Island in the southern foothills of the central mountain range by, 160 km away from Colombo, on the A4 highway.

It is 18 km from Balangoda, 60 km from Ratnapura, 30 km from Haputale and 50 km from Bandarawela.

The faculty shares the facilities of the Main Campus of the Sabaragamuwa University of Sri Lanka and the faculties of Social Science & Languages, Management Studies, Applied Sciences, and Geomatics.

### **LIBRARIES**

Students can use both the Central Library and the Library of the Faculty of Agricultural Sciences.

The Central Library of the University is rich with more than 65,000 printed publications and very precise collection of periodicals, which can be used by the students, and the staff of the university.

The Faculty Library has collected around 21000 books for the lending and reference sections in relation to the subjects taught at the Faculty. Specially, in addition to the

valuable reference collection, the reference section has subscribed to periodicals including General Agricultural serials, Animal husbandry and Livestock serials, Forestry and Environmental serials, Food science and Technological serials, General Science serials, Management and Economics serials, and daily and weekly Sinhala, English and Tamil newspapers.

The Reference section of the Faculty Library is opened from Monday to Friday from 8.00 am to 6.00 pm and Saturdays from 8.00 am to 5.00 pm. The lending section is opened from Monday to Friday from 8.00 am to 4.00 pm. The above-mentioned opening hours are subjected to change during the period of examination and other special events with the approved by University administration. Students of the faculty are allowed to borrow several books from both sections under the library rules and regulations. Permanent Reference (PR) books and periodicals are not allowed to borrow.

The Central Library as well as the Faculty Library provides you the automated catalogue connected to the World Wide Web, which will provide online searching and reservations. In addition to the above services, the library handles all the transactions through library-automated system. The Faculty library also has an e-learning section. Further, the Faculty Library provides special photocopy service for the faculty students at a nominal rate. Penalty for lending books, which are returned late, will be one Rupees (Rs.1.00) per day per book and two Rupees (Rs. 2.00) per hour, per book for reference books. Other charges at the library will be made according to the rules and regulations of the library.

### **E-LEARNING CENTRE**

E-learning facilities for both students and lecturers are also available in the Faculty. These facilities can be used to search articles and for self studies where students can join with lecturers through e-learning facilities.

### **AGRIBUSINESS RESEARCH AND DEVELOPMENT CENTER (ABRDC)**

The Agribusiness Research and Development Centre is established at the Faculty of Agricultural Sciences, to serve as a resource base for research, teaching assignments, development activities and consultancies in the sphere of Agribusiness Management.

### **COMPUTER UNIT**

The IT Centre of the Faculty is fully equipped and currently operating in networked environment with 65 computers. Internet facilities are available in the computer centre and in weekdays it is kept opened from 8.00 am to 9.00 pm. and during

weekends from 8.00 am to 4.00 pm. Students can use the printing facilities in the centre for their academic needs. The main objective of the courses offered by the IT Centre is providing the basic knowledge about computer studies. Software packages are available for database management, spreadsheets, and word processing; Graphic design and statistical software packages for data analysis are also available.

### **LABORATORIES**

Four laboratories namely Laboratory of Agronomy, Laboratory of Chemistry, Laboratory of Livestock Production and Laboratory of Biotechnology and Tissue Culture are located at the Faculty and are being equipped with latest instruments and equipments. Most of the practicals arranged for students and the research activities are being conducted in these laboratories.

### **LANGUAGE LABORATORY**

Fully equipped complete language laboratory has been established at the Faculty of Agricultural Sciences with the funds of IRQUE project for the use of students and staff. Many activities according to the new curriculum of English are arranged for students in this language laboratory to improve their speaking and listening abilities.

### **FACULTY FARM**

About 38 acres of land is being developed as a teaching farm for the Faculty at Belihuloya. A wide range of vegetable crops is grown right through the year depending on the season. Integration of Livestock and Crops is aimed at, in the future development program of the farm. One-acre of coconut, rubber and tea cultivation is already established. Organic farming and Eco-farming are the new concepts introduced in the farm.

### **PROCESSING UNIT**

A processing unit has been established for processing milk and meat where students can learn about the procedures of processing. The practical and research work related to processing, especially under the Department of Livestock Production, are conducted in this processing unit established next to the Faculty Farm.

### **AGRI- MART**

Agri-Mart has been established to sell high quality crop and livestock products of the Faculty Farm. Vegetables, chicken, mutton, pork, eggs, milk, bee honey, yams and yoghurts are available in Agri-Mart.

## **AGRIFAC FARM STAY**

Cabanas established in the farm for Agro-tourism are opened for tourists since 02<sup>nd</sup> February 2010. Agrifac Farm Stay is a perfect stopover on the Colombo-Badulla Highway and a charming and peaceful holiday destination for much needed "gateway-from-it-all" restful break. An unforgettable, warm, and friendly farm style Bed & Breakfast experience awaits you in this pleasant atmosphere.

## **PRINTING UNIT**

A printing unit has been established with the IRQUE fund, which covers almost all the printing tasks related to academic, research and administrative activities in the university. This unit serves the whole university.

## **STUDENT SERVICES**

**Hostels** : Accommodation with basic facilities is provided for all students.

**Financial assistance** : Bursary and Mahapola scholarship payments will be made monthly at the bank. Exact date of payment is subjected to change from month to month but will be announced in advance.

## **CANTEENS**

Breakfast, lunch, dinner, tea, cool drinks and various snacks are available in the canteens throughout the day. Main meals should be ordered in advance. You can also purchase groceries, stationeries etc., from the canteens or from the welfare centre.

## **SPORTS FACILITIES**

The university playground is available for sports activities. Outdoor courts are provided for Tennis, Basket ball, Volleyball and Netball. Indoor facilities are available for Table Tennis, Squash, Badminton and Weights training. A 25m swimming pool is located at the sports complex. There are facilities available for many other sports.

## **AUDIO-VISUAL UNIT**

Facilities for speech, listening and drama are available in the unit. In addition, a TV STCA, a Video recorder, Cassette recorders with CD facilities are also available for students' use.

## **MAIL**

Incoming mail is kept in student mailbox at the Faculty office. Address should include the name of the student, Faculty of Agricultural Sciences, Sabaragamuwa

University of Sri Lanka, Belihuloya 70140. A sub post office is located in the Campus.

### **EXTRA CURRICULAR ACTIVITIES**

“Art Society” maintains a wall magazine “Mansala” on which students can publish their original poems, stories and art works in all three languages.

Further, Faculty Explorers Club is engaged in various types of activities; outings, tree planting campaigns, field visits and public educational and awareness programmes on the conservation of Flora and Fauna. This society provides an opportunity for bird watching and studying of Flora and Fauna in this particular area.

### **BUS SERVICE**

Buses between Kumbalgama and Balangoda pass the Main University entrance. Buses on the Colombo-Badulla road pass the Pambahinna Junction frequently. A CTB bus starts for Colombo from the Campus every morning at 4.45 am., 10.00 am and 2.00 pm.

### **BANKS**

Bank of Ceylon has a branch office within the Campus. The People’s Bank operates at Pambahinna.

### **PLACES OF WORSHIP**

**Buddhist** University Buddhist Centre is located within the Campus. Karagastalawa Temple is about 1 km west of Pambahinna Junction; Niyandagala Aranya is about 1 km east of the junction; Seela Samadhi Meditation Centre is at Silogama, Belihuloya, Bodhi Rukkaramaya, Kinchigune is at 100 m south of the Faculty of Agricultural Sciences.

**Catholic** Ave Maria Catholic Church, Belihuloya; St. Anthony’s Catholic Church, Kirindigala.

**Hindu** Kathirasan Kovil, Mariyamman Kovil, Balangoda.

**Islam** Jumma Mosque, Balangoda; Jailani Mosque, Kooragala. There is also a prayer room within the Students’ Centre.

### **PLACES OF ATTRACTION**

**Bambarakanda Falls** : Highest waterfall in Sri Lanka (241 m; 790 ft) located about 20km from the university, off the Ohiya Road near Kalupahana. plunges between Mt. Welihena and Bambaragala, over steep precipice bordered by dark, green pine forests. The deep pool in the valley below, is surrounded by paddy fields,



**Diyaluma Falls** : This is the second (220m) only to Bambarakanda in height. Diyaluma means “water gush” in Sinhala. Above the main fall of the Punagala Oya are several smaller falls that can be seen after climbing a steep path to the ridge from which the waters flow down. Diyaluma Falls is close to the Colombo Batticaloa A4 road between Koslanda and Wellawaya.

**Galagama Falls** : This is the last of a series of waterfalls on the Belihul Oya, a tributary of the Walawe Ganga. Local residents call the 5m fall “Pahantuda Ella” because it resembles the wick of an oil lamp, with the river pouring into a deep pool surrounded by a water smoothed rock wall. It is located about 5km away from the Belihuloya Rest House off the motorable road to Assaddunwela on a path through scrub jungle and paddy fields along the rocky riverbed.

**Horton Plains** : This 3,162 hectare national park is a natural playground without rivals in Sri Lanka. Best known for World’s End, which on a rare clear day would offer a spectacular view of the sea. Also, home to Leopards, Sāmbhar, Eagles and many species of butterflies, as well as rare orchids, Keena trees and exotic mosses. Horton Plains is a watershed of tremendous importance containing the second and third highest mountains in Sri Lanka. World’s End is a 21km journey up the motorable road through the Nonpariel Estate and a 4km walk through the jungle from there.

**Samanalawewa** : This is located just 7km away, from the university. This 100m high dam has created a reservoir of nearly 350 square kilometers of water at the confluence of the Walawe Ganga and Belihul Oya rivers. The power station for the hydroelectric project, which has a capacity of 120 megawatts, is located about 6km away from the dam.

**Sinharaja Tropical Rain Forest** : Still relatively untouched by man, this rain forest is the only living witness to Sri Lanka’s history. An estimated 75% of its flora is unique to this country and 19 of its 142 bird species have yet to be found outside this forest. Sinharaja is the wellspring for the Kukuleganga and Ginganga rivers. From the University, take the Colombo A4 road to Thirivana Ketiya Junction, about 5km before Ratnapura then follow the Kalawana Road to Weddagala town, and is about a 3 hour journey by a vehicle.

**Suratali Falls** : An eye-catching, 20m ribbon of water cascading down Ellamana at the eastern edge of the peak wilderness Area. Name derives from Sinhala word for caressing. Located about 8km from the University near Halpe at 105 Mile-post on the Badulla A4 road.

**Uda-Walawe National Park** : This is home to more than 250 elephants, as well as Barking Deer, Leopards, the Red-faced Malkoha and many other bird species. At the center of the park is the Uda Walawe Tank, created by a 5km dam on the Walawe Ganga. It's about 2½ hour trip by vehicle from the University.

### **3 DEPARTMENTS AND PROGRAMMES OF STUDY**

#### **3.1 DEPARTMENTS**

The faculty is composed of three departments of study

- Department of Agribusiness Management
- Department of Export Agriculture
- Department of Livestock Production

##### **3.1.1 DEPARTMENT OF AGRIBUSINESS MANAGEMENT**

The Department of Agribusiness Management was established to be a centre of excellence in agribusiness sector in Sri Lanka which was the pioneer academic department in agribusiness management in the university system of Sri Lanka. We endeavor to provide a cohesive, dynamic, innovative and market-driven educational process for developing intellectuals and entrepreneurs for the present and future.

The present curriculum traverses through the disciplines of management, agribusiness, agricultural economics, agricultural extension. Our updated curriculum is designed to enable graduates who specialize in agribusiness management to cultivate and enhance their potential for leadership, productivity and competitiveness. Our graduates can aspire for a career at middle and top managerial levels in the disciplines of general management, marketing, agribusiness, human resource management, economics etc.

##### **3.1.2 DEPARTMENT OF EXPORT AGRICULTURE**

The mission of the department is to produce graduates who possess knowledge and skills in advanced agricultural technologies and are capable of managing horticultural and plantation operations of any scale.

Students who have chosen the Department of Export Agriculture are able to specialize in either commercial horticulture or plantation Management. Graduates specializing commercial horticulture and plantation agriculture in the Department of Export Agriculture are well equipped with knowledge and skills in modern techniques of commercial agriculture. Inclusion of an intensive farm practice course and an industrial training program at reputed agro-industries to the curriculum is an advantage for enabling our graduates to play a pivotal role in the commercialization process of agriculture. Moreover, special emphasis is given on leadership and personality development to enhance their skills and attitudes to face the challenges of the dynamic business environment.

There are numerous employment prospects for these graduates, in the fields such as, private sector agro industries, public sector, research and development, international organizations, academic, and consultancy.

### **3.1.3 DEPARTMENT OF LIVESTOCK PRODUCTION**

Department of Livestock Production strives to produce future leaders and innovators who can bear major responsibilities and perform roles for the enhancement of the livestock sector.

Department of Livestock Production offers various courses related to animal production. The farm practice and the industrial training programs in this department too have strengthen the job market in Livestock and animal production so that it is not so competitive for graduates who have specialized Livestock production to screen allied jobs.

Graduates who specialize livestock production have job opportunities in different fields such as aquaculture (shrimp and aquarium farming), meat science, feed (nutritional), dairy production, poultry production and higher education (university education and higher education in overseas).

## **3.2 PROGRAMMME OF STUDY**

### **NAME OF THE NEW DEGREE PROGRAM**

The Faculty of Agricultural Sciences of Sabaragamuwa University of Sri Lanka earlier awards a B.Sc. in Agricultural Sciences & Management degree. Students would still be registered through the same window of Agriculture.

### **SALIENT FEATURES OF THE CURRICULUM**

The curriculum has adopted the course unit system where each course is worth a specific number of credits/units. Thus it will have examinations during and at the end of the course. The students will earn grade points at these examinations depending on the credit number of specific courses. It is a semester based curriculum. A credit/unit is defined as 15 hours of theory or 30 hrs of laboratory practical/field practical. The salient features of the new curriculum can be indicted as follows.

- Industrial training
- Practical orientedness
- 126 credits
- Additional hours for self learning
- Farm practice course
- Personality development Programme
- Assigning students to farm families- on-farm training

- Exposure to international languages

### **DURATION OF THE DEGREE PROGRAM**

Four years of full time study is considered as a minimum requirement to acquire the necessary knowledge, skills and attitudes required for a graduate in agriculture. The four years will comprise of 8 semesters, 2 semesters per year with each semester having 15 weeks.

### **CREDITS/ UNITS**

The total minimum requirement of credits to graduate in a 4-year study program is 120 as specified by the Quality Assurance and Accreditation Council of Sri Lanka. The proposed curriculum comprises 123 credits.

### **STRUCTURE OF THE STUDY PROGRAM**

The curriculum comprises a core program where the principles in knowledge, skills and attitudes necessary for a graduate in Agriculture are to be achieved, and a specialization program which gives flexibility for a student to pursue a subject area of his/her choice for advanced training in that subject discipline. The core program will be 66 credits and the specialization program will be 60 credits thus totaling 126 credits that must be completed for graduation.

#### **CORE PROGRAM (66 CREDITS)**

Crops and livestock production technologies along with the basic understandings of agribusiness management will be covered during the core program which will be offered in the first two years (4 semesters) of the degree program. All the courses in the core program are compulsory and have to be taken by all students. The total number of courses offered by the three departments of study is 30 including the farm practice course.

The principles of agricultural sciences will be offered during the first year. The second year was considered as most suitable to offer the farm practice course. It will provide practical skills on crops and livestock production during the 3rd and 4th semesters respectively. Most of the theories of field crop production will be offered during the 3rd semester whilst emphasis will be given to courses on livestock production during the 4th semester. The students will spend a substantial portion of their time at the farm during the second year. It is expected that the students will achieve the required knowledge and the skills in crop and livestock production at the end of the core program.

#### **SPECIALIZATION PROGRAM (60 CREDITS)**

From the 3<sup>rd</sup> year, students will select a specialization program in the areas of Commercial Horticulture, Plantation Management, Livestock Production or Agribusiness Management. The last semester will be allocated for the industrial training component of the degree program. The courses in the specialization

programs are of two types- compulsory and elective. They have been designed so that students must take certain courses that are compulsory for a particular specialization program. Other courses could be selected from elective courses as advised by the department or module-in-charge.

### **INDUSTRIAL TRAINING AND RESEARCH (DISSERTATION)**

This has been identified as one of the strongest components of the existing curriculum. It will be offered in the 8<sup>th</sup> semester. Eight credits are allocated for the industrial training in the final semester – a component in the curriculum that is hoped would introduce the students to the working world. During this program, each student will address an identified problem in an industry related to their specialization program. They will make an oral presentation as well a written report at the completion of the training during this period.

This training has now been re-designed in order to achieve higher levels of learning outcomes required for an honours graduate in agricultural sciences.

Total of 8 credits will be allocated as follows for the Industrial Training programme and the research component.

- Industrial Training - 03 credits
- Research (Dissertation) - 05 credits

### **ADDITIONAL MODULES**

English and Computer Science will be taught as basic courses. A course on Personality Development would also be offered to enhance the graduate profile. In addition, students will be given a chance to learn an international language other than English such as Japanese, German, and Chinese as a non-credited and non-compulsory course.

### **MEDIUM OF INSTRUCTION**

The medium of instruction at the faculty would be English. Hence the English curriculum has also been revised in order to cater to the needs of students. A total of 390 contact hours have been assigned for English in order to address the four skills – reading, writing, listening and speaking. English will be offered as a subject during all four years (1st – 7th semesters).

### **COURSE NOTATION**

Each course in the curriculum would have a specific notation. The course notation would be such that it will have a prefix denoting the department which will offer the course followed by the year and semester in which it is offered and a two digit

number which is the number given by that department for that course. This notation will also show the credit number for that course and the number of theory and practical hours assigned to the course.

e.g.: EA 1101 (2:15/30).

### **CREDIT UNIT**

A credit unit is defined as 15 hours of lectures or 30 hours of laboratory practicals/ field practicals.

### **CREDITED COURSES**

These are courses that will earn grade points for the students and contribute to the Grade Point Average (GPA) of a student. All courses in the core program, compulsory and elective courses in the specialization programs industrial training program and the research will be credited courses.

### **NON- CREDITED COURSES**

These are courses that have to be taken by students as partial fulfillment for the requirements of the degree program. They many have specific credit numbers, but will not contribute to the GPA of a student. These are courses in English, Personality Development, IT and alternative languages.

### **3.3 POSTGRADUATE STUDIES**

A Masters degree programme has been initiated by the Department of Agribusiness Management for eligible graduates willing to pursue a Masters Degree in Agribusiness Management. A Masters degree programme is also offered by the Department of Livestock Production

### **3.4 DIPLOMA PROGRAMMES**

The faculty conducts external programmes leading to Diploma in Agribusiness Management, Landscaping and Gardening, and Eco Agriculture.

## **4 OFFICERS, ADMINISTRATIVE AND ACADEMIC STAFF OF THE FACULTY**

### **4.1 ADMINISTRATIVE STAFF**

Dean/ Faculty of Agricultural Sciences	- Dr. H.S.R. Rosairo
Head/ Dept. of Agribusiness Management	- Dr. S.T.C. Amarasinghe
Head/ Dept. of Export Agriculture	- Dr. P K. Dissanayake
Head/ Dept. of Livestock Production	- Dr. M.A.J.P. Munasinghe
Assistant Registrar	- Ms. H.M.D.Y. Herath

### **4.2 ACADEMIC STAFF**

#### **4.2.1 DEPARTMENT OF AGRIBUSINESS MANAGEMENT**

##### ***Head of Department***

Dr. (Mrs.) S.T.C. Amarasinghe

BSc Agric (Pdn), MPhil (Pdn), PhD (China), Dip (Business Management)

**Research Interests** : International Business, Agribusiness Management, Agricultural Economics

##### ***Professors***

Prof. Rohana P. Mahaliyanaarachchi

MSc (PLOVDIV), PhD (Pdn), Post Doc. (Reading)

**Research Interests** : Agricultural Marketing, Agricultural Extension, Agricultural Management, Agricultural Tourism

Prof.(Mrs). D.A.M. De Silva

BSc Agric (Ruhuna) MBA (Pdn), PhD (Japan), Post Doc. (UK)

**Research Interests** : Human Resource Management, Social Capital, International Trade, Agricultural Marketing

Prof. M Esham

BSc Agric (Pdn), MBA (SriJ), PhD (Japan) Post Doc.(Japan) Post Doc (UK)

**Research Interests** : Entrepreneurship Development, Agribusiness Management, Climate Change



### ***Senior Lecturers***

Dr. H.S.R. Rosairo

BSc Agric Hons (Pdn), MBA (Colombo), PhD Lincoln (New Zealand), Post Doc. Bradford, (UK)

**Research Interests** : Agricultural Marketing, Agribusiness Management, Farmer Organizations

Dr. (Mrs). S.H.P. Malkanthi

BSc Agric (Pdn), MPhil (Pdn), PhD (Thailand)

**Research Interests** : Agricultural Sociology, Agricultural Extension

Dr. A.W. Wijeratne

BSc Agric (Pdn), MSc (Pdn), PhD (China)

**Research Interests** : Mathematical modeling in business and economics, spatial statistics

### ***Lecturers***

Mr. P. Sivashankar

B.Sc Agric (Pdn)

**Research Interests** : Agricultural Economics

Mr. I. Hettarachchi

B.Sc. Agric (SUSL)

**Research Interests** : Human Resource Management, Tourism Management

#### 4.2.2 DEPARTMENT OF EXPORT AGRICULTURE

##### *Head of Department*

Dr. P.K. Dissanayake

BSc Agric (Pdn), MSc (Pdn), PhD (Japan), Post Doc (UK)

**Research Interests** : Plant Biotechnology, Horticulture, Biodiversity, Post harvest physiology. Chlorophyll degradation of Horticultural crops.

##### *Professors*

Prof. A.A. Yasarathna Amarasinghe

BSc Agric (Pdn), MPhil (Pdn), PhD (China), Dip (Biotechnology)

**Research Interests** : Plant Biotechnology, Plant Cell and Tissue Engineering, Crop Genetics and Breeding

Prof. Lal P. Vidhana Arachchi

BSc Agric (Pdn), MSc (Malaysia), PhD (J'pura), Post doc (Japan), UK

**Research Interests** : Soil and Water Management, Irrigation, Soil Physics, Improvement of degraded Lands

Prof. (Mrs.) P.M.A.S. Karunaratne

BSc Agric (Pdn), MPhil.(Pdn), PhD(UK), Post Doc. (UK)

**Research Interests** : Crop Modeling, Crop physiology, Environment stress physiology

##### *Senior Lecturers*

Dr. (Mrs.) M.L.M.C. Dissanayake

BSc Agric (Pdn), MPhil (Pdn), PhD (Japan)

**Research Interests** : Molecular Plant pathology, Molecular characterization of pathogen, Toxins produced by fungi, Antimicrobial activity of medicinal plants against plant pathogenic Microbes

Dr. P. I. Yapa

BSc. Agric (Pdn). MSc. Agric (Pdn), PhD (UK)

**Research Interests** : Organic Agriculture, Waste Management, Soil Management, Environmental Sciences

Dr. A D Ampitiyawatta

BSc. Agric (Ruhuna), MSc (Pdn), DEng (Wuhan-China), Diploma in Water Resource Engineering (China)

**Research Interests** : Water Resources Management, Ecohydrology, Rainwater Harvesting Agro-Climatology

Dr. G.D.K. Kumara

BSc Agric (Pdn) MSc (Pdn), PhD (China)

**Research Interests** : Tissue culture Technology, Floriculture, Horticulture, Post harvest Physiology & Technology of Horticulture crops

Mrs. D.I.M. Amaratathna

BSc. Agric Sciences (SUSL), MPhil (Pdn)

**Research Interests** : Plant Biotechnology, Field Crops, Protected Agriculture

***Lecturer***

Mr. J.B.D.A.P. Kumara

BSc Agric Sciences (SUSL), M.Sc (Ind)

**Research Interests** : Plantation Crops, Sustainable Agriculture, Plant Genetic Research

Mrs. W.G.C. Wekumbura

BSc. Agric Sciences (SUSL), M.Sc. (Pdn)

**Research Interests** : Plantation Crop Production & Processing, Quality improvement of Plantation products, Organic crop production.

Mrs. W.M.A.U.K.M. Wijesekara

BSc. Agric Sciences (SUSL) M.Sc. (Pdn)

**Research Interests** : Botanical insecticides & antifeedants, Insect pest Management of Horticultural crops.

#### 4.2.3 DEPARTMENT OF LIVESTOCK PRODUCTION

##### *Head of Department*

Dr. M.A.J.P. Munasinghe

MSc, PhD (USSR)

**Research Interests** : Genetic markers and their applications in livestock, Application of gene markers in poultry breeding, Quality management of food processing and handling

##### *Professors*

Prof. D.M.A. Gunarathne

BSc (Pdn), MSc (MUN,Canada), PhD (HKU,Hong Kong)

**Research Interests** : Starch Structure Functional Properties and Modification, Starch-based Food Product, Resistant Starch, Grain Science and Technology

##### *Senior Lecturers*

Dr. T.S.P. Jayaweera

BVSc (Pdn.), MSc (Belgium), MPhil (Pdn), PhD (Pdn)

**Research Interests** : Meat Processing, Swine Production, Animal Health, Production of Low Cholesterol Meat

Dr. C.N. Walpita

BSc Agric (Pdn.) MSc (Belguim), PhD (Belgium)

**Research Interests** : Thyroid Endocrinology in early development, Target gene knock- down, Farming of lesser- known fish species, Environmental impacts of Aquaculture, Endemic fish species conservation.

Dr. (Mrs.) R.K. Mutucumarana

BVSc (Pdn), M.phil (Pdn), PhD (NewZeland)

**Research Interests** : Poultry Science & technology, Animal Health

Dr. Manjula P. Sumith Magamage

BVSc (Pdn.), MSc , PhD (Kobe-Japan), Post Doc. (Nebraska – USA) Fulbright academic and research fellow.

**Research Interests** : In vivo and in vitro growth maturation of mammalian oocytes, IVG-IVM systems for mammals, ART, Xenotransplation, Molecular and cellular regulators of gonadal

development and function. Diseases and clinical biochemistry, gene knockdown by siRNA, animal breeding.

Dr. Mrs. H.A.D. Ruwandeepika

BVSc (Pdn.), MSc (Belgium), PhD (Belgium)

**Research Interests** : In vivo and in vitro virulence genes expression of fish pathogens, Fish diseases, Clinical microbiology, Molecular Microbiology, Aquaculture

Ms. R.M.A.S. Bandara

BSc Agric Sciences (SUSL), M.Phil (Pdn)

**Research Interests** : Animal behavior and welfare, Indigenous medicine for Animals

### *Lecturers*

Mr. D. D. Wickramanayaka

BSc Agric Sciences (SUSL)

**Research Interests** : Dairy Production and technology, Dairy Microbiology, Ruminant Nutrition

MS. H.M.G.P. Herath

Bsc. Agric sciences (SUSL)

**Research interests** : Animal Nutrition Aquaculture

#### **4.2.4 ENGLISH UNIT**

##### ***Co-ordinator / Senior Instructor***

Mr. J.S. Senadheera

BA (USJP), MA (KLN), National Diploma in Teaching - English  
(NIE)

#### **4.2.5 LIBRARY**

##### ***Senior Assistant Librarian***

Dr. W.W.K.L. Wickramanayake

BA (Kelaniya), MLSc (Colombo), PhD (China)

#### **4.2.6 COMPUTER CENTER**

##### ***Co-ordinator/Instructor***

Mr. W.H.D. Premawardhane

BSc (Colombo), PG Diploma (Colombo)

##### ***Instructor***

Ms. Sashika H Kiriella

BSc (Kelaniya)

### **4.3 FACULTY BOARD**

#### ***Chairman***

Dr. H.S.R. Rosairo

#### ***Members***

Dr. (Mrs.) S.T.C. Amarasinghe

Dr. P.K. Dissanayake

Dr. M.A.J.P. Munasinghe

Prof. Rohana P. Mahaliyanaarachchi

Prof. A.A.Yasarathna Amarasinghe

Prof. Lal P. Vidhana Arachchi

Prof. D.M.A. Gunaratne

Prof. (Mrs.) D.A.M. De Silva

Prof. (Mrs.) P.M.A.S. Karunaratne

Prof. M Esham

Dr. S.H.P. Malkanthi

Dr. (Mrs.) M.L.M.C. Dissanayake

Dr. P.I. Yapa

Dr. T.S.P. Jayaweera

Dr. A.D. Ampitiyawatta

Dr. A.W. Wijerathne

Dr. C.N. Walpita

Dr. G.D.K. Kumara

Dr. M.M.P. Sumith

Dr. (Mrs.) R. K. Muthucumarana

Dr. (Mrs) H.A.D. Ruwandeepika

Mrs. D.I.M. Amaratthna

Ms. R.M.A.S. Bandara

Mr. J.B.D.A.P. Kumara

Mr. P. Sivashankar

Ms. W.M.A.U.K.M. Wijesekara

Mr. J.S. Senadeera (on invitation)

Mr. G. Weerakkodi (External Members)

Mr. S. Gamage (External Members)

Mr. K.P.Somachandra (External Members)

Dr. W.W.K. Lalith

Mr. W.H.D. Premawardana (on invitation)

Mr. R.D. Rajapaksha (on invitation)

Ms. H.M.D.Y. Herath (Secretary)

Two Student Representatives

## **5 COURSE OUTLINES**



**PHOTO**

AB

**Courses of Core Programs Offered by the Department of Agribusiness Management**

<b>Year I</b>		<b>Year II</b>	
<b>Semester I</b>	<b>Semester II</b>	<b>Semester I</b>	<b>Semester II</b>
Mathematics AB 1101 (2:15/30)	Applied Statistics AB 1201(2:15/30)	Experimental and Survey Designs AB 2101 (2: 15/30)	Agricultural Extension AB 2201 (2:30/00)
Micro Economics AB 1102 (2:30/00)	Principles of Agribusiness Management AB 1202 (2:30/00)		Macro Economics AB 2202 (2:30/00)
			Human Resource Management I AB 2203 (2:30/00)

## **COURSE CAPSULES OF THE DEPARTMENT OF AGRIBUSINESS MANAGEMENT**

### **AB 1101 (2:15/30) MATHEMATICS**

#### **Theory**

Number Systems, Theory of Indices and Logarithms, Permutations, Combinations and Binomial Theorem, Functions and Relationships, Set Theory, Trigonometry, Co-ordinate Geometry, Calculus: differentiation, Introduction to Integrals; Matrix Algebra

### **AB 1102 (2:30/00) MICRO ECONOMICS**

#### **Theory**

Introduction to Micro Economics, Theory of Demand, Elasticity of Demand, Theory of Supply, Equilibrium Analysis, Theory of Consumer Behaviour, Theory of Production, Theory of Costs, Theory of Market,

### **AB 1201 (2:15/30) APPLIED STATISTICS**

#### **Theory**

Introduction, Descriptive Statistics, Elementary Probability Theory, Theory of Distributions, Statistical Inference and Hypothesis Testing: One sample t-test, two sample t-test, one-way ANOVA, regression and correlation, categorical data analysis; Introduction to Statistical Quality Control

#### **Practical**

### **AB 1202 (2:30/00) PRINCIPLES OF AGRIBUSINESS MANAGEMENT**

#### **Theory**

Introduction to Management, The Management Process, Groups at Work, Management by Objectives (MBO), Organization Structures, Managing Change, Time Management, Quality Management, Types of Business Organizations, Strategic Management

### **AB 2101 (2:15/30) EXPERIMENTAL AND SURVEY DESIGNS**

#### **Theory**

Introduction, Complete Block Designs, Mean Separation Procedures, Factorial Experiments, Incomplete Block Designs, Analysis of Covariance, Nested factorial designs, Survey Designs

**AB 2201 (2:30/00)      AGRICULTURAL EXTENSION**

**Theory**

1. Introduction to Agricultural Extension, Extension Communication , Research-Extension Linkage, Adoptions and Diffusion of Innovations , Extension Methods, Extension Officer and Supporting Activities in Agricultural Extension , Extension Programme Development

**AB 2202 (2:30/00)      MACRO ECONOMICS**

**Theory**

Introduction to Macroeconomics, Aggregate Demand, IS-LM Equilibrium, Introduction to International Economics, Unemployment, Inflation, Growth and Development

**AB 2203 (2:30/00)      HUMAN RESOURCE MANAGEMENT I**

**Theory**

Introduction to Human Resource Management (HRM), Human Resource Planning, Recruitment & Selection, Human Resource Development(HRD) and Training , Performance Management and Performance Appraisal, Pay and Compensation

### Courses of Specialization Program Offered by the Department of Agribusiness Management

Year and Semester	Course Notation, Name, Units and Hours for theory and practical	Compulsory / Elective
Year III Semester I	AB 3101 Advanced Agribusiness Management (3:30/30) AB 3102 Agricultural Finance and Accounting (3:30/30) AB 3103 Business Communication (2:30/00) AB 3104 Managerial Economics for Decision Making (3:45/00) AB 3105 Marketing Management (3:45/00) AB 3106 Organizational Behavior and Dynamics (3:45/00)	All are compulsory
Year III Semester II	AB 3201 Agricultural Marketing and Postharvest Management (3:45/00) AB 3202 Business Law (3:45/00) AB 3203 Entrepreneurship and Small Business Management (3:30/30) AB 3204 Information Technology in Agribusiness (2:15/30) AB 3205 Research Methods for Agribusiness (3:45/00) AB 3206 Social Interventions in Rural Development (3:45/00)	All are compulsory
Year IV Semester I	AB 4101 Agricultural Development and Policy (3:45/00) AB 4102 Agricultural Tourism (3:30/30) AB 4103 GIS and Remote Sensing in Agribusiness (3:30/30) AB 4104 Human Resource Management II (2:30/00) AB 4105 International Business and Trade Operations (3:45/00) AB 4106 Practical Communication Skills (3:30/30) AB 4107 Proposal Formulation and Seminar (1:00/30) AB 4108 Quantitative Techniques in Agribusiness (3:30/30) AB 4109 Quality Management and Product Certification (3:45/00) AB 4110 Strategic Management and Management of Change (3:30/30)	Elective Elective Elective Compulsory Compulsory Elective Compulsory Elective Elective Elective
Year IV Semester II	AB 4201 Industrial Training (3:00/90) AB 4202 Research (5:00/150)	Compulsory Compulsory

**AB 3101 (3:30/30)      ADVANCED AGRIBUSINESS MANAGEMENT**

**Theory and practicals.**

The Perspective of Agribusiness, Management of Farm Production System, Farm Staff Management, Computers in Agribusiness, Alternative Farm business Structures in Sri Lanka and Elsewhere

**AB 3102 (3:30/30)      AGRICULTURAL FINANCE AND ACCOUNTING**

**Theory**

Introduction to Agricultural Finance, Introduction to Accounting, Accounting Rules,

Recording Data, Last Minutes Adjustments, Basic Financial Statements of Sole Proprietorships, Company Accounts, Manufacturing Accounts, Cash Flow Statement, Interpretation and Financial Reporting

**AB 3103 (2:30/00)      BUSINESS COMMUNICATION**

**Theory**

Communication Fundamentals, Listening, Business Presentations, Presentation Delivery,

Writing Business Letters, Report Writing, Resume / CV writing, Facing and Conducting Interviews, Conducting Meetings

**AB 3104 (3:45/00)      MANAGERIAL ECONOMICS FOR DECISION MAKING**

**Theory**

Introduction and Overview, Demand and Supply Analysis, Production and Cost, Market Structure and Pricing Strategy, Investment Appraisal, Forecasting and Trend Analysis, Risk and Uncertainty in Agribusiness

**AB 3105 (3:45/00)      MARKETING MANAGEMENT**

**Theory**

Introduction to Marketing Management, Marketing Mix, Buying Behavior, Strategic Marketing Planning, Dealing with Competition, Introduction to Service Marketing, Managing Brands, Marketing Research

**AB 3106 (3:45/00) ORGANIZATIONAL BEHAVIOUR AND DYNAMICS**

**Theory**

Organizational Culture, Organizational Design, Diversity and Globalization, Cognitive Process of Organizational Behaviour , Organizational Dynamics,

**AB 3201 (3:45/00) AGRICULTURAL MARKETING AND POST-HARVEST MANAGEMENT**

**Theory**

Introduction to Agricultural Marketing, Markets and Policy , Agricultural Marketing Functions, The Agricultural Marketing Organization , Pricing of Agricultural Products, Government Interventions and Other Marketing Agencies, Marketing of Farm Inputs, Post-Harvest Management of Agricultural Products

**AB 3202 (3:45/00) BUSINESS LAW**

**Theory**

Company Law, Law of Partnership, Law of Contracts

**AB 3203 (3:30/30) ENTREPRENEURSHIP AND SMALL BUSINESS MANAGEMENT**

**Theory**

Nature of Entrepreneurship, Small Business, Entrepreneurship and Innovation, Entrepreneurial Process, New Venture Creation, Rural Entrepreneurship, Trends and Issues in Entrepreneurship Development in Sri Lanka

**AB 3204 (2:15/30) INFORMATION TECHNOLOGY IN AGRIBUSINESS**

**Theory**

Introduction to Information Technology, Information Systems, Towards the Digital Firm-Electronic Business, Key System Applications in the Organization, Enterprise Applications, Computer Security, Introduction to GIS Technology and its Potential in Agriculture and Business Management, Introduction to Remote Sensing and its Potential in Agriculture and Business Management

**AB 3205 (3:45/00) RESEARCH METHODS FOR AGRIBUSINESS**

**Theory**

Formulating and Clarifying the Research Topic, Critical Review of Literature, Deciding on the Research Approach and Choosing the Research Strategy, Negotiating Access and Research Ethics, Sampling, Using Secondary Data , Collecting Primary Data through Observation, Collecting Primary Data using Semi-Structured and In-depth Interviews, Collecting Primary Data Using Questionnaires, Analysing Quantitative Data, Analysing Qualitative Data, Reporting Research Findings

**AB 3206 (3:45/00) SOCIAL INTERVENTIONS IN RURAL DEVELOPMENT**

**Theory**

Introduction to Agriculture, Basic Concepts in Sociology, Important Sociological Aspects in Agricultural Development.

**AB 4101 (3:45/00) AGRICULTURAL DEVELOPMENT AND POLICY**

**Theory**

Introduction to the Development, Agriculture and Economic Development, Factors Affecting Agricultural Development, Environment and Development,

**AB 4102 (3:30/30) AGRICULTURAL TOURISM**

**Theory**

Introduction to Agricultural Tourism, Planning & Organizing Agricultural Tourism, Business Opportunities of Agricultural Tourism, Farm Bed & Breakfast/ Farm Vacation Business, Marketing & Promoting of Agricultural Tourism

**AB 4103 (3:30/30) GIS AND REMOTE SENSING IN AGRIBUSINESS**

**Theory**

Introduction to the Course and Geographical Information System GIS, Spatial Data for GIS , GIS Data Models, Maps as a Spatial Data Source, Attribute Database, GIS Components- Hardware and Software, GIS Data Analysis, Historical Review and Characteristics of Real Remote Sensing Systems, Satellite Image and Sensors



Image Analysis and & Interpretation, GIS and Remote Sensing Application in Agriculture

**AB 4104 (2:30/00) HUMAN RESOURCE MANAGEMENT II**

**Theory**

1. Introduction to Strategic Human Resource Management, Developing a HRM Plan, Managing Human Resources Across Global and Multicultural Boundaries, Emerging Labor Markets and their Behavior, Employee Relation, Safety and Health at Workplace

**AB 4105 (3:45/00) INTERNATIONAL BUSINESS AND TRADE OPERATIONS**

**Theory**

Introduction to International Business, Methods of International Business, Different Environments in International Business, Theories of International Business, Introduction to International Economics, Economic Integrations, Operational Aspects of International Business

**AB 4106 (3:30/30) PRACTICAL COMMUNICATION SKILLS**

**Theory**

Speaking, Effective Telephone Communication, Effective Meetings, Writing Skills Reading Skills, Interviewing

**AB 4107 (1:00/30) PROPOSAL FORMULATION AND SEMINAR**

**Practicals (30 hrs)**

Formulation as a research proposal on a special issue in Agribusiness and presentation at a seminar

**AB 4108 (3:30/30) QUANTITATIVE TECHNIQUES IN AGRIBUSINESS**

**Theory and Practical**

Basic Concepts of Regression Analysis, Two Variable Regression Analysis, Interval Estimation and Hypothesis Testing , Multiple Regression Analysis, Matrix Approach to Regression Analysis, Assumptions of Classical Regression Model, Introduction to Econometric Modeling, Application of Regression Analysis in Econometric, Simultaneous Equation Models, Time Series Analysis, Theory of Optimization

**AB 4109 (3:45/00)      QUALITY MANAGEMENT AND PRODUCT  
CERTIFICATION**

**Theory**

Introduction, Focus, Quality systems, Quality Improvement, Product Certification

**AB 4110 (3:30/30)      STRATEGIC MANAGEMENT AND  
MANAGEMENT OF CHANGE**

**Theory and Practical**

Introduction to Strategic Management, Concepts of Competitiveness and Competitive Advantage, Analysis of Environment, The Process of Strategic Management , Strategy in Action , Issues Related to Strategic Management , Management of Change, Business Process Re-Engineering

**AB 4201 3:00/90      INDUSTRIAL TRAINING**

**Intended Learning Outcomes**

- Display attributes, skills, behavior and attitudes required at a work place.
- Apply appropriate scientific principles and techniques in a dynamic working environment.
- Demonstrate the ability to establish effective relationships with others, and to define, share and delegate responsibilities.
- Display skills of professional scholarship required for personal development and career management.

AB

**AB 4202 5:00/150      RESEARCH**

**Intended Learning Outcomes**

- Exhibit the scientific writing ability.
- Synthesize a problem statement.
- Identify the objectives of a study.
- Use relevant theoretical and empirical models in the study.
- Perform a literature review.
- Analyze the data using appropriate techniques.

- Discuss and interpret the results and draw conclusions from the study carried out.
- Draw policy implication based on the results of the study.

EA

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**Courses of Core Program Offered by the Department of Export Agriculture**

Year I		Year II	
Semester I	Semester II	Semester I	Semester II
Horticultural Crop Production EA 1101(2: 15/30)	Biotechnology EA 1201 (2: 15/30)	Entomology EA 2101 (2: 15/30)	Plantation Crop Production EA 2201 (2: 15/30)
Plant Physiology EA 1102 (2: 15/30)	Principles of Agricultural Engineering EA 1202 (3: 30/30)	Farm Mechanization EA 2102 (2: 15/30)	
Principles of Agronomy EA 1103 (2: 15/30)	Soil Fertility and Plant Nutrition EA 1203 (2: 15/30)	Farm Practice I EA 2103 (4: 00 /120)	
Principles of Soil Science EA 1104 (2: 15/30)		Field Crop Production EA 2104 (2: 15/30)	
		Plant Pathology EA 2105 (2: 15/30)	

## **COURSE CAPSULES OF CORE COURSES OFFERED BY THE DEPARTMENT OF EXPORT AGRICULTURE**

### **EA 1101 (2:15/30) HORTICULTURAL CROP PRODUCTION**

#### **Theory**

Introduction to Horticultural Crops; importance of horticulture, introduction to the major sectors of horticulture, floriculture, olericulture, pomology, landscape gardening, nursery culture, present status, potential and constraints in growing horticultural crops in Sri Lanka, Environmental relations of horticultural crops, Propagation techniques of horticultural crops, Vernalization and its influences, photoperiod interactions, pruning and growth control, fruit development and fruit set.

#### **Practicals**

Identification of floriculture items in Sri Lanka, Asexual propagation techniques: stem cuttings, leaf cuttings, special structures, budding, grafting and layering, advanced propagation systems: tissue culture, seed culture, meristem culture, shoot culture, identification of pruning and training methods of agricultural crops, floral biology, Types of fruits, fruit growth curves and fruit ripening, potting mixtures, nursery mixtures and their sterilization.

EA

### **EA 1102 (2:15/30) PLANT PHYSIOLOGY**

#### **Theory**

Plant cell; components of the plant cell, cell functions, photosynthesis, respiration, osmotic relations of plant cells, absorption of water, ascent of sap, transpiration, translocation and storage of food in plants, plants growing in extreme environments and their physiological functions.

#### **Practicals**

Determination of an absorption spectrum, determination of the chlorophyll content of C<sub>3</sub>, C<sub>4</sub> and CAM plants, observation of plasmolysis and deplasmolysis in epidermis of red onion, estimation of the water potential of potato tubers by weight and volume, stomata structures in dicots and monocots, demonstration of tension of stem in transpiring plants, The Munch Pressure-Flow model of phloem transport, measurement of photosynthesis, respiration and plant water potential.

### **EA 1103 (2:15/30) PRINCIPLES OF AGRONOMY**

#### **Theory**

External factors affecting crop growth; climatic factors, agro climate of Sri Lanka, agro ecological zones of Sri Lanka, Hydrology and meteorology;

Hydrological cycle and its components, rainfall, interception, Run off, infiltration, percolation, evaporation, transpiration, condensation, analysis of a rainfall chart, Hydrographs and hydrograph analysis, Internal seed quality parameters; seed germination, viability, vigor and dormancy, seed treatments. Plant growth and yield analysis, Weed biology and control.

### **Practicals**

Identification and use of different meteorological instruments, identification of agro climatic zones based on climatic data, growth analysis, seed viability test, pre treatments of seeds, breaking dormancy in seeds, seed germination test, identification of different types of weeds, identification of different kinds of herbicides and formulation of herbicides.

## **EA 1104 (2:15/30) PRINCIPLES OF SOIL SCIENCE**

### **Theory**

Introduction to soil science, Soil genesis; rocks and minerals, classification and properties of rocks, rock weathering, rocks and geology of Sri Lanka, soil formation, soil forming minerals and rocks, Soil physical properties; soil colour, soil texture, structure and aggregation, bulk and particle densities, pore space, consistence, soil water, Soil air, Soil profile description, chemical aspects of soil, soil biology, problem soils and soil management, soils of Sri Lanka.

### **Practicals**

Identification of rocks and minerals, determination of soil colour, texture and moisture content, structure, saturated and hydraulic conductivity, observations of soil profile.

## **EA 1201 (2:15/30) BIOTECHNOLOGY**

### **Theory**

Plant genome, the molecular nature of genes, methods in molecular biology, transcription, translation, DNA replication and recombination, tissue culture techniques and their applications in plant biotechnology.

### **Practicals**

DNA and RNA isolation techniques, basic concepts of PCR and use of PCR machine, electrophoresis techniques, basic micro-propagation techniques and plant regeneration techniques.

**EA 1202 (3:30/30)      PRINCIPLES OF AGRICULTURAL  
ENGINEERING**

**Theory**

Irrigation and drainage; moisture status of soil, methods of irrigation, irrigation scheduling, drainage systems and materials, flow measurements. applied dynamics; introduction to applied dynamics, vector and scalar velocity and relative velocity, acceleration, newton's law of motion, introduction to strength of material, force equilibrium, Young's modules, watershed management.

**Practicals**

Measurement of irrigation stream flow, force equilibrium, Identification of different soil conservation methods, construction of contour maps, laboratory analysis of water quality parameters.

**EA 1203 (2:15/30)      SOIL FERTILITY AND PLANT NUTRITION**

**Theory**

Introduction to soil fertility; fertility, productivity, quality, physical, chemical and biological aspects of soil fertility, plant nutrition; macro, micro, beneficial nutrients, organic and inorganic fertilizers, nutrient cycles, soil and plant relations, soil fertility vs. soil quality, adverse conditions in the soil; management of problem soils.

**Practicals**

Measurement of soil PH & EC, measurement of soil CEC, analysis of soil samples for available N,P,K, soil fertility assessment using a short term crop, identification of organic and inorganic fertilizers (based on physical properties), estimation of soil organic matter.

**EA 2101 (2:15/30)      ENTOMOLOGY**

**Theory**

Introduction to insects, insects structure, anatomy and physiology of insects, systematic nomenclature/classification, conventional and modern pest control methods; integrated pest management strategies, evaluation of different pest control tools for limitations and potentials.

**Practicals**

Use and care of the microscope, preparation of slides and mounting of insect parts, mouth parts and its modifications, insect antennae and its modification, insect wings and its modifications, legs and its modifications, identification of insect pests of different orders, preparation of insect collection.



## **EA 2102 (2:15/30) FARM MECHANIZATION**

### **Theory**

Introduction to farm machinery, operating systems, two and four wheeled tractors, primary and secondary land preparation equipments, crop establishment implements, weed control equipments, spraying and dusting equipments, harvesting and threshing equipments, Water pumps, processing equipment of crop and livestock.

### **Practicals**

Identification of engine components, identification of different components in hydraulic, transmission, cooling, lubrication and fuel systems, Operation and maintenance of four wheel and two wheel tractor, Identification of different equipment and components.

## **EA 2103 (4:00/120) FARM PRACTICE I**

Cultivation and management of cereals, Cultivation and management of legumes, cultivation and management of root and tuber crops, cultivation of cash crops, cultivation and management of leafy vegetables, cultivation and management of fruit crops, identification and management of pests, diseases and weeds, operation of four wheel and two wheel tractors, water pumps and sprayers, identification and maintenance of irrigation systems, identification of weeds and weed management.

EA

## **EA 2104 (2:15/30) FIELD CROP PRODUCTION**

### **Theory**

Introduction, rice, maize, millets, kurakkan, meneri and thanahal, potato, cultivation and cultural practices, ecological requirements, varieties, crop management, physiology of growth and development and yield determination of soy bean, bush bean, cowpea, mung bean and black gram. Ecological requirements, varieties, crop management and uses of ground nut, sunflower, gingelly, cotton, sunhemp, tobacco, ginger and turmeric.

### **Practicals**

Identification of different legumes, oil crops, spices, fiber crops, narcotic crops, field cultivation of selected field crops, studying germination pattern, growth and development, flowering and pod/fruit formation in relation to the crop, identification and correction of field problems in field crops, harvesting and processing, Identification of pests and diseases of field crops.

## **EA 2105 (2:15/30) PLANT PATHOLOGY**

### **Theory**

Introduction to plant pathology; history of plant pathology, significance of plant diseases, parasitism and disease development. How pathogens attack plants, how plants defend themselves against pathogens, control of plant diseases, specific plant diseases; plant diseases caused by Fungi, Bacteria, Viruses, Nematodes, diseases of crops.

### **Practicals**

Identification of plant pathogenic fungi using their microscopic features, culture media preparation, isolation and inoculation of plant pathogens, sub culturing and re-inoculation of isolated plant pathogens, proof of pathogenicity, identification of symptoms caused by fungi and bacteria on plants, identification of symptoms caused by viruses and nematodes on plants, identification of diseases of rice, identification of diseases of vegetables and fruit crops, identification of diseases of cut flowers and foliage, identification of diseases of plantation crops.

EA

## **EA 2201 (2:15/30) PLANTATION CROP PRODUCTION**

### **Theory**

Introduction to the plantation industry in Sri Lanka; identification of importance, potential and drawbacks of the plantation industry, tea production, rubber and coconut production, introduction to sugarcane and export agricultural crops, identification of problems and limitations in plantation industry.

### **Practicals**

Field activities, identification of different types of final products of tea, rubber, coconut and their value added products, identification of sugarcane, export agricultural crops and their products.

**Photo**

**Courses of Specialization Program Offered by the Commercial Horticulture**

<b>Year/ Semester</b>	<b>Course Notation, Name, Units and Hours for theory and practical</b>	<b>Compulsory / Elective</b>
Year III Semester I	EA 3104 Commercial Floriculture (4:30/60) EA 3105 Commercial Fruit Production (3:30/30) EA 3106 Commercial Vegetable Production (3:30/30) EA 3107 Controlled Environment Agriculture (3:30/30) EA 3108 Resource Management in Commercial Horticulture (3:30/30) EA 3110 Sustainable Farming Systems (3:30/30)	All are compulsory
Year III Semester II	EA 3203 Environmental Impact Management in Horticultural crops (2:15/30) EA 3205 Gardening and Landscaping (4:30/60) EA 3206 Plant Cell and Tissue Engineering (3:30/30) EA 3207 Postharvest Management of Horticultural Crops (4:30/60) AB 3203 Entrepreneurship and Small Business Management (3:30/30) On Farm Training (Non Credited Course) (0:00/40)	All are compulsory
Year IV Semester I	EA 4102 Plant Growth Regulators in Commercial Horticulture (2:30/00) EA 4103 Proposal Formulation and Seminar (2:30/00) EA 4104 Alternative Commercial Enterprises (3:15/60) EA 4106 Designing of Irrigation Systems in Commercial Agriculture (3:15/60) EA 4107 Hybrid Seed Production in the Horticulture Industry (3:15/60) EA 4110 Phyto-chemicals in Fruit and Vegetable (3:30/30)	Compulsory Compulsory Elective Elective Elective Elective
Year IV Semester II	EA 4201 Industrial Training ( 3:00/90 ) EA 4202 Research (5:00/150)	Compulsory Compulsory

**COURSE CAPSULES OF MODULE COMMERCIAL HORTICULTURE  
OFFERED BY THE DEPARTMENT OF EXPORT AGRICULTURE**

**EA 3104 (4:30/60)      COMMERCIAL FLORICULTURE**

**Theory**

Introduction to commercial floriculture, cultivation of roses, orchids, carnations, chrysanthemums, gerbera, filler flowers, foliage plants, postharvest management of cut flowers and foliage, indoor decorations and floral arrangements, policies and supportive services in relation to floriculture.

**Practicals**

Identification of cut flowers and foliage, identification of export quality of cut flowers and foliage, propagation of cut flowers and foliage plants, experiments to extend postharvest life of cut flowers and foliage, floral arrangements and indoor decorations.

**EA 3105 (3:30/30)      COMMERCIAL FRUIT PRODUCTION**

**Theory**

Introduction to fruit crops, present status of the national and global fruit industry, establishing commercial orchards, nursery management in fruit crops, orchard management, factors to be considered in exporting of fruits, policies and supportive services in relation to fruit crop production and marketing.

**Practicals**

Preparation of a field plan to establish an orchard, and maintenance of an orchard, identification of different fruits and varieties of fruits, practice propagation techniques of fruit crops and evaluate the effectiveness of the stage of rootstock for the success of grafting.

**EA 3106 (3:30/30)      COMMERCIAL VEGETABLE PRODUCTION**

**Theory**

Introduction to vegetable crops, present status of the national and global vegetable industry, environmental requirements in vegetable cultivation, vegetable based cropping systems, cultivation of different vegetables, marketing and postharvest handling of vegetables, vegetable processing, vegetable seed production, policies and supportive services in relation to vegetable crop production and marketing.

### **Practicals**

Identification of different vegetables and varieties of vegetables, establishment and maintenance of vegetable crops to achieve export market quality standards, demonstrate models of vegetable based cropping systems.

### **EA 3107 (3:30/30) CONTROLLED ENVIRONMENT AGRICULTURE**

#### **Theory**

Introduction to protected agriculture, greenhouse construction, controlling of climatic conditions, soil less culture systems, management of crops under protected agriculture systems, nutrient solution for soil less culture, postharvest handling of high value crops, cost benefit analysis and preparation of a budget for a greenhouse venture.

#### **Practicals**

Identification of construction materials for a protected house, nursery management for high value crops, preparation of nutrient solutions, cultivation and management of plants under greenhouse conditions, analyze the cost/benefit of an enterprise.

EA

### **EA 3108 (3:30/30) RESOURCE MANAGEMENT IN COMMERCIAL HORTICULTURE**

#### **Theory**

Land-use planning; land legislation and ownership, land use patterns, human resource management in the horticultural industry, management of finance; analysis and interpretation of farm records, investing and re-investing, loan schemes and insurance, financial policies and subsidiary schemes, economic aspects of mechanization, global mechanization; trends in horticulture, general decisions on mechanization.

#### **Practicals**

Evaluate the financial policies and subsidiary schemes in relation to horticulture, record keeping and analysis of farm records, identify global mechanization trends, identify human resource management methods in different horticultural ventures.

### **EA 3110 (3:30/30) SUSTAINABLE FARMING SYSTEMS**

#### **Theory**

Introduction, classification and description of common farming methods practiced in Sri Lanka, sustainable farming, integration of crop components, integration of crop and livestock components, integrated soil fertility

management, integration of plantations and/or annuals with other enterprises, livestock – livestock integration, livestock – fish integration, livestock – crop – fish integration, integration of livestock- fish with other enterprises, biogas production.

### **Practicals**

Design and implementation of a given farming model, compost preparation, production and application of bio fertilizer.

## **EA 3203 (2:15/30) ENVIRONMENTAL IMPACT MANAGEMENT IN HORTICULTURAL CROPS**

### **Theory**

Introduction to environmental impact; present status, positive impacts, negative impacts and pollution, soil pollution and management, air pollution, water pollution and management, solid waste management, environment quality standard polices to control point and non point sources of environment pollution.

### **Practicals**

Evaluation of water quality parameters, estimation of soil erosion in given condition, identification of different treatment methods, survey on existing environmental policies.

EA

## **EA 3205 (4:30/60) GARDENING AND LANDSCAPING**

### **Theory**

Introduction to landscaping and gardening, fundamentals of landscaping and gardening, materials in landscaping, maintenance of a nursery and plant propagation, establishment of a lawn, establishment of hedges/boards, establishment of trees in landscaping, different landscaping and gardening, landscape architecture, landscape planning and designing, water in gardens, other garden structures, cost estimation and budget preparation.

### **Practicals**

Maintenance of a garden, establishment of a lawn, hedges and trees, identification of plants, draw a landscape design for a given location, prepare the cost estimation for the proposed design.

## **EA 3206 (3:30/30) PLANT CELL AND TISSUE ENGINEERING**

### **Theory**

Clonal propagation system, production of new cultivars, medicinal compounds and secondary metabolite production, instant inbreds; haploid culture, cryopreservation for germplasm conservation, technology of transgenic plant

production, gene transfer systems for plants, application of transgenic plants, ethical, social, legal and environmental aspects of transgenic plants.

### **Practicals**

Clonal propagation and production of new cultivars using cell and tissue engineering techniques, protoplast production, protoplast fusion etc., molecular cloning, field trial – transgenic plants.

## **EA 3207 (4:30/60)      POSTHARVEST MANAGEMENT OF HORTICULTURAL CROPS**

### **Theory**

Introduction; importance of postharvest physiology and technology, present status of postharvest losses, national and international standards, channels of food losses, structure and composition of fruits, vegetables and floricultural items in relation to their post harvest life, Postharvest biochemistry and physiology of horticultural products, major causes of postharvest losses, management of postharvest losses in horticultural products, postharvest treatments.

### **Practicals**

Maturity indexes of horticultural crops for harvesting, sugar content brix value etc., post-harvest damages of horticultural commodities and possible causes of damages, post-harvest diseases and disorders of horticultural products, post harvest treatments for fruits, vegetables and ornamental plants, packaging materials, their problems and improvements, value adding and product improvements (market presentation), artificial fruit ripening, identification of post harvest losses in the marketing channel, field visit to Manning Market – Colombo, current research activities and recent advances in post harvest management – Field Visit to Industrial Training Institute (ITI) – Colombo.

## **EA 4102 (2:30/00)      PLANT GROWTH REGULATORS IN COMMERCIAL HORTICULTURE**

### **Theory**

Introduction, history and nature of endogenous growth regulators, biosynthesis, properties, preparation and mode of action of plant growth regulators, physiological effects of growth regulators, plant growth retardants, targets for manipulation of crop growth and application of plant growth regulators, commercial application of plant growth regulators.



**EA 4103 (2:30/00) PROPOSAL FORMULATION AND SEMINAR**

Introduction; general statement of the problem, justification of the study, a specific statement of the problem, literature review, methodology and research design, research schedule, preparation of a proposal on the special problem in agriculture to be done in the industrial training program, resources references.

**EA 4104 (3:15/60) ALTERNATIVE COMMERCIAL ENTERPRISES**

**Theory**

Apiculture; history and introduction to apiculture, honey bee colony behavior, communication in the bee colony, defense behavior of bees, colony management, harvesting, mushroom culture; seed production, site selection and construction of growing hut, management practices of mushroom, harvesting and packing, post-harvest management, Commercial Nursery Management; Introduction to commercial nursery, site selection, Different types of nurseries, establishment of a nursery, and selection of planting materials, management of nursery.

**Practicals**

Capture of a honey bee colony, division, uniting, supplementary feeding, transferring of apiary, identification of morphological characters of honey bees, preparation of culture medium for mushroom, inoculation of fungus, management of a mushroom unit, harvesting and postharvest handling of mushroom, Field visit for commercial Nursery.

EA

**EA 4106 (3:15/60) DESIGNING OF IRRIGATION SYSTEMS IN COMMERCIAL AGRICULTURE**

**Theory**

Introduction; importance of micro irrigation, components in a micro irrigation system and their uses, design suitable irrigation systems; principles and theories, site evaluation, crop water requirements, environmental factors affecting the irrigation design, maintenance of a micro irrigation system, calculating irrigation efficiency in micro irrigation systems, trouble shooting and management.

**Practicals**

Identification of components in micro irrigation systems, designing of an efficient micro irrigation system for a given land, preparation of cost estimation for the proposed system, implementation of the proposed irrigation system, maintenance of a given irrigation system, calculate the efficiency of the implemented irrigation system.

**EA 4107 (3:15/60)      HYBRID SEED PRODUCTION IN THE  
HORTICULTURE INDUSTRY**

**Theory**

Introduction; global situation of the hybrid seed production, objectives, elements of a good seed production scheme, principles of seed production, plant breeding methods. Management systems required to produce good quality seeds, marketing of hybrid seeds, postharvest handling of hybrid seeds; cleaning, processing, drying, packing, storage.

**Practicals**

Breeding practices in quality seed production, emasculation, pollination (self/cross), purity maintenance, measure the quality of given seed samples, experimentation, seed treatments, postharvest handling of hybrid seeds, field trips to seed producing companies and research stations.

**EA 4110 (3:30/30)      PHYTO-CHEMICALS IN FRUIT AND  
VEGETABLES**

**Theory**

Introduction, nutrition; plant foods in disease risk reduction, nutrition and cancer, biologically active compounds, enhancing phytochemicals through agricultural practices, disease prevention; cancer chemoprevention, principles and prospects, challenges and opportunities for using the “omics” to define functional foods, chemical modifications of phytochemicals, phytochemicals in cancer prevention, diet and colon cancer, diet and prostate disease, potential targets of phyto-chemicals in the prostate.

**Practicals**

Laboratory evaluation of chemical composition in different fruits and vegetables, survey on effect of phyto-chemicals on human health.

**NON CREDITED COURSE OFFERED BY THE DEPARTMENT OF  
EXPORT AGRICULTURE**

**ON FARM TRAINING (0:0/40)**

**Intended Learning Outcomes**

- Identify and assess real farm activities in different parts of the country
- Compare the theoretical aspects with the practices in actual farming
- Identify real farming problems and propose solutions
- Develop interpersonal skills

- Obtain exposure to real farming situations
- Experience the various cultural back grounds
- Disseminate our services to the farmers

#### **EA 4201 (3:00/90) INDUSTRIAL TRAINING**

##### **Intended Learning Outcomes**

- Display attributes, skills, behavior and attitude required at a work place
- Apply appropriate scientific principles and techniques in working environment
- Demonstrate the ability to establish effective relationships with others, and to define, share and delegate responsibilities
- Display skills of professional scholarship required for personal development and career management

#### **EA 4202 (5:00/150) RESEARCH**

##### **Intended Learning Outcomes**

- Exhibit the scientific writing ability
- Synthesize a problem statement in the discipline of horticulture
- Identify the objectives of the study
- Use relevant theoretical and empirical models in the study
- Perform a literature search
- Analyze the data using appropriate techniques
- Discuss and interpret the results and draw conclusions form the study carried out
- Suggest policy implication based on the results of the stud

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### Courses of Specialization Program Offered by the Plantation Management

Year/ Semester	Course Notation, Name, Units and Hours for theory and practical	Compulsory / Elective
Year III Semester I	EA 3101 Agronomy and Processing of Coconut (3:30/30) EA 3102 Agronomy and Processing of Rubber (3:30/30) EA 3103 Agronomy and Processing of Sugar cane & alternative sugar crops (3:30/30) EA 3109 Resource Management in Plantation Industry (3:30/30) EA 3110 Sustainable Farming Systems (3:30/30) EA 3111 Tea Production and Processing (3:30/30)	All are compulsory
Year III Semester II	EA 3201 Diversified Crop Production (4:30/60) EA 3204 Environmental Impact Assessment in Plantation Industry (2:15/30) EA 3206 Plant Cell and Tissue Engineering (3:30/30) EA 3208 Silviculture and Commercial Forestry (4:30/60) AB 3203 Entrepreneurship and Small Business Management (3:30/30) On Farm Training (Non Credited Course) (0:00/40)	All are compulsory
Year IV Semester I	EA 4101 Biomass Energy Production (2:15/30) EA 4103 Proposal Formulation and Seminar (2:30/00) EA 4105 Arboriculture (2:15/30) EA 4108 Land trace and Mapping (4:30/60) EA 4109 Management of Soil Water (2:15/30) EA 4111 Sustainable Soil Management (3:30/30) EA 4112 Traditional and Ecological Agriculture (2:15/30) EA 4113 Solid Waste Management (3:30/30)	Compulsory Compulsory Elective Elective Elective Elective Elective Elective
Year IV Semester II	EA 4201 Industrial Training (3:00/90) EA 4202 Research (5:00/150)	Compulsory Compulsory

**COURSE CAPSULES OF MODULE PLANTATION MANAGEMENT  
OFFERED BY THE DEPARTMENT OF EXPORT AGRICULTURE**

**EA 3101(3:30/30)      AGRONOMY AND PROCESSING OF COCONUT**

**Theory**

Importance of coconut, influence of climate and soil, coconut cultivation and management; varieties and forms of coconut, production of quality planting material and nursery practices, nutrition of the coconut palm and fertilizer use, cultural practices in coconut lands, establishment and management of creeping and bush covers, under-storey weed management, irrigation of coconut, coconut pest and diseases, pasture and livestock under coconut, coconut processing industry and product diversification.

**Practicals**

Study the floral biology of the coconut inflorescence, study cross sections of a matured nut and tender nut, layout of a conventional and poly bagged coconut nursery, design and layout of a husk pit, demonstration of fertilizer application and green manuring, identification of nutrition deficiency symptoms of coconut, identification of major coconut weeds, identification of major pests and diseases of coconut and their damage symptoms and control measures, pasture and fodder varieties, kernel products- copra, coconut oil, desiccated coconut, non kernel products- coir products (bristle fiber, mattress fiber), sap products (toddy, treacle, jaggery, vinegar).

**EA 3102 (3:30/30)      AGRONOMY AND PROCESSING OF RUBBER**

**Theory**

The rubber industry; significance of rubber cultivation, evolution of the rubber industry, present status of the natural rubber industry, constraints, potentials and drawbacks of the natural rubber sector, varieties of rubber and crop improvement, crop management, tapping/exploitation, rubber manufacturing. Policies and supportive services in relation to the rubber industry.

**Practicals**

Nursery management in rubber, soil fertility management in rubber, identification of pest and diseases of rubber, tapping/ exploitation of rubber, rubber manufacturing, research activities at RRI.

### **EA 3103 (3:30/30) AGRONOMY AND PROCESSING OF SUGARCANE AND ALTERNATIVE SUGAR CROPS**

#### **Theory**

Present status of the sugar industry, introduction to sugarcane, nursery management and propagation of sugarcane, crop growth and sugar recovery management, field planting and agronomic practices, pests, diseases and crop protection, crop growth and sugar recovery management, maturing and ripening, harvesting of sugarcane, ratoon management, intercropping, manufacturing of sugar, byproducts and uses, other sugar crops, policies and supportive services in sugar crops.

#### **Practicals**

Off campus practical, identification of byproducts, identification of the steps in sugar manufacturing.

### **EA 3109 (3:30/30) RESOURCE MANAGEMENT IN PLANTATION INDUSTRY**

#### **Theory**

Introduction to the planning organization and management of resources in plantation sector. Land-use planning; land legislation and ownership, land use patterns. Human resource management in the plantation industry. Management of finance; analysis and interpretation of farm records, investing and re-investing, loan schemes and insurance, financial policies and subsidiary schemes. Economic aspects of mechanization; global mechanization trends in plantations, general decisions on mechanization.

#### **Practicals**

Evaluate the financial policies and subsidiary schemes in relation to plantation sector, record keeping and analysis of farm records, identify global mechanization trends, identify human resource management methods in plantation sector.

### **EA 3110 (3:30/30) SUSTAINABLE FARMING SYSTEMS**

#### **Theory**

Introduction. Classification and description of common farming methods practiced in Sri Lanka. Sustainable farming. Integration of crop components. Integration of crop and livestock components. Integrated soil fertility management, integration of plantations and/or annuals with other enterprises. Livestock – livestock integration. Livestock – fish integration. Livestock – crop – fish integration. Integration of livestock/fish with other enterprises, biogas production.

### **Practicals**

Design and implementation of a given farming model, compost preparation, production and application of bio fertilizer.

## **EA 3111 (3:30/30)      TEA PRODUCTION AND PROCESSING**

### **Theory**

Present status and potential, constraints, land preparation; land preparation, soil conservation methods, soil rehabilitation, replanting, plucking, pruning, shade management in tea fields, pest and disease management, tea manufacturing and biochemistry, tea quality standard, policies and supportive services in tea sector.

### **Practicals**

Cost estimate for nursery, plucking, pruning, identification of different weed species and management, identification of different pest and diseases, manufacturing, identification of shade trees, soil and root testing, activities at the tea research institute.

## **EA 3201 (4:30/60)      DIVERSIFIED CROP PRODUCTION**

### **Theory**

Introduction to diversified crop production, beverage crops (coffee, cocoa), spice crops (cinnamon, cloves, cardamom, nutmeg, pepper and oil palm), oil crops (citronella, lemon grass, cloves, cinnamon, castor), miscellaneous crops (betel, papaya, vanilla, areca nut, fish tail palm), grading and quality standard of diversified crop products, policies and supportive services in relation to diversified crop production.

### **Practicals**

Identification of different types of diversified crops and their varieties, identification of plant morphological characters, identification of different types of diversified crops products, identification of pest and diseases of diversified crops, cultural practices of diversified crops, selected processing practices, identification of machinery used in processing.

## **EA 3204 (2:15/30)      ENVIRONMENTAL IMPACT ASSESSMENT IN PLANTATION INDUSTRY**

### **Theory**

Introduction to environment impact; positive impacts, negative impacts and pollution, soil pollution and management; sources of soil pollution, mitigation of soil pollution, air pollution; sources of air pollution and their management, water pollution; sources of water pollution, water quality parameters, effluent



treatment, solid waste management, environment quality standard, polices to control point and non point sources of environment pollution.

### **Practicals**

Evaluation of water quality parameters, estimation of soil erosion in a given condition, identification of different treatment methods, survey of existing environmental policies.

## **EA 3206 (3:30/30) PLANT CELL AND TISSUE ENGINEERING**

### **Theory**

Clonal propagation system. Production of new cultivars. Medicinal compounds and secondary metabolite production. Instant inbreds; haploid culture. Cryopreservation for germplasm conservation. Biotic stress (fungal, bacterial, viral pathogens). Abiotic stress (salt, draught, cold, nutrient deficiency). Technology of transgenic plant production. Gene transfer systems for plants. Application of transgenic plants, ethical. Social, legal and environmental aspects of transgenic plants.

### **Practicals**

Clonal propagation and production of new cultivars using cell and tissue engineering techniques, protoplast production, protoplast fusion etc., molecular cloning, field trial – transgenic plants.

EA

## **EA 3208 (4:30/60) SILVICULTURE AND COMMERCIAL FORESTRY**

### **Theory**

Introduction to silviculture and commercial forestry, forest classification, nursery management of common forest plants, land evaluation and species selection, field establishment of common forest tree species, tree management, silvicultural systems, natural forest of Sri Lanka.

### **Practicals**

Nursery management, identification of species, management practices, forest mensuration, high pruning and low pruning of branches, identification of common pest and disease.

## **EA 4101 (2:15/30) BIOMASS ENERGY PRODUCTION**

### **Theory**

An introduction to the current issues about energy sources, biofuel and biomass gasification, social and environmental benefits of biomass production, replacement of diesel, furnace oil and LP gas with biomass energy, gliricidia and dendro-thermal garden management. Different biogas generators; their function, cost, efficiency and maintenance. municipal waste for bioconversion, the use of wood, bagasse and straw for gasification technologies.

### **Practicals**

Identification of different biomass energy sources, estimation of energy value of biomass products, management practices in dendro-thermal garden.

## **EA 4103 (2:30/00) PROPOSAL FORMULATION AND SEMINAR**

Introduction; general statement of the problem, justification of the study, a specific statement of the problem, literature review, methodology and research design, research schedule, preparation of a proposal on the special problem in agriculture to be done in the industrial training program, resources references.

## **EA 4104 (3:15/60) ALTERNATIVE COMMERCIAL ENTERPRISES**

### **Theory**

Apiculture; history and introduction to apiculture, honey bee colony behavior, communication in the bee colony, defense behavior of bees, colony management, harvesting, mushroom culture; seed production, site selection and construction of growing hut, management practices of mushroom, harvesting and packing, post-harvest management, sericulture; cultivation of host plants, introduction of silk worms to host plant, culture of worms, harvesting and silk extraction, value addition and product development.

### **Practicals**

Capture of a honey bee colony, division, uniting, supplementary feeding, transferring of apiary, identification of morphological characters of honey bees, preparation of culture medium for mushroom, inoculation of fungus, management of a mushroom unit, harvesting and postharvest handling of mushroom.

## **EA 4105 (2:15/30) ARBORICULTURE**

### **Theory**

Introduction to arboriculture, concept of community forestry, role and benefits of trees in the landscape, selection of trees for urban forestry, land preparation for planting, planting materials, management practices, diagnosing tree problems and treatment, town planning and policy.

### **Practicals**

Identification of tree species, identification of tools used in arboriculture, tree management practices, identification of tree problems, wounds treatments.

## **EA 4108 (4:30/60) LAND TRACE AND MAPPING**

### **Theory**

Principals of land surveying, measurement of angle, use of theodolite in land surveying, rectangular coordinate, area computation. Theodolite traversing, contour survey, gradient setting.

### **Practicals**

Chain surveying, leveling, theodolite traversing, gradient setting.

## **EA 4109 (2:15/30) MANAGEMENT OF SOIL WATER**

### **Theory**

Basic soil properties; basic soil properties and their interrelations, water and plant relations as affected by soil structure, influence of soil water management on porosity, structure and soil biota, CEC, pH, and soil salinity, water and solute transport in soils, water stress in plants, rain water harvesting, hydrological cycle, ground water, soil and plant water relationships, water quality.

### **Practicals**

Water fluctuations in soils, plant water potential, moisture conservation, stress physiology, infiltration, water conductivity.

## **EA 4111 (3:30/30) SUSTAINABLE SOIL MANAGEMENT**

### **Theory**

Concept of soil quality; definitions, quantification, application, physical, chemical and biological aspect of soil quality, soil sustainability; indicators, management, application, techniques in sustainable soil management, indicators of soil quality and quantification, soil degradation and rehabilitation

### **Practicals**

Testing the stability of soil, comparison of the sustainability of soils in different farming systems, on filed activities related to sustainable soil management.

## **E 4112 (2:15/30) TRADITIONAL AND ECOLOGICAL AGRICULTURE**

### **Theory**

Introduction to ecological agriculture, organic agriculture, biodynamic in agriculture, agricultural ecosystems, certification of organic products, ecological indicators of agricultural sustainability, comparisons of the environmental performance of alternative, certified, organic, and conventional agricultural production systems.

### **Practicals**

Design low input farming models, evaluation of ecological indicators, preparation of biodynamic products.

EA

## **EA 4113 (3:30/30) SOLID WASTE MANAGEMENT**

### **Theory**

Introduction to Solid Waste Management; management of solid waste at different levels – e.g. household, industry, farms, hospitals, municipalities; transportation, dump yards, reusing, recycling, waste separation techniques, municipal solid waste composting, sewage sludge composting, minimizing waste generation and zero waste model.

### **Practicals**

Field visit to study waste handling, transportation, reusing, recycling; activities in the Fieldon solid waste composting and enrichment techniques; contaminant control

## **NON CREDITED COURSE OFFERD BY THE DEPARTMENT OF EXPORT AGRICULTURE**

### **ON FARM TRAINING (0:0/40)**

#### **Intended Learning Outcomes**

- Identify and asses real farm activities in different parts of the country
- Compare the theoretical aspects with the practices in actual farming
- Identify real farming problems and propose solutions
- Develop inter personal skills
- Obtain exposure to real farming situations
- Experience the various cultural back grounds
- Disseminate our services to the farmers

EA

### **EA 4201 (3:00/90) INDUSTRIAL TRAINING**

#### **Intended Learning Outcomes**

- Display attributes, skills, behavior and attitude required at a work place
- Apply appropriate scientific principles and techniques in working environment
- Demonstrate the ability to establish effective relationships with others, and to define, share and delegate responsibilities
- Display skills of professional scholarship required for personal development and career management.

### **EA 4202 (5:00/150) RESEARCH**

#### **Intended Learning Outcomes**

- Exhibit the scientific writing ability
- Synthesize a problem statement in the discipline of plantation agriculture
- Identify the objectives of the study
- Use relevant theoretical and empirical models in the study
- Perform a literature search

- Analyze the data using appropriate techniques
- Discuss and interpret the results and draw conclusions from the study carried out

EA

LP

Photo

**Core Program Courses Offered by the Department of Livestock Production**

Year I		Year II	
Semester I	Semester II	Semester I	Semester II
Anatomy and Physiology of Farm Animals LP 1101 (3:15/60)	Principles of Food Science and Technology LP 1201 (2:15/30)	Management of Non Ruminants LP 2101 (2:15/30)	Animal Health and Hygiene LP 2201 (2:15/30)
	Genetics LP 1202 (2:15/30)	Applied Animal Nutrition and Agrostology LP 2102 (3:15/60)	Management of Ruminants LP 2202 (2:15/30)
	Biochemistry LP 1203 (2:15/30)		Farm Practice LP 2203 (3:0/90)



## **COURSE CAPSULES OF THE DEPARTMENT OF LIVESTOCK PRODUCTION**

### **LP 1101 3:15/60      ANATOMY AND PHYSIOLOGY OF FARM ANIMALS**

#### **Theory**

Cell biology; anatomy and physiology of animal cell, skeletal system; general arrangement of skeletal system; muscular system; structure and function of muscle tissue, nervous system structure of the nervous system, sensory organs, cardio vascular system; composition of blood, anatomy and physiology of cardio vascular system, introduction to hormones; digestive system; anatomy and physiology of the digestive system, species variations in digestive system, anatomy and physiology of ruminant digestion, reproductive system; female reproductive system, puberty and estrus cycle, pregnancy and parturition, male reproductive system, anatomy and physiology of the male reproductive system, introduction to artificial insemination, anatomy of the mammary gland and physiology of lactation.

#### **Practicals**

Distinguish major organs and body parts of farm animals using identical features.

Demonstrate the manipulation of functions of major systems (digestive, reproductive, mammary, cardio vascular and muscular system)

### **LP 1201 (2:15/30)      PRINCIPLES OF FOOD SCIENCE & TECHNOLOGY**

#### **Theory**

Introduction; general overview of food industry, properties and quality of food constituents, food processing and preservation; technology of food processing, unit operation in the food industry, basic understanding of the composition properties and processing of dairy , products, red meat, poultry, fish and pulses, storage and losses, heat and cold preservation, dehydration and concentration, irradiation, microwave heating, chemical preservation, biological preservation, food microbiology; fermentation of milk, meat, fish, cereals legumes, microbiological spoilage, food borne infections and intoxications, food sanitation and quality control; principals of sanitation, use of cleaning compounds, food standard and quality control.

#### **Practicals**

Identification and quantification of different food constituents (carbohydrate, lipid and protein), functional properties of starch, processing and quality evaluation of starch-based food products, processing and preservation of meat products.

LP

## **LP 1202 (2:15/30) GENETICS**

### **Theory**

Introduction; introduction to genetics, cell biology & cell divisions, mendelian genetics; principle of mendelian genetics, introduction to mendelian genetics, single locus genetics & monohybrids, double loci genetics & dihybrides, The test cross, independent assortment & genetic variation, probability, evaluating genetic data, modification of mendelian genetic, incomplete dominance, multiple alleles, lethal genotypes, gene interactions & epistasis, sex linked inheritance, population genetics; calculating allele frequencies, Hardy-Weinberg law for gene frequency stability in large populations, deviations from HW equilibrium, relationship and inbreeding, estimating of breeding values, selection, quantitative genetics; Type of quantitative traits, relevance of quantitative genetics to breeding, quantitative inheritance, heritability, quantitative trait loci, introduction to evolutionary genetics.

### **Practicals**

Calculation in Mendelian genetics population and quantitative genetics

## **LP 1203 (2:15/30) BIOCHEMISTRY**

### **Theory**

Introduction to carbohydrates, proteins, lipids, amino acids, vitamins and minerals; classification and nomenclature, structure, physical and chemical properties, functions and reactions, metabolism of carbohydrates; metabolism of monosaccharide and disaccharides, glycogen metabolism, metabolism of lipids; digestion and absorption of dietary lipids, fatty acid and triacylglycerol metabolism, cholesterol metabolism, metabolism of nucleic acids and proteins; structure and biosynthesis of DNA and RNA, synthesis and degradation of amino acids, Protein synthesis, introduction to enzymes; basic concepts and kinetics.

### **Practicals**

Introduction to laboratory classes, identification of simple and complex carbohydrates, proteins and lipids, hydrolysis of proteins and starch, bile and emulsification of lipids, measurement of enzyme activity

## **LP 2101 (2:15/30) MANAGEMENT OF NON RUMINANTS**

### **Theory**

Introduction; importance of pig, poultry and rabbit farming, potentials and constrains of pig, poultry and rabbit farming, classification of breeds of pigs, poultry and rabbits, management of a breeding stock, management of kids and piglets, brooding; different brooding systems of poultry, management at brooding period, management of growers, finishers and layers; management of

growers and finishers of poultry, management of layers, housing for pigs, poultry and rabbit; management systems of broilers and layers, housing types and space requirements of pigs, broilers, layers and rabbits, diseases of pigs, poultry and rabbits; common diseases and causes, preventive methods, slaughtering of pigs, broilers and rabbits; slaughtering procedure, production of broiler, pork and rabbit meat, keeping records in pig, poultry and rabbit farming; importance and use, different types of records, miscellaneous poultry production.

### **Practicals**

Identification of breeds of swine poultry and rabbits, maintain a group of pigs, broilers, layers and rabbits in the faculty farm, visit a large scale piggery, poultry farm and a rabbitary, maintain records in a piggery, poultry shed and rabbitary.

## **LP 2102 (3:15/60) APPLIED ANIMAL NUTRITION AND AGROSTOLOGY**

### **Theory**

Introduction to agrostology; definition of forage and its importance, limitations and improvements, agronomic description of pasture and fodder species; natural and improved pasture and fodder, types of pasture and fodder - pasture grasses, pasture legumes, fodder grasses, fodder legumes non legume tree fodder, characteristic of pasture and fodder- morphological features, climatic and environmental adaptation and nutritive composition fodder legumes and non legume tree fodder, pasture production in different agro-climatic zones of Sri Lanka; agro-climatic zones of Sri Lanka, present status of pasture production, limitations and the potentials in pasture production, strategies for improvements, establishment and management of pasture and fodder; selection of suitable species, selection of the type of cultivation - mono culture mixed culture; pasture under coconut, method of propagation and related factors, establishment of grasses, establishment of legumes, field maintenance: refilling, fertilizing, irrigation and weeding, defoliation of pasture and fodder; factors considering in defoliation, cutting interval/ frequency, cutting intensity methods of pasture and fodder conservation, hay making, silage making, evaluation of the quality of hay and silage, nutrient contents in pasture and fodder; factors affecting the nutrient contents, evaluation of the nutrient contents; estimation of yield/ha/year, fresh matter basis and dry matter basis, estimation of dry matter percentage, on wet basis and dry basis, management of grazing; define carrying capacity and stocking density, different grazing methods, introduction to principles of animal nutrition, definition and classification of nutrition, role and metabolic fate of nutrients, practical feeding of ruminants and non-ruminants; feeding standards and nutrient requirements of different animal species for maintenance growth reproduction and production, practical feeding of non-ruminants (pigs, poultry), practical feeding of ruminants (cattle and buffaloes and goats).

### **Practicals**

Establishment and management of pasture and fodder fields, preparation of a pasture and fodder album, harvesting and estimation of yield and skills, conservation of pasture and fodder, identification of feed ingredients, ration formulation for ruminants and non ruminants, evaluation of feed stuff for quality, estimation of gross energy contents of different feed stuffs.

## **LP 2201 (2:15/30) ANIMAL HEALTH AND HYGIENE**

### **Theory**

Introduction; common causative agents of diseases, diseases of cattle, goats and sheep; mastitis, FMD, HS, BQ, Rinderpest, Brucellosis, Babesiosis, Milk fever, Grass tetani, Bloat, , BSE and other important conditions, diseases of goats and sheep, CSN, Tetanus, Pneumonia, Foot rot and pregnancy related conditions, diseases of poultry; Marek's, NCD, IBD, ILT, IB, LL complex and other important viral conditions, Salmonellosis, Colibacillosis, Aspergillosis and other important fungal infections, Coccidiosis, and Nematode infections, metabolic disorders, diseases of swine; Swine fever, Piglet anemia, , MMA and other important conditions, diseases of rabbits; parasitic conditions, Coccidiosis and Pneumonia, Zoonotic diseases.

### **Practicals**

Practice basic treatment procedures for minor health conditions, preparation of blood smears and examination under light microscope to identify, major hematological changes, advice farmers on prevention and control of important diseases in livestock, species, post mortem examinations of carcasses and the diagnosis of different diseases of farm animals.

## **LP 2202 (2:15/30) MANAGEMENT OF RUMINANTS**

### **Theory**

Introduction to ruminant species; introduction to cattle (neat cattle), buffaloes, sheep & goat, identification of breed characteristics, production and distribution in Sri Lanka, rearing systems; intensive semi intensive and extensive farming systems, comparison of different systems, management practices; housing and other equipment, identification methods, castrations of male animals, dehorning, management of new born animal, management of young stock, reproduction, feeding, health management, record keeping.

### **Practicals**

Demonstrate different restraining techniques and important knots in ruminant management, demonstrate the identification methods and breeds identification, visit different farms to identify different management systems of cattle, buffalo sheep and goat, demonstrate different hand milking methods and machine milking, identification of different instruments using in ruminant management.

**LP 2203 (3:00/90) FARM PRACTICE II**

Ruminant management; practice identification techniques of farm animals, restraining and handling techniques, housing, feeding, breeding and health management, grooming and hoof care, milking, record keeping, non ruminant management; management of a broiler flock from day old to slaughter, biological control of incubation, management of a breeding stock, growers and finishers of swine, rabbits, layers and miscellaneous poultry.

**Photo**

### Courses of Specialization Program Offered by the Livestock Production

Year/ Semester	Course Notation, Name, Units and Hours for theory and practical	Compulsory / Elective
Year III Semester I	LP 3101 Aquaculture (3:15/60) LP 3102 Food & Nutrition (2:15/30) LP 3103 Poultry production (3:15/60) LP 3104 Quality Management of Food Processing and Handling (3:30/30) LP 3105 Ruminant Production (4:30/60) LP 3106 Swine Production (2:15/30)	All are compulsory
Year III Semester II	LP 3201 Advanced Animal Nutrition (2:15/30) LP 3202 Animal Breeding (2:15/30) LP 3203 Dairy Technology (2:15/30) LP 3204 Food microbiology (2:15/30) LP 3205 Health Management of Livestock Species and Fish (2:15/30) LP 3206 Marine & Inland Fisheries (2:15/30) LP 3207 Meat Science & Technology (4:30/60) LP 3208 Micro Livestock Production (2:15/30)	All are compulsory
Year IV Semester I	LP 4101 Animal Reproduction & assisted reproductive Technologies (3:30/30) LP 4102 Proposal Formulation and Seminar (2:30/00) LP 4103 Animal welfare and Ethics (2:15/30) LP 4104 Laboratory Techniques in Livestock Production (3:15/60) LP 4105 Ornamental Fish Culture (3:30/30) LP 4106 Processing of Animal Byproducts (2:15/30) LP 4107 Wild Life Conservation (2:15/30) LP 4108 Quality Management of Food Processing and Handling (3:30/30)	Compulsory Compulsory Elective Elective Elective Elective Elective Elective
Year IV Semester II	LP 4201 Industrial Training (3:00/90) LP 4202 Research (5:00/150)	Compulsory Compulsory

## **LP 3101 (3:15/60)      AQUACULTURE**

### **Theory**

Importance and status of aquaculture in Sri Lanka; importance of aquaculture for Sri Lanka, history and present status of aquaculture in Sri Lanka, future strategies of aquaculture, biology of fish; fin fish, classification and life cycle, characters of fish and adaptations to the environment, diversity of fish, important fish species in Sri Lanka, Shell fish, classification and life cycle of *Penaeus monodon*, characters of shrimps, adaptation to the environment, physical and chemical characters of water; temperature turbidity( total suspended solids, planktons), pH, dissolved oxygen, biochemical oxygen demand (BOD), salinity and toxicants, types of aquaculture; fish culture, shrimp culture, mussel and oyster culture, sea weed culture, techniques in aquaculture; pond culture, raft culture, pen culture, cage culture, running water culture, stocking in open waters (seasonal tank and sea ranching), pond construction for fish/shrimp culture; site selection, pond preparation, water management, fertilization, principles & techniques of fish culture; breeding, feeding management, principles & techniques of shrimp (*Penaeus monodon*) culture; breeding, feeding, management, ornamental fish industry; potentials, fish industry, future prospects, rearing of common ornamental fish species, common fish diseases & control measures.

### **Practicals**

Identification of cultured food fish and ornamental fish species, identification of stages of life cycle in fish and shrimp, acquire fish and shrimp breeding techniques, maintenance of an aqua farm or small aquarium, management of an aquatic environment in for high production and revenue.

## **LP 3102 (2:15/30)      FOOD AND NUTRITION**

### **Theory**

Introduction; general overview of current status in food and nutrition, food security and insecurity in the world and Sri Lanka, food constituents and their role in nutrition, evaluation of nutritional status of a country; dietary reference values and food pyramid, food balance sheet, nutrition intervention programmes, evaluation of nutritional status of individuals; calculation of daily energy intake of an individual, calculation of daily energy expenditure, nutritional parameters in human and their use, nutrition related non communicable disorders; protein energy malnutrition, obesity, diabetes, cardiovascular diseases, Food and nutrition policy of Sri Lanka; recommended food and nutrition policies, strategies and programmes, implementation, coordination, ministering, and evaluation of food & nutrition policy, Food consumption surveys; objectives of food consumption surveys, selection criteria for food consumption surveys, methods of food consumption surveys.

### **Practicals**

Comparison of the food security and insecurity status in Sri Lanka with other developing and developed countries, calculation of own daily energy expenditure and interpret results, calculation of own daily energy intake and interpret results, evaluate the nutritional status using different parameters and design intervention programmes for identified problems, conduct a food consumption survey in a given population, analyze data and interpret the results.

## **LP 3103 (3:15/60) POULTRY PRODUCTION**

### **Theory**

Introduction to poultry industry in Sri Lanka; importance of poultry industry for sustainable agriculture, historical background and present status in Sri Lanka, constraints and future prospects of poultry industry in Sri Lanka, planning a poultry farm; market identification, planning for continuous poultry production, management of parent stocks; breeds and selection of parent stocks, breeding and production of commercial chicken, management aspects and prophylactic programs, incubation and hatchery management; introduction to hatchery industry, selection of hatching eggs, care and storage of hatching eggs before incubation, methods of incubation, factors affecting production of quality chicks, analysis of hatchability problems, hatchery hygiene and prevention of hatchery borne diseases, egg quality and preservation; structure and nutrient composition, egg quality characteristics and measuring techniques, grading and preservation of eggs, processing of eggs; liquid eggs, dried eggs and fermented egg products, functional additives, packaging methods, processing of eggs; liquid eggs, dried eggs and fermented egg products, functional additives, packaging methods, processing and preservation of poultry; processing techniques, factors affecting poultry meat quality and yield, inspection and grading, preservation of raw meat, economics of poultry keeping; factors affecting economic returns, layer production cost and returns, broiler production cost and returns, introduction to post slaughter industries; packaging, sausage making, chicken products, miscellaneous poultry production (ducks, geese, turkeys and quails); breeds for production and breeding purposes, management practices, prophylactic programs.

### **Practicals**

Selection of eggs for incubation, candling of hatching eggs, analysis of hatchability problems, identification of poultry breeds, measuring egg quality characteristics, processing of poultry meat, management of production stocks (layers and broilers), management of miscellaneous poultry species.



**LP 3104 (3:30/30)**

**QUALITY MANAGEMENT OF FOOD  
PROCESSING AND HANDLING**

**Theory**

Basic quality concepts; codex Alimentarius basic document in food hygiene, food safety management procedures; good manufacturing practices and food act (1980), cleaning & disinfection, personal hygiene, integrated pest management, training & supervisory management, design and construction of food premises and equipment, good agricultural practices (GAP); EUREPGAP, ISO 9000 quality management system; total quality management, hazard analysis and critical control point (HACCP); HACCP inspection procedure, ISO 22000; other quality management system; ISO 14000 – environmental management system, SA 8000 – social responsible system OHSAS 8000- occupational health and safety management system, code of practices of Sri Lanka standards institute (SLSI) for food safety assurance system; SLS 143 – code of practices for general food hygiene, SLS 872 – code of practices for dairy industries, SLS 892 – code of practices for processing of poultry SLS 1065 – code of practices for processed meat products.

**Practicals**

Determine the effectiveness of sanitation procedure and sanitizers of different food industries, determination of water quality, quality of raw materials, preparation of HACCP plan for a given food industry, quality inspection procedure of a fish processing factor.

LP

## **LP 3105 (4:30/60) RUMINANT PRODUCTION**

### **Theory**

Dairy cattle production; introduction to dairy industry, potentials, constraints and remedies for dairy development, judging of dairy cows, milk biosynthesis, microscopy structure of the udder, synthesis of major milk constituents, milk ejection and hormonal control, factors affecting milk quality; management factors, animal factors, environmental factors, milking methods; hand milking, machine milking, herd administration; record keeping, record analysis, budgeting and costing, management of reproduction in dairy cows; oestrus detection and artificial insemination, measures of reproductive parameters manipulation of reproduction, reproductive disorders, beef cattle production; introduction to beef industry, beef cattle breeding and improvement, breed and type selection, performance testing, systems of beef production, forage lot beef, feed lot beef, sheep and goat production; introduction to sheep and goat industry, potentials, constraints and remedies, establishment of a sheep/ goat farm, selection of a foundation stock, establishment of the herd, flock management aspects, mutton and lamb production, wool production, wool production, wool grading systems and quality parameters wool handling and processing.

### **Practicals**

Farm visits, judging of dairy cows, hand and machine milking, dairy farm record analysis.

## **LP 3106 (2:15/30) SWINE PRODUCTION**

### **Theory**

Introduction to swine industry in Sri Lanka; history and the present status of swine industry, role and potentials of pig production, constraints and remedies of swine industry, planning a pig operation, aims of swine production, establishment of a piggery, maintain a piggery for a continuous production, breeding of pig; selection of a breeding stock, selection of boar, selection of sow, management of breeding stock, management of animals in different stages; pregnant sow, boar, piglets and fatteners, housing systems for pigs, health and hygiene of swine; common diseases of pig, preventive measures, slaughtering of pigs; procedure of slaughtering, carcass quality and important cuts, waste disposal in a piggery; record keeping in swine production; introduction to pork production and processing.

### **Practicals**

Management of a breeding stock, fatteners and boars, slaughtering techniques in swine processing of pork

## **LP 3201 (2:15/30)      ADVANCED ANIMAL NUTRITION**

### **Theory**

Introduction to advanced animal nutrition; concepts of nutrition, animal nutrition; its role in modern agriculture and society, feed resources in Sri Lanka; classification of feedstuff, feed resources available for ruminants and non ruminants, nutritive value of feed resources available in Sri Lanka, utilization of agro- industrial by-products in the feed industry; economic significance of agro-industrial by products as alternate feed resources, crop residue feeds and by-product feeds, non-conventional feedstuff, feed additives and unidentified growth factors; feed additives-definition, categories of feed additives and their role on animal performance, use of pharmaceuticals in feed and feed industry: local and global, unidentified growth factors and anti-nutritive factors in feed stuff, evaluation of feed stuffs; physical evaluation of feed stuffs, chemical evaluation of feed stuffs, biological evaluation of feed stuffs, ration formulation; selection of feed ingredients, methods available for ration formulation, ration formulation and feed milling for ruminants and non-ruminants, quality assurance of animal feed, upgrading of animal feed stuff; physical upgrading techniques, chemical upgrading techniques, biological upgrading techniques, factors affecting feed quality and feed intake; definition of feed quality, factors affecting the quality of herbage/feed stuff, factors affecting on feed intake.

### **Practicals**

Evaluation of feed stuff by physical and chemical methods, evaluation of gross energy content of different feed stuff, identification of feed ingredients, formulation of feed for ruminants and non ruminants, feed processing techniques in feed milling.

## **LP 3202 (2: 15/30)      ANIMAL BREEDING**

### **Theory**

Domestic animals and zootechnical systematic; domestication, the wild ancestors of domestic animals, changes caused by domestication, zootechnical systematic, breeds, varieties, lines, supra breed etc, conformation – preliminary information; standard nomenclature of external conformation in domestic animals, conformation standards, the constitution, methods of estimating and describing conformation, zoometrical measurements, measuring procedure and animal identification, growth and development of farm animals; prenatal growth and development postnatal growth, estimation of the variation of growth and development, cytogenetics and its importance in practical animal breeding; disorders in sex determination and irregular mammalian sex differentiation, sex linked characters of domestic animals, hereditary diseases and defects, relationship; redigrees, the measure of relationship, inbreeding, coefficient of inbreeding, genetic principles in animal breeding; heredity and environment variation, source of variation in the population, heritability, repeatability and

methods of estimation of heritability and repeatability, phenotypic, genetic and environmental correlations, principles of production recordings, practical animal breeding and breeding value; estimation of breeding values, estimation of breeding value on own performance, estimation of breeding value on performance of ancestors, collateral relatives and progeny test, selection; herd remount, selection differential genetic gain, selection intensity, selection limits, selection criteria, individual selection, mass selection, selection methods (Tandem selection, independent culling, index selection etc). livestock improvement; breeding methods, in breeding, out breeding and crossbreeding, heterosis & hybrid vigour, upgrading, rotational crossbreeding, alternate crossing, cross breeding for production, livestock breeding in Sri Lanka; role of animal breeding in livestock production, opportunities for breeding and improvement of farm animals in Sri Lanka, constraints in improving the productivity of livestock under traditional breeding systems, new technologies in animal breeding; production of transgenic livestock, modification of production traits.

### **Practicals**

Preparation a breeding plan for livestock, estimation of coefficient of breeding parameters, prepare a plan for a formation of new breed.

## **LP 3203 (2:15/30)      DAIRY TECHNOLOGY**

### **Theory**

Introduction to the dairy technology; potential of milk, present and future trends of milk consumption, milk composition; milk constituents, importance of compositions, factors affect on composition, milk physics and chemistry; physical properties of milk, color, flavor, odor texture, density, conductivity, turbidity/ viscosity, freezing point, boiling point, chemical properties of milk, acidity, rancidity, dairy processing; clarification, separation & standardization, pasteurization, UHT treatment, homogenization, membrane processing, evaporation & dehydration, utilities – steam & refrigeration, dairy products; fluid milk products, concentrated & dried milk products, cultures dairy products, cheese, yoghurt, beverages, curd, other products; butter, ice cream, whipped cream, ghee, dairy microbiology; microorganism in milk, what is microorganism, classification of bacteria based on, morphology, oxygen consumption, activity on temperature, usage, bacterial quality of milk, bacterial growth, detection & enumeration, starter cultures, bacteriophage.

### **Practicals**

Milk quality testing, determination of composition, processing of milk into products, quality assessment.

## **LP 3204 (2:15/30) FOOD MICROBIOLOGY**

### **Theory**

Introduction; anatomy of the bacterial cells, bacterial physiology, sampling concepts, microbial contamination of raw materials; contamination sources, contamination of raw materials, microbial growth in food; intrinsic factors, extrinsic factors implicit factors, microbial aspect of preservation; reduced pH, reduced water activity, modification of environment, use of temperature, use of radiation, chemical preservation, use of gasses, natural antimicrobial systems, bacteriocins, spoilage of food products; meat and meat products, poultry products, fish, Shell fish & mollusks, milk and milk products, eggs, vegetables, fruits & nut, drinks, cereals, flour and bread, canned foods, food poisoning; food born infections (salmonella, compylobacter, listeria monocytogenes, aeromonas, viruses), food intoxication (Staphylococcus aureus, Clostridium botulinum, Clostridium perfringens, mycotoxins, natural toxicants), culture medias and culturing of micro-organisms; essential requirements of a culture media and different media types, selection of a proper media for culturing a micro-organism, Culturing techniques, plate count techniques.

### **Practicals**

General procedures in microbiology laboratories, aseptic handling of micro organisms, preparation of different culture media, streak colony isolation technique, gram staining, counting and calculations of colonies in a culture plate, interpretation of results of a colony counting.

LP

## **LP 3205 (2:15/30) HEALTH MANAGEMENT OF LIVESTOCK SPECIES AND FISH**

### **Theory**

Principles of health management; economical importance of herd health and hygiene of livestock animals, general introduction to common pathogens, principles of sanitation and disease control, roles of disease control measures in the development of the livestock sector, infectious diseases, nutritional and metabolic disorders; common viral, bacterial infections, parasitic infestations, nutritional and metabolic disorders, animal hygiene and routine management practices; management skills in maintaining animal hygiene, effect of housing and feeding on health, hatchery sanitation and disease control operations, effect of environment on diseases, vaccination procedures, schedules and techniques, diagnostic techniques; hematological techniques in disease diagnosis, fecal analysis, serological tests in disease diagnosis, diseases of fish; etiology and pathogenesis of fish diseases, disease diagnosis, control and prevention, restraining of fish.

### **Practicals**

Post mortem examination of livestock species, hematological diagnostic tests, fecal analysis, serological tests.

## **LP 3206 (2:15/30) MARINE & INLAND FISHERIES**

### **Theory**

Introduction; history, potentials and limitations, general aspects of inland and marine fisheries, inland fisheries; pond fishery, reservoir fishery, riverine fishery, coastal, offshore and deep sea fishery; large pelagic fisheries, small pelagic fisheries, brackish water fisheries, demersal/reef fisheries & other types of marine fisheries, fishing gear and methods of fishing; classification, active fishing gears, passive fishing gears, regulations and management of fisheries; ordinances, acts and regulations relevant to fisheries management in Sri Lanka, fisheries and aquatic resources act, no 2 of 1996 and amendments, ocean fisheries management methods, biological fisheries management, economical fisheries management, conservation technology; fish stock assessment methods, catch control laws, preservation and processing of fish; quality aspects associated with marine fish, post mortem changes in fresh fish, quality changes and assessment, assurance of fresh fish quality ornamental fishery; indigenous fish, exotic fish, trade and industry.

### **Practicals**

Visit to fish market to identify different fish species, their availability and demand and to get an idea about post harvest losses while handling, visit to a fish processing plant to get an idea on fish processing techniques and quality assurance practices.

## **LP 3207 (4:30/60) MEAT SCIENCE AND TECHNOLOGY**

### **Theory**

Local and global meat industry; introduction to meat industry, importance and constraints of the meat industry in Sri Lanka, meat marketing system in Sri Lanka, structure and quality of meat and fish; food animals, gross structure of muscle, microscopic structure of muscle, composition of meat and fish, factors affecting composition of meat and fish, characters of meat and fat in different animal species, consumption of meat and fish, factors affecting meat and fish consumption, nutritive value of meat and fish, conversion of muscle to meat; post mortem glycolysis, rigor mortis, denaturation of muscle, ageing of meat, eating qualities of meat, factors affecting eating qualities, production of good quality meat and fish; pre slaughter handling of animals, ante-mortem inspection, slaughtering techniques, post mortem inspection, chemical residues in meat and fish, preservation of meat and fish; important factors in meat and fish preservation, different methods of preserving meat and fish, processing of meat and fish; sausage and meat ball production, ham/bacon production, fish products, abattoir and abattoir designing; selection of a site, components of an abattoir, legislations related to abattoir designing, designing a processing plant; designing a meat processing plant, designing a fish processing plant.

### **Practicals**

Production of sausages, meat balls, ham and bacon, visit a meat processing plant, visit a slaughter house, surveys on meat consumption of people, evaluate nutritive value and cholesterol contents of meat.

## **LP 3208 (2:15/30)      MICRO LIVESTOCK PRODUCTION**

### **Theory**

Introduction; current trends and future prospects in micro livestock production, identification of breeds and breed characteristics of rabbit, quails, guinea pigs, potential and constraints for micro livestock production in Sri Lanka and possible remedial measures, economical importance of micro livestock production, management of micro livestock species; housing systems for micro livestock, feeding practices at different age groups and physiological status, record keeping, health management of micro livestock species; common diseases of rabbits, quails and guinea pigs, prevention and control measures, breeding programs; selection of micro livestock for the breeding purpose, sexing and breeding techniques, management of a parent stock, product processing of rabbits and quails; slaughtering of rabbits and quails, processing of rabbit and quail meat.

### **Practicals**

Breed and sex identification, housing and feeding management, clinical diagnosis of common diseases, slaughtering techniques.

## **LP 4101 (3:30/30)      ANIMAL REPRODUCTION AND ASSISTED REPRODUCTIVE TECHNOLOGIES**

### **Theory**

Anatomy of the reproductive systems of farm animals; aAnatomy of the reproductive systems of female, anatomy of the re productive systems of male, reproductive physiology of female animals, endocrinology of gonads and puberty, oestrus cycles of different farm animals, ovulation, fertilization and implantation, pregnancy diagnosis, parturition, emergency handling and post partum management, problems associated with female fertility, reproductive physiology of male animals; physiology and endocrinology of spermatogenesis, collection of semen, dilution, preservation and transportation, influence of environmental conditions on sperms at storage, problems associated with male fertility, reproductive technologies; artificial insemination, organization of insemination in a farm, technical procedure of artificial insemination, oestrus synchronization, super ovulation, embryo transfer techniques, in vitro growth,

maturation and fertilization of oocyte, cryopreservation and vitrification of oocytes, sperm and embryo sexing, intra cytoplasmic sperm injection (ICSI).

### **Practicals**

Semen collection, preservation and quality evaluation, oestrus synchronization in farm animals, artificial insemination of farm animals, pregnancy diagnosis of farm animals, management of reproductive emergencies, understanding of the basic techniques of animal cell culture for reproductive, manipulations.

### **LP 4102 (2:30/00) PROPOSAL FORMULATION AND SEMINAR**

#### **Theory**

Preparation of a proposal on the special problem in agriculture to be done in the industrial training programme, presenting the proposal in the seminar, Introduction and background, Research problem, research questions, research objectives, methodology, data analysis, interpretation and conclusion.

### **LP 4103 (2: 15/30) ANIMAL ETHICS**

#### **Theory**

Introduction; definition-as it applies to animal ethics, philosophy of animal ethics, history of animal ethics, the basic legal system influencing animal welfare; animal welfare act, standards, food and drugs administration animal environment, animals in research; why animals are need in research, use of animals in bio medical research, ethics of animal use; philosophical issues involved in animal use, classifying animal treatment and behavior, emerging fields of animal welfare, animal environment and agri- ethics; animal's role in food production, non animal use of animal by products, farm animal welfare, environmental factors affecting welfare.

#### **Practicals**

Welfare assessment of animals; problem analysis, farm practices, food production.

### **LP 4104 (3: 15/60) LABORATORY TECHNIQUES IN LIVESTOCK PRODUCTION**

#### **Theory**

Introduction to laboratory techniques; Hematology, Urine analysis, Faecal analysis, Postmortem examination, interpretation of laboratory test results.



### **Practicals**

Obtain blood samples from livestock animals, preparation of a blood smear, examination under microscope and interpret, observations, determine the packed cell volume of a blood sample, red blood cell and white blood cell count of a blood sample, examine a urine sample under the light microscope and interpretation, perform a faecal flotation test and interpret results, perform postmortem examinations in livestock animals.

## **LP 4105 (3:30/30)      ORNAMENTAL FISH CULTURE**

### **Theory**

Introduction; present status of the local and global ornamental fish and aquatic plant industry, potential, limitations and remedial measures, types and scales of ornamental fish farms, management of ornamental fish; breeds and breeding methods for different aquatic species, brood stock management, larval rearing, feeding and feed formulation for different species of different stages, water quality management and maintenance of fresh water and marine, ornamental fish tanks, export market requirements, health management, ornamental aquatic plants; identification of aquatic plant spp, management of aquatic plants, production of aquatic plants for export market.

### **Practicals**

Maintenance of fresh water and marine water fish tanks, breed identification and breeding, feed identification and formulation of feed for ornamental fish, fish handling and transport techniques, identification of aquatic plant species and propagation, record keeping and cost benefits analysis.

## **LP 4106 (2:15/30)      PROCESSING OF ANIMAL BY-PRODUCTS**

### **Theory**

Introduction the present status and potential of animal byproducts in Sri Lanka, nutritive value of animal by products, processing of animal byproducts; blood, organ meat and offal, wool, hair, hide and feather, other potential products; pet feed, pharmaceuticals, enzymes and hormones, meat, blood and bone meal, lard and tallow, environmental impact of the animal by product industry.

### **Practicals**

Evaluation of the nutritive value of animal by products, processing of blood, organ meat, offal, wool, hair, hide and feather, production of lard and tallow.

## **LP 4107 (2:15/30) WILD LIFE CONSERVATION**

### **Theory**

Introduction; history of wildlife conservation, protected areas and fauna of Sri Lanka, the wild life ordinance, potential and limitations of wild life management, wild life as an integral component of the eco system, wild life health, social and feeding behavior, management of national parks and protected areas.

### **Practicals**

Stock assessment of a given wild life species in a given area, observation of the behavior of wild animals under confinement and in nature, tranquilizing techniques of wild life species.

## **LP 4108 (3:30/30) QUALITY MANAGEMENT OF FOOD PROCESSING AND HANDLING**

### **Theory**

Basic quality concepts; codex Alimentarius basic document in food hygiene, food safety management procedures; good manufacturing practices and food act (1980), cleaning & disinfection, personal hygiene, integrated pest management, training & supervisory management, design and construction of food premises and equipment, good agricultural practices (GAP); EUREPGAP, ISO 9000 quality management system; total quality management, hazard analysis and critical control point (HACCP); HACCP inspection procedure, ISO 22000; other quality management system; ISO 14000 – environmental management system, SA 8000 – social responsible system OHSAS 8000- occupational health and safety management system, code of practices of Sri Lanka standards institute (SLSI) for food safety assurance system; SLS 143 – code of practices for general food hygiene, SLS 872 – code of practices for dairy industries, SLS 892 – code of practices for processing of poultry SLS 1065 – code of practices for processed meat products.

### **Practicals**

Determine the effectiveness of sanitation procedure and sanitizers of different food industries, determination of water quality, quality of raw materials, preparation of HACCP plan for a given food industry, quality inspection procedure of a fish processing factor.

**LP 4201 (3:00/90) INDUSTRIAL TRAINING**

**Intended Learning Outcomes**

- Display attributes, skills, behavior and attitude required at a work place
- Apply appropriate scientific principles and techniques in working environment
- Demonstrate the ability to establish effective relationships with others, and to define, share and delegate responsibilities
- Display skills of professional scholarship required for personal development and career management.

**LP 4202 (5:00/150) RESEARCH**

**Intended Learning Outcomes**

- Exhibit the scientific writing ability
- Synthesize a problem statement in the discipline of livestock production
- Identify the objectives of the study
- Use relevant theoretical and empirical models in the study
- Perform a literature search
- Analyze the data using appropriate techniques
- Discuss and interpret the results and draw conclusions from the study carried out

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## **6 COMPUTER SCIENCE**

### **COURSE CAPSULES OF COMPUTER SCIENCE**

#### **AG 1102 (2:15/30) COMPUTER SCIENCE I**

##### **Theory**

Word Processing Software: Introduction; Word basics, Navigating in a document, Additional editing techniques, Formatting Documents, Introduction to tabs and tables, Controlling page appearance, Tools and printing, Spreadsheet Software: Introduction; Excel basics, Modifying a workbook. Moving and copying data, Formatting a worksheet, Printing a worksheet, Creating Charts, Presentation Software: Introduction; An Orientation to PowerPoint, Beginning a Presentation, Formatting Text Slides, Adding Tables to a Presentation, Charting Data, Modifying Objects, Adding Images to a Presentation, Preparing to Deliver a Presentation

##### **Practicals**

Word Processing Software, Spreadsheet Software, Presentation Software

#### **AG 1202 (2:15/30) COMPUTER SCIENCE II**

##### **Theory**

Internet; Introduction to the Internet, Connecting to the Internet, Introduction to the World Wide Web (WWW), Using an Internet Browser Efficiently, Accessing Hypermedia, Searching for information, Accessing electronic discussion and news groups, Mail Management; Electronic Mail, Outlook, The Computer and its Operating System; Personal Computer Components, Operating System Fundamentals, Windows/Linux : Basics, File Management, Desktop Management, Personal Computer Security Concepts

##### **Practicals**

Internet, Mail Management, the Computer and its Operating System

#### **AG 2102 (3:30/30) COMPUTER SCIENCE III**

##### **Theory**

Word Processing Software :Advanced; Customize Number and Bullet Lists, Customize Tables and Charts, Use Advanced Formatting, Create and Edit Styles, Modify Pictures, Create Customized Graphics, Format Section Breaks and Columns, Create and Edit Macros, Create and Modify Templates, Performing Mail Merges, Spreadsheet Software: Advanced; Creating and Applying Templates, Creating and Modifying Charts, Working with Graphic Objects, Calculating with Advanced Formulas, Sorting and Filtering Data, Using Excel with the Web, Presentation Software: Advanced; Creating a

Custom Design Template, Adding Organization Charts and Diagrams, Adding Special Effects, Creating Web Presentations, Collaborating in PowerPoint, Delivering a Presentation

### **Practicals**

Word Processing Software: Advanced, Spreadsheet Software: Advanced, Presentation Software: Advanced

## **AG 2202 (2:15/30)      COMPUTER SCIENCE IV**

### **Theory**

Application of Statistical Software; Understanding Data Processing Concepts, Learning the Concepts of SAS Programming, Reading a Raw Data File with the DATA Step, Navigating the SAS Windowing Environment, Creating a Variable with the DATA Step, Creating SAS Data Sets, Programming with the DATA Step, Combining SAS Data Sets

### **Practicals**

Application of Statistical Software - 1

## **AG 2202 (3:45/30)      COMPUTER SCIENCE V**

### **Theory**

Photoshop; Navigating the Workspace, Working with Documents, Image Modes & Color Selection, Selections and Masks, Layers and Blend Modes, History Panel, Adding and Working with Type, Painting Tools, Retouching Tools, Graphics; Application and Interface, Illustrator Preferences, Creating Shapes, Creating Paths, Basics of Type, Selection Techniques, Layers Palette, Path Editing, Combining Objects, Transformation Tools, Working with Symbols, Filters and Effects, Color Essentials, Working with Color, Color Control Palettes, Saving, Printing Files, Working with Type, Customizing Swatches, Gradient Mesh Tool, Raster Images, Masks and Compound Paths, Actions, Preparing Images for the Web, Preparing Images for PDF, Creative Suite, Graphics in Flash, Introducing the Flash Interface, Meet Flash: Fundamentals, Drawing with Vectors, Flash Natural Drawing Tools, Advanced Vector Drawing, Setting Colors in Flash, Bitmaps in Flash, Using Text in Flash, Symbols, Symbol Effects: Filters & Blends, Introduction to the Timeline, Shape Tweening, Motion Tweening, Advanced Animation Techniques, Simulating Speed in your Animations, Nesting Symbols for Complex Animation, Animated Masks & Filters, Sound & Video, Flash Buttons, Scripting Basics, Basic Navigation Systems, Flash Screens, Advanced Navigation Systems, Data Entry Forms & Components, Publishing your Movies, Developing for Mobile & PDA, Database Management; Overview of Access, Creating tables, Working with tables, Using select queries, Creating and using forms, Creating and using reports, Creating and maintaining a database, Principles of table design,

Principles of table relationships, Table design techniques, Designing queries, Customizing form designs, Working with data access pages, Customizing reports, Using the Chart Wizard

### **Practicals**

Adobe Photoshop, Illustrator, Flash, Microsoft Access

## **AG 3202 (3:45/30)      COMPUTER SCIENCE VI**

### **Theory**

HTML; Basics of Web development, Difference between HTML and XHTML, Format HTML documents, Create links in HTML documents, Add images to HTML documents, Create HTML tables, Create forms in HTML, Basics of Cascading Style Sheets (CSS) for formatting HTML documents, DreamWeaver; Introducing the Interface, Creating Your First Website, Adding Images & Links, Creating Sites Using Templates, Designing with Tables. Creating Online Forms, Saving Time with Libraries, Assets, & More, Creating Websites with Frames, Dreamweaver Tips & Tricks, Rollovers & Other Image Tricks, Saving Time with Templates, Designing with Cascading Style Sheets, Creating Precise Designs Using Layers, Using Behaviors to Add Interactivity, Adding Audio, Video, & Flash™ to a Page, Testing the Website, Publishing & Managing the Website, Video Editing – Adobe Premier; How to Get Started, Build Project File, Project Timelines, Adding Clips, Assemble Project, Premier Palettes, Working with Clips, Working with Audio, Effects, Alpha Transparency, Animation, Finalize Project, Title Effect, Track Matts, Advanced Editing, Filters, Multiple Video Clips, Virtual Clips, Advanced Features, Visual basic; Introduction to Programming, Introduction to Visual Basic, Visual Basic Controls, Introducing Events, Setting Properties at Run Time, Creating and Using Menus, Compiling and Distributing Applications, Working with VBA, Handling Errors, Debugging Applications, More VBA Issues, More Form and Control Issues, Support for Data Access in Visual Basic, Introduction to Objects, Managing Data with ADO, Forms and ADO, Using User Interface Data Tools, Using Form Modules, Creating Your Own Objects, Working with Collections, Creating MDI Applications, Working with the Windows API, Optimizing Visual Basic Programs, Authoring - Macromedia Director; Essentials, Animation, Input and Output, Interactivity, Production Skills, Director Techniques.

### **Practicals**

HTML & Dreamviewer, Adobe Premier, Macromedia Director, Visual Basic

**AG 4202 (2:15/30)      COMPUTER SCIENCE VII**

**Theory**

Application of Statistical Software; Introduction to Graphics using SAS/GRAPH Software, Descriptive Statistics, Analysis of Variance, Analysis of Variance 2, Regression, Regression Diagnostics, Regression 2, Categorical Data Analysis, Analysis of Covariance and Regression Using Indicator Variables

**Practicals**

Application of Statistical Software-SAS – 2

**ASSESSMENT (COMPUTER SCIENCE)**

Continuous assessment: Could include the submission of actual activities during certain selected normal classes and/or a midterm were activities have to be done  
- 25 Marks

Final Exam: Performing a series of activities covering the whole course in the computer lab during examination hours.  
- 45 Marks

Assignment on the course content: Activity done during off hours submitted. This too to be tested, by a short Viva and actually getting them to do certain parts of it to ensure that it was done by the person submitting it.  
-30 Marks

Pass mark, and cut off for grades are similar to the other courses offered in the Faculty.



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## **7 ENGLISH LANGUAGE**

### **COURSE CAPSULES OF ENGLISH LANGUAGE**

#### **AG 1101 (65) ENGLISH LANGUAGE**

Listening; Listen to songs and different speech varieties, Listen and comprehend in general, Recognize contracted forms, Practice sign-posts to identify the organizational structure of a lecture, Practice differences in vowel sounds, Distinguish among words with similar sound, Reading; Selective reading, Read and understand smaller texts, Identify instructions pertaining to teaching and learning, Obtain instructions to perform tasks for academic purposes and day-to-day life, Understand sign post expressions, Writing; Write simple sentences to convey complex ideas, Listen to a lecture and take down notes, Ability to describe an object or event, Ability to explain how something would work, Ability to compare and contrast evidence and opinions, Speaking; Engage in different role-plays, Demonstrate how to politely interfere a conversation, Use of gestures, facial expressions, body movements to convey meaning, Demonstrate how to politely interfere a conversation

#### **AG 1201 (65) ENGLISH LANGUAGE**

Listening; Practice how meanings are conveyed through incomplete utterances, Practice the use of discourse boundaries to understand meaningful sections, Listen to small dialogues to understand context, Train on different strategies required for different tasks using same text, Reading; Skim subject related texts, Skim through different other texts, Find specific information given in a text, Deduce hidden meanings, Writing; Accurate use of capitalization, How to use punctuation in English, Spelling errors and how to overcome them, Speaking; Practice sounds of English to make accurate pronunciation, Use of gestures in communication, Identify and apply gestures to deduce meaning, Familiarise rhythmic and intonation pattern to understand speech, Practice appropriate use of vocabulary in different situations and relate to the conversation partner

#### **AG 2101 (50) ENGLISH LANGUAGE**

Listening; Listening comprehension activities, Listen and do, Listen and engage in discussions, Reading; Use of different texts to improve reference skills, Use titles, sentences etc to infer what information might follow, Writing; Write small sequential activities, Write more complicated sequential activities, Practice writing within given guidelines, Speaking; Successfully engage in discussions agreeing, disagreeing, supporting, opposing, and arguing, Participate in debates, Explain processed, functions, equipment, operations etc, Seeking and giving information, Practice how to ask questions, make suggestions, requests, invitations, apologize or complain, Practice different ways of asking questions and respond to them appropriately and accurately

### **AG 2201 (55) ENGLISH LANGUAGE**

Listening; Practice deducing meaning according to the context, Practice the processing of the meaning of a text, Reading; Inferring meaning of unknown words and phrases, Understand meanings and transform them in to other forms, Understand the relationships between parts of a text, Enhance short-term memory to transfer information, Writing; Write different view- points, Ability to present and justify an opinion, Practice free style writing, Ability to present the solution to a problem, Ability to elicit and provide general factual information, Speaking; Practice the use of non verbal communication, Engage in different role plays, Engage in different improvisations (unscripted dramatization)

### **AG 3101 (55) ENGLISH LANGUAGE**

Listening; Practice how the change of stress and intonation differ the meaning, Formulate and answer questions, Practice different question forms and answering them appropriately, Reading; Deduce meaning from a given text, Comprehend implied meaning of a text, Understand writers' ideas, viewpoints, etc, Identify grammatical functions of words, Monitor comprehension, Distinguish main ideas from minor ideas, Use context to build meaning and aid comprehension, Improve the ability to comprehend a text into sense units, Writing; Paraphrase a given text, Summarize a text within a given words limit, Ability to use appropriate language in terms of register, style and content, Ability to communicate an idea to the reader in an appropriate style, Ability to address the problem without straying from the topic, Ability use appropriate language in terms of register, style and content, Ability to organize, present and compare data, Essay writing, Speaking; Role plays, Discussions, Application of fillers, hedges, pauses, hesitation markers etc in oral communication, Practice sign post markers in speech, Describe the stages of a process, Engage in personal correspondence

### **AG 3201 (45) ENGLISH LANGUAGE**

Listening; Practice inferring opinions across a whole text, Recognize implied meaning, Engage in listening job specific situations, Reading; Understand discourse and cohesive devices to comprehend meaning, Use background knowledge and previous knowledge to understand a text, Read for gist, Read and paraphrase a given text, Practice selective reading, Use knowledge of language structure to understand a text, Writing; Discuss the format of a business letter, Write various business letters, Discuss innovations in preparing job applications, Compare and contrast different texts, facts, diagrams, findings, etc, Present and justify an opinion, Express opinions, Adopt sign post markers in writing, Writing messages, notices, memorandums, Formal and informal letter writing, Speaking; Making prepared and un prepared speeches, Practice different roles in a business meeting

### **AG 4101 (55) ENGLISH LANGUAGE**

Listening; Demonstrate the use of pauses, fillers, sounds, hesitation markers, etc, Recognize word boundaries, Recognize different styles of speaking of different speakers, Reading; Adjust suitable strategies for the purpose of reading, Understand different writing styles, Writing; Write short and long reports, Ability to evaluate and challenge ideas, evidence or an argument, Distinguish academic and general writing, Speaking; Making oral presentations, Practice conveying meaning from different gestures, Practice interviewing skills

### **ASSESSMENT (ENGLISH LANGUAGE)**

All courses are non-credit courses and will not contribute to the GPA of a student. However the following rules have to be considered for all courses.

- A pass in the English language is essential for the completion of the degree.
- A pass in each semester is essential. If not the students will carry an incomplete grade.
- The pass mark would be 50%.
- Continuous assessments would be done in all semesters.
- Equal percentage of marks would be allocated to each skill; listening, reading, writing, and speaking.
- There will be one assignment per skill per semester.



## **8. PERSONALITY DEVELOPMENT**

### **COURSE CAPSULE OF PERSONALITY DEVELOPMENT**

#### **AG 1103 – Year I Semester I**

Leadership, interpersonal relations, communication, stress management, group dynamics and team building, conflict management, time management, motivation

Evaluation

Attendance - 50%

Continuous Assessment - 50%

## **9. SRI LANKAN STUDIES AND CURRENT AFFAIRS**

### **Sri Lankan Studies and Current Affairs (AB 1103)**

#### **Year 1 Semester I**

Timely important 8-10 general aspects relevant to current affairs in the Sri Lankan context are discussed in this subject. This is a non-credited course.

## **10. WORLD STUDIES AND CURRENT AFFAIRS**

### **WORLD STUDIES AND CURRENT AFFAIRS (AB 1203)**

#### **Year 1 Semester II**

Timely important 8-10 general aspects relevant to current affairs in the global context are discussed in this subject. This is a non-credited course.

## **11 . GENERAL KNOWLEDGE AND AWARENESS IN AGRIBUSINESS WORLD**

### **General Knowledge and Awareness in Agribusiness World (AB 3108)**

Timely important 12-15 general aspects relevant to agribusiness in world context are discussed in this subject. This is a non-credited course.

## **12. EXAMINATION CRITERIA**

### **12.1 GENERAL**

12.1.1 A student who satisfies the following conditions will be awarded a B.Sc. degree in Agricultural Sciences and Management

12.1.1.1 Be registered by the university as a candidate for the degree programme.

12.1.1.2 Have completed the programme of studies for each semester to the satisfactory level to the Senate.

12.1.1.3 Have at least 80% attendance for lectures, tutorials and practical assignments, etc.

12.1.2 Every registered student who wishes to sit the examinations should submit an application in the appropriate form within the stipulated period. Each eligible student will be issued an admission card/form to sit the relevant examination.

12.1.3 Every candidate should sit the examination in respect of all the relevant subjects studied during the semester. A candidate wishing to repeat/upgrade the result of a subject should sit for that subject at the next first available opportunity.

12.1.4 Assessment policy and Strategies.

Each credited (GPA) course will have an end semester comprehensive written examination. They will also have continuous assessments as approved by the department. Each non-credited (non-GPA) course will have continuous assessments designed and evaluated by the coordinator and approved by the Senate. The practical component of courses will be assessed as decided by the departments and approved by the Senate. The industrial training programme will be assessed by the supervisors appointed by the department that offers the specialization module.

#### 12.1.4 Examination structure

##### Structure of the Examination Papers

Credits	Part II	Marks	Part I	Marks
1 or 2	1.5 hr 04 out of 05 questions 02 compulsory 02 optional	25*2(C) 15 (O) 15 (O) <b>80%</b>	½ hr 20MCQ	1 * 20   <b>20%</b>
03 or above	2.5 hr 06 out of 7 questions 02 compulsory 04 optional	20* 2(C) 10 (O) 10 (O) 10 (O) 10 (O) <b>80%</b>	½ hr 20MCQ	1 * 20     <b>20%</b>

(C) – Compulsory questions

(O) – Optional questions

##### 12.1.4.1 Theory Examinations

Theory paper consists of two parts:

Part I is a multiple choice questions paper

Part II is an essay type paper

##### 12.1.4.2 Practical Examinations

There shall be a practical examination for some courses of study and will include;

- A practical examination (Spot test/ Practical paper / Practical test) conducted at the end of each semester or a continuous assessment.
- An oral examination (Viva voce)
- Continuous assessments



## 12.2 FINAL EVALUATION FOR EXAMINATIONS

The final grade for a subject / course will be decided upon the marks calculated on the following formula irrespective of the number of credits and theory; practical composition.

$$\text{Final Marks} = \frac{2T + P}{3}$$

Where T donates the marks obtained for Theory component and P donates marks obtained for the practical component.

### Grading Procedure, Criteria and Grade Points

The grading procedure adopted by the Senate of the Sabaragamuwa University of SriLanka will be adopted. The cut - off points for grades and the grade point will be as follows.

Letter grade	Percentage mark	Grade point
A	$\geq 80$	4.0
A-	$75 - < 80$	3.7
B+	$70 - < 75$	3.3
B	$65 - < 70$	3.0
B-	$60 - < 65$	2.7
C+	$55 - < 60$	2.3
C	$50 - < 55$	2.0
C-	$45 - < 50$	1.7
D+	$40 - < 45$	1.3
D	$35 - < 40$	1.0
F	$< 35$	0.0

### 12.3 GRADE POINT AVERAGE (GPA)

An aggregate index will be calculated as the weighted average of the grade points obtained from grades of different courses and the number of corresponding course units. This index shall be called the GPA.

$$\text{GPA} = \frac{\sum G_i C_i}{\sum C_i}$$

Where  $G_i$  = grade point of the  $i^{\text{th}}$  course

$C_i$  = number of credits of the  $i^{\text{th}}$  course

The final GPA (FGPA) will be calculated considering the GPA of year 1, year 2, year 3 and year 4 which will be weighted by 0.2, 0.2, 0.3 and 0.3 as well as the total number of course units in each year respectively.

The FGPA will be calculated at the completion of all requirements for the degree as follows

$$\text{FGPA} = \frac{\sum a_j T_j P_j}{\sum T_j a_j}$$

Where  $a_j = 0.2, 0.2, 0.3, 0.3$  for  $j = 1^{\text{st}}$  year,  $2^{\text{nd}}$  year,  $3^{\text{rd}}$  year,  $4^{\text{th}}$  year respectively

$T_j$  = total course units credited in year  $j$

$P_j$  = GPA in year  $j$

### 12.4 AWARD OF CLASSES

Classes will be awarded on successful completion of the degree program entirely on the Final GPA of the student, on the following basis.

Class	Cut-off FGPA for Awarding classes
First Class	$\geq 3.75$
Second Class (Upper)	$3.30 - < 3.75$
Second Class (Lower)	$2.75 - < 3.30$
Pass	$2.00 - < 2.75$

### **13. AWARDS AT CONVOCATION**

#### **VICE CHANCELLOR'S GOLD MEDAL**

(Awarded by Vice Chancellor of Sabaragamuwa University of Sri Lanka)

The overall excellent performance in academic work, sportsmanship, interest in aesthetic and cultural activities, proven leadership, exemplary conduct and character during the academic period in the University

#### **ROBERT JAYASEKARA MEMORIAL GOLD MEDAL**

(Awarded by Prof. M. U. Jayasekara)

First Class or Second Class Upper Division with the highest final grade point average at the BSc in Agricultural Sciences and Management.

#### **SUBASENA MAHALIYANAARACHCHI MEMORIAL GOLD MEDAL**

(Awarded by Senior Prof. Rohana P. Mahaliyanaarachchi)

Best performance with the highest final grade point average in the Department of Agribusiness Management with First Class or Second Class Upper Division with the highest final grade point average at the BSc in Agricultural Sciences and Management.

#### **BANDUSENA AMARASINGHE MEMORIAL GOLD MEDAL**

(Awarded by Prof. A.A.Y. Amarasinghe)

Best performance with the highest final grade point average in the Department of Export Agriculture with First Class or Second Class Upper Division with the highest final grade point average at the BSc in Agricultural Sciences and Management.

#### **ROBERT MUNASINGHE MEMORIAL GOLD MEDAL**

(Awarded by Dr. M.A.J.P Munasinghe)

Best performance with the highest final grade point average in the Department of Livestock Production with First Class or Second class Upper Division with the highest final grade point average at the BSc in Agricultural Sciences and Management.

## **14. EXAMINATION PROCEDURES, OFFENCES AND**

### **PUNISHMENTS**

#### **14.1 RULES & REGULATIONS GOVERNING THE HOLDING OF EXAMINATIONS**

- Candidates should be at the examination hall 15 minutes before the commencement of the relevant examination. They should enter the examination hall only when informed to do so by the supervisor.
- After entering the examination hall the candidates should be seated at the desk/table bearing their Index Numbers.
- Candidates are permitted to bring useful items such as pens, pencils, erasers, ink, rulers, geometrical instruments, coloured pencils etc. to the examination hall. No candidate is allowed to bring in any written paper or notes or any other item, which may be misused at the examination.
- Candidates are not allowed to enter the examination hall 30 minutes after the commencement of an examination and they will not be allowed to leave the examination hall before the lapse of 30 minutes from the commencement of the examination and during the last 15 minutes of the examination.
- Every candidate must bring the examination entry form (admission card), student record book and the student identity card to the examination hall. While the student record book and the identity card should carry the student's photograph and signature, it should also be certified either by the Registrar or an officer authorized by the Registrar. If the names appearing in the student record book/ identity card and those in the examination entry form differs, the candidate has to submit an affidavit to the Registrar. In the event of such certification not being available, the candidate has to submit either the national identity card or a recent photograph certified by an authorized officer.
- When requested by the supervisor of the examination, candidates must surrender all documents in their possession.
- No candidate should ask another for anything, exchange anything, engage in conversation, copy from another or help or encourage another candidate to copy.
- Candidates should write their answers only in the answer sheets or answer books issued on the particular date of the examination.
- Writing paper such as answer sheets, graph paper, drawing paper, ledger and journal sheets required by the candidates will be issued to

them at the examination centre. Candidates are advised not to tear, bend crumple or destroy any paper or answer sheet given to them. Writing paper issued only by the supervisor should be used at the examination. Log tables should be used carefully and left on the table after use. All stationery supplied to the candidates, both used and unused, should be left on the desks when candidates leave the examination hall.

- Before answering the question paper, candidates should write their Index No. and the name of the examination in the relevant place in the answer script. The Index No. Should also be written in all other sheets used for answering questions. No candidate should write his/her name or place any identification mark on the answer script. It should also be noted that using the Index No. of another is a breach of examination rules.
- All paper used for rough work should be crossed with a line and annexed to the answer script. Rough work should not be done on the examination entry form, timetable or question paper.
- All candidates must maintain strict silence both inside and outside the examination hall and not disturb the supervisor, invigilators and other candidates.
- Except for a practical or field note book or assignment written by himself/ her self, no candidate is allowed to submit any other document written partly or wholly by someone else, with the answer script.
- Impersonation of any kind is strictly prohibited.
- The supervisor or the invigilators have the authority to call for a written statement from a candidate regarding any incident that takes place in the examination hall. Candidates should not refuse to make such a statement or sign such a statement.
- Answer scripts should be personally handed over to the Supervisor or an Invigilator. Answer scripts should not be handed over to anyone else for whatever reason. All candidates should remain seated until all answer scripts are collected.
- Candidates must make sure that they don't have in their possession any document, note or device which can be misused at the examination. They must also ensure that they do not indulge in acts, which can give rise to their being suspected of misconduct at the examination.

## **14.2 SUBMITTING MEDICAL CERTIFICATES FOR ABSENCE AT EXAMINATION**

Internal candidates who absent themselves for the whole or part of an examination due to ill health should report to the Medical Officer of the University about it either before the commencement of the examination or during the examination time.

Candidates who fail to do so for unavoidable reasons must submit a medical certificate from a District Medical Officer or a Medical Officer attached to a government hospital, within 14 days of the commencement of the relevant examination or part of the examination. Medical certificates issued by private medical officers; Ayurvedic physicians or Homeopaths are not accepted.

## **14.3 EXAMINATION MALPRACTICES**

- Possession of unauthorized documents.
- Copying
- Cheating
- Removal of examination stationery from the examination hall.
- Inappropriate behavior
- Impersonation
- Gaining or attempting to gain unlawful access to the contents of a question paper.
- Aiding or abetting someone to cheat or receiving assistance from someone to cheat.
- Using undue influence on supervisors, invigilators and other examination officials.
- Any other action considered as an examination malpractice by the University Senate.

## **14.4 PROCEDURE FOR INVESTIGATING EXAMINATION MALPRACTICES**

The supervisor should report any examination malpractice to the Senior Asst. Registrar (Examinations) who will investigate into the matter and submit a report to the sub-committee appointed by the Senate. On the recommendations submitted by the sub-committee, the Senate will impose appropriate punishment on the offenders.

## 14.5 PUNISHMENTS FOR EXAMINATION MALPRACTICES

Exam Malpractices	Penalty
<ul style="list-style-type: none"> <li>• Possession of unauthorized documents.</li> <li>• Copying.</li> <li>• Cheating.</li> <li>• Removing examination stationery belonging to the University.</li> <li>• Inappropriate conduct.</li> <li>• Impersonation.</li> </ul>	<ul style="list-style-type: none"> <li>• Banning examination candidacy for a period of two years or imposing alternative punishment considered appropriate by the Senate.</li> <li>• Invalidating examination candidacy for a period of 3 years or imposing alternative punishment considered appropriate by the Senate.</li> <li>• Cancellation of examination candidacy, debarring candidate from sitting for university examinations for a specific period or imposing any other punishment considered appropriate by the Senate.</li> <li>• Cancellation of examination candidacy and debarring candidate from sitting for university examinations for a period specified by the Senate.</li> <li>• Cancellation of examination candidacy, debarring candidate from sitting for university examinations for a period not exceeding 05 years and imposing any other punishment considered appropriate by the Senate.</li> <li>• Annulment of candidacy for a period not less than 05 years and not exceeding 10 years and the imposition of any other punishment considered appropriate by the Senate.</li> </ul>

<ul style="list-style-type: none"> <li>• Gaining illegal access or attempting to gain such access to the contents of a question paper.</li> </ul>	<ul style="list-style-type: none"> <li>• Cancellation of examination candidacy and imposing any other punishment considered appropriate by the Senate.</li> </ul>
<ul style="list-style-type: none"> <li>• Aiding and abetting examination malpractices and receiving assistance to commit such malpractices.</li> <li>• Attempting to unduly influence examination supervisors and other officials.</li> <li>• Being guilty of an examination malpractice for the second time.</li> </ul>	<ul style="list-style-type: none"> <li>• Cancellation of examination candidacy and imposing any other punishment considered suitable by the senate.</li> <li>• Any punishment prescribed by the Senate.</li> <li>• Cancellation of registration as a student of the university.</li> <li>• Compulsory punishments,</li> <li>• In addition to the punishments listed above, the following will also be imposed on the recommendation of the Senate:</li> <li>• Withholding a class for the degree</li> <li>• Limiting the maximum marks obtainable to 40% when re-sitting cancelled question papers.</li> <li>• Either cancelling or withholding scholarships and bursaries.</li> <li>• Withdraw residential facilities.</li> <li>• Withholding invitation to graduation ceremony</li> <li>• Delaying graduation and the release of degree results by one year.</li> </ul>

The Senate will decide on the punishments to be imposed for any examination malpractice not mentioned above



## **15. PREREQUISITES TO QUALIFY FOR YEAR III (SPECIALIZATIONS)**

### **01. Department of Export Agriculture**

Student must have sat or qualified for sitting for all Export Agriculture subjects (07 subjects) offered in the 1<sup>st</sup> year and, at least 02 Export Agriculture subjects offered in the 2<sup>nd</sup> year plus Farm Practice Course of Department of Export Agriculture.

### **02. Department of Livestock Production**

Student must have sat or qualified for sitting for all Livestock Production subjects (04 subjects) offered in the 1<sup>st</sup> year and, at least 02 Livestock Production subjects offered in the 2<sup>nd</sup> year plus Farm practice course of Department of Livestock Production.

### **03. Department of Agribusiness Management**

Student must have sat or qualified for sitting for all Agribusiness Management subjects (04 subjects) offered in the 1<sup>st</sup> year and, at least 02 Agribusiness Management subjects offered in the 2<sup>nd</sup> year by Department of Agribusiness Management plus any one Farm Practice Course of Department of Export Agriculture or Department of Livestock Production.

### **To be selected for the specialization/modules of particular department;**

1. First criteria - based on students' choice
2. In case students' demand is greater than the department quota, students will be selected based on their GPA of the subjects offered by the particular department.

## **16. GUIDELINES FOR STUDENTS WHO LACK ATTENDANCE**

Students who lack attendance have to obey the following guidelines to qualify for the semester examinations of the Faculty of Agricultural Sciences.

1. Students who fail to maintain 80% attendance for a particular subject/s will not qualify for the semester examination of that subject/s except under special circumstances as outlined below;
  - a) If a student has maintained at least 60% attendance and has a chronic illness can make an appeal to the Faculty Board. The appeal should be supported with a medical certificate from a specialist doctor and a report from a student counselor in the Faculty.
  - b) If a student has maintained at least 60% attendance and has obtained prior approval from the Faculty Board through the University Sports Advisory Committee to participate in university sports activities.
  
2. Students with less than 80% but have maintained 50% attendance for a particular subject/s will have to fulfill the following requirements in order to qualify for the subsequent semester examinations as first attempt students.
  - a) They have to meet the relevant subject coordinator and undertake make-up work.
  - b) Submit the prescribed form confirming completion of the make-up work available at the Office of the Dean.
  
3. Students who fail to maintain 50% attendance for a particular subject/s to qualify as first attempt students for subsequent semester examinations will have to do a make-up for missed academic work by attending the missed lectures and practical classes for the particular subject/s.

## **17. CODE OF DISCIPLINE FOR STUDENTS**

### **SECTION I**

#### **General Students' Discipline – Act of Indiscipline and Insubordination**

1. The conduct of every student should at all times be exemplary. Throughout his period of studentship he should at all times behave with the decorum to be expected of a graduate.
2. Every student should apply himself to his academic work in such manner as to satisfy the university. No student may absent himself/ herself from lectures or practical work for a period exceeding three weeks in one academic year unless he/ she has obtained special permission or has a valid reason for such absence.
3. No. student should commit any of acts of indiscipline and Insubordination listed below:
  - (01) Behaving in such manner as to bring into disrepute or endanger the good name of the university; to obstruct the proper functioning of the education, examination, or administrative activities of the university; to prevent or obstruct a member of the academic/ non-academic staff, or an employee of the university from carrying out his duties; to ridicule or humiliate such a person.
  - (02) Failure or inability to produce the Students Record Book, which will be issued to students, when called up-on to do so by the Vice-Chancellor, Dean of the faculty a member of the academic staff, a member of the administrative staff, or by person authorized by the Vice-Chancellor, or the Registrar, or failure to identify himself/ herself.
  - (03) Causing damage to university property; removing such property from the university premises, appropriating it to himself/ herself or to another; defacing, dirtying or defiling the buildings, walls or roads of the university by scratching, writing, drawing, or pasting posters upon them.

- (04) Causing or aiding, abetting, encouraging or sanctioning others to cause injury or harm to the self-respect or dignity of other students, staff officials, employees or lawful visitors to the university, or causing loss, ridicule, danger, mental or physical pain to such person or persons.
- (05) Establishing, organizing, conducting or assisting any activity, organization, or society within the university, apart from those registered in terms of Clauses 112, 114, 115, 116, 117 and 118 of Part II of the Universities Act No.16 of 1978 as amended by the Universities (Amendment) Act No. 7 of 1985.
- (06) Behaving in such manner as to disturb or disrupt, or to gain admittance without permission, or to cause discomfort or harm to participants in any meeting, seminar, festival, procession, exhibition, variety entertainment, play, film show or religious, cultural or social event, which may have been organized with prior approval from the Vice Chancellor or the Dean of the Faculty by a society or organization which has been registered under the provisions laid-out in section (5) above.
- (07) Behaving in such manner as to disturb or disrupt, or to gain admittance without permission, or to cause discomfort or harm to participants in any meeting, seminar, festival, procession, exhibition, variety entertainment, play, film show or religious, cultural or social event, which may have been organized, with prior approval from the Vice Chancellor of the university by the university administration or by the academic or non-academic staff or by an external organization.
- (08) Organizing staging, encouraging, sanctioning, or participating in any meeting, seminar, festival, procession, exhibition, variety entertainment, play or film show held within the university premises or in its environs without the prior approval of the Vice Chancellor.
- (09) Holding meetings, picketing, demonstrating participating in processions or sloganizing, performing satyagraha, satyakriya of fetes, publishing, drawing, writing, putting or distributing hand bills notices, or posters or encouraging sanctioning or assisting others to commit such action, whether in favour of a university teacher or an official or an employee of the university or in favour some cause out side the university.

- (10) Ragging in any form (N.B. any person caught ragging is liable to be expelled from the university without any inquiry being held).
- (11) Collecting, or encouraging to collect or sanctioning the collection of money or any other items from students of the university, or the retention or disbursement of such funds or items, by any person whether an office bearer of a registered society or not unless it is with the full written consent of the Vice Chancellor.
- (12) Writing, printing, publishing, distributing, exhibiting or pasting either within the university, or in its vicinity, posters, notices, pamphlets or other writing slanderous to any individual or detrimental to the reputation of the university to discipline or to peace.
- (13) Publishing, pasting, exhibiting, writing or drawing any notice or poster, in any place other than those authorized for such display, even if such action is in connection with the activities of a society registered with the University in terms of Clause 115 of Part III of the Universities Act. No. 16 of 1978, as amended by the Universities (Amendment) Act. No. 7 of 1985, and even if such notice or posters have been approved by the Vice Chancellor, Dean of the faculty or the relevant teacher.
- (14) Publishing, broadcasting, telecasting or releasing to the mass media, whether by the student on his own responsibility, or on behalf of another student or group of students on or behalf a society, any statement article or notice, detrimental to the reputation of the University or insulting or humiliating the university or insulting/humiliating the university authorities, or any official or employee of the university, or any other person connected with the university.
- (15) Consumption, distribution sale or storage of drugs, liquor, within or bringing such into the university or been under the influence of liquor or drugs within the university or encouraging assisting or sanctioning such action by any other person.
- (16) Bringing into or keeping or storing within the university, any weapon, explosive or dangerous article or encouraging or assisting in such action.

- (17) Non-provision or the avoidance of provision of information needed by or requested by the university or the provision of false or distorted information.
- (18) Abuse or misuse of university buildings, ground equipment or other property belonging to the university or their use for unsuitable, unsanctioned or improper purposes non-observation of the rules for their rules.
- (19) Students will not be provided with residential facilities for remaining within the university premises during times when the university is closed for students (such time may be subject to periodic changes).
- (20) Any act for which the student could be convicted by a lawfully constituted court of law for an offense against the laws of the republic of Sri Lanka.

## **SECTION II**

### **Punishments**

01. Any student/s found guilty of any offense specified as an act of indiscipline or in subordination in Section (I) above, or of attempting to subvert the provision of this section (Section II – Punishment) may receive one or more of the punishments listed below, as deemed sufficient by the Vice Chancellor acting in accordance with the findings and recommendation of the Disciplinary committee.
  - (1) A caution or severe warning.
  - (2) A fine, not exceeding Rs. 500/-
  - (3) Recovery of any loss sustained by the university.
  - (4) Suspension from classes, examinations and from the use of all university facilities for a specified period.
  - (5) Suspension from sitting for examinations of the university for an unspecified period.
  - (6) Cancellation, postponement or suspension of the release of examination results for an indefinite period.
  - (7) Regard as having relinquished the course and/ or the university.
  - (8) Expulsion from the university (The imposition of any one or more of the above punishments may be suspended. Note that

the punishment for ragging will be expulsion from the university).

02. The Vice Chancellor may impose one or more of the punishments listed in Section II, No. 01 (1) to 97) above without holding any preliminary inquiry, and without obtaining the sanction of any other person, and so as to take immediate effect, if he has reason to believe that the actions or behavior of any students could lead to a break-down of discipline in the university or render difficulty in the normal running of the University or lead to a breach of the peace.
03. Any student disaffected by the imposition upon him of one or more of the punishments listed in Section II No. 01 (1) to 97) may appeal against the punishments to the Vice Chancellor within 14 days of being notified of the same.
04. The determination that the Vice-Chancellor shall make on such appeal, in consultation with the council shall be final.
05. Apart from the imposition of the punishment listed in Section II No. 01 (1) to (8), if a student has been guilty of any offence referred to in Section I, the university reserves for itself the right to review and re-evaluate the conduct of such student/s during his/ their period in the university, before conferring upon him any degree, diploma or certificate.

### **SECTION III**

#### **Interpretation**

01. “University” means here the Sabaragamuwa University of Sri Lanka
02. “Property” means here university buildings, plantations, library, furniture, and equipment, vehicles and all other moveable and immovable property.
03. “He”, “him”, “his, etc., indicate both male and female.
04. The interpretation given to any word, phrase or sentence by the Council will be the final interpretation.

(Subject to revision by the council)

## **Sri Lankan Studies and Current Affairs (AG 1103) (15 hrs)**

Year 1 Semester I

### **Intended Learning Outcomes**

- Understand the important events currently going on in Sri Lanka.
- Assess their impacts for the country.
- Acquire general knowledge to face exams, interviews in a confidence manner.

### **Course Content**

Agricultural development in Sri Lanka, Disaster and disaster management in Sri Lanka, Agricultural research, development and Extension Service in Sri Lanka, Innovations in Sri Lanka, Free education system in Sri Lanka, Free health system in Sri Lanka. Changing Food Habits of Sri Lankans, Environmental Pollution in Sri Lanka, Structure of economy in Sri Lanka, 19<sup>th</sup> Constitutional Amendment in Sri Lanka, Depletion of Forest Cover in Sri Lanka, Problems of use of Agrochemicals in Sri Lanka, Kidney Disease Problem in North Central Province in Sri Lanka. Irrigation Water Management in Sri Lanka, Solid Waste and Waste Water Management in Sri Lanka, E-Waste Management in Sri Lanka, Drug menace in Sri Lanka and how to control it

**Evaluation method:** Assignment: preparation and conducting a presentation.

Exam paper: Part I-20 MCQs and Part II- 4 Structure type questions.

## **World Studies and Current Affairs (AG 1203) (15 hrs)**

Year 1 Semester II

### **Intended Learning Outcomes**

- To study the important issues and events currently going on in the world context.
- To assess their impacts on Sri Lanka
- To acquire knowledge to face exams, interviews in a confidence manner

### **Course Content**

Cricket Game in the World, Nile River in Africa and pollution of Rivers, Galapagos Island and its Biodiversity, Ukraine War and its Impacts for Local and International Level, China and its Economic Development, Climate change, Reasons for it and its Impacts for the world, Ebola Virus and its Impacts,



ISIS terrorists and their aims and objectives, Gm Food and their impacts, Alternative Energy sources, Brain drain and its effects, Soil less agriculture and its impacts, Organic farming and sustainable Development, Agritourism and Rural development

**Evaluation method:** Exam paper 20 MCQs and 4 Structure type questions