

B.Sc. (Agriculture) Degree Programme

Student Handbook

Academic Year 2019/2020

Faculty of Agriculture and Plantation Management Wayamba University of Sri Lanka



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Wayamba University of Sri Lanka

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STUDENT HANDBOOK

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The University Crest



The crest of Wayamba University of Sri Lanka contains six cultural symbols of national significance, namely a lotus, a book, a lamp two sheaves of paddy, a conch shell and a lion with a sword in hand, on top of it.

The lotus which adorns the moon stones of Sri Lanka is an acclaimed symbol of purity and serenity. Above the lotus is a **book** which is a manifest representation of knowledge that leads the University fraternity to an enlightened state of mind, a fact signified by the lamp placed on it with three bright burning flames.

The lamp is designed in such a way as to represent the top most flame in the shape of a conch shell. Form one angel; it looks like a flame, which is symbolical of the light of knowledge. And from another angel, it is a conch shell. What does the conch shell in the crest depict? It is firstly device of communication and secondly it implies fame and repute – an essential aspect in the university context. For Universities, as seats of learning and scholarship are meant to be known to the outside world and its glory should spread far and wide. The combination of the flame of light and the conch shell signifies this particular attribute of university education.

The two sheaves of paddy represent prosperity. Prosperity is an extremely wide term which encompasses many shades of meaning. It may be economic prosperity, to begin with. But it could also encompass in its folds various aspects of prosperity, in a wide sense, namely social, cultural and even scientific and technological prosperity. For prosperity, in this particular context is a term of national significance. There is yet another meaning attached to the two sheaves of paddy since it is identical of the agrarian society which is prevalent in the North Western Province of Sri Lanka.

Though our University is situated in the North Western Province, it is part and parcel of the national system of education. Its identity is significantly national rather than regional or provincial.

The lion at the top of the crest is an articulate expression, that ours is a University of national magnitude. Our University, as any other University of Sri Lanka, is the pride of the nation-a fact the lion on the top of the logo symbolizes.

The University Song

ශී ලංකා වයඹ දිසා සුජාත ධරණි තලේ සුරංජතු සරසවි දිනිති අපේ අරුන්ධතී තරුව ලෙසේ - ලංකා අම්බරයේ

කලිකල් පැරකුම් කිවි නැණ පහනින සුමඟුල් සමිඳුන් සිහිවිරු වදනින හැම කල් රංපිත වයඹ යසෝ රැස උරුමය වේ අපගේ /// තුරුලිය මල්පල සම්පත වොරඳන කෙත්වතු අස්වනු ඉසුරීන් සපුරන නෙක්විදු නැණ දහරීන් දැය පොබයන මෙහෙවර වේ අපගේ ///

In the North West Of this scared island of ours Hails, Our Alma Mater Like the Morning Star In the Sri Lankan skies

Our legacy is the splendor and glory Of the North West Enlightened by the poetic wisdom Of king parakkrama, the sage And the lion – like words of Sumangala, the heroic Thera ශී ලංකා වයඹ දිසා සුජාන ධරණි තලේ සුරංජතු සරසවි දිනිති අපේ අරුන්ධතී තරුව ලෙසේ - ලංකා අම්බරයේ

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With rays of knowledge of many sciences And to burden the trees and fields Of our dear motherland With treasures of bountiful harvest O mother, You who turn the pages for us Of the treatise of the world And who grants us the wisdom of the sages Give us your blessings, To open up the springs of new thinking So that we may tread the path That leads us to a new world. Lyrics by – Dr. W.A. Abeysinghe

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Wayamba University of Sri Lanka

Wayamba University of Sri Lanka was established with effect from 01st October 1999, in terms of the provision of the Section 21 of the Universities Act No. 16 of 1978, for the purpose of providing, promoting and developing higher education in the branches of learning of Agriculture & Plantation Management, Applied Sciences, Business Studies and Finance, Livestock, Fisheries & Nutrition, Medicine and Technology.

There are six faculties in the Wayamba University of Sri Lanka.

- 1. Faculty of Agriculture & Plantation Management
- 2. Faculty of Applied Sciences
- 3. Faculty of Business Studies and Finance
- 4. Faculty of Livestock, Fisheries & Nutrition
- 5. Faculty of Medicine
- 6. Faculty of Technology

Vision and Mission of the University

Vision

To be a centre of excellence in higher education in Sri Lanka.

Mission

To develop human resources to meet the national development needs through innovative educational programmes, research and outreach programmes.

Location

The Wayamba University of Sri Lanka is located at two premises, which are 22 km apart, in the administrative district of Kurunegala in the North Western Province. The main premises, called Kuliyapitiya premises, is 1 km on the Lional Jayathilaka Mawatha off the Kuliyapitiya Madampe Road and houses the administration Complex, and the four Faculties of Applied Sciences, Business Studies & Finance, Medicine and Technology.

The other premises, known as Makandura premises, is at Makandura which is 4 km from Pannala town on the Kurunegala Negombo road and houses the two Faculties; Agriculture & Plantation Management and Livestock Fisheries & Nutrition.

Faculty of Agriculture & Plantation Management

Agricultural education, technology and trade have been prime movers of economic prosperity in the country, where over 60% of the population is directly or indirectly involved in agriculture and related activities. Hence, on-farm and off-farm employment opportunities would improve. Under these circumstances opportunities for skilled jobs in agricultural sector would be in high demand and the employment potential for well-trained skilled personnel would increase. Hence, achieving excellence in agricultural education is the ultimate objective of the faculty. It is expected that the faculty will provide necessary environment to achieve excellence, through development of skills, capabilities, research and outreach programmes among the students and staff. The environment should allow the students as well as the academics, sufficient breathing space for, creativity, intellectual thinking and expression and innovations in agriculture and related areas.

Thus, the faculty has developed some innovative courses, to meet the challenges of rapidly changing agriculture sector in the country. Through identification of the needs of the farmers, public sector and private sector, new courses have been designed to improve links with these parties through in-plant training, field visits, seminars, workshops, surveys and career guidance.

Vision, Mission and Values of the Faculty

Vision:

To achieve excellence in agricultural education, research, technology and training for developing human resources to meet regional, national and global needs.

Mission:

To develop innovative, skilled, trained manpower and their capabilities in Agriculture to fulfill national and global needs through undergraduate and postgraduate education, research and outreach programmes.

Values:

- > Integrity
- Professionalism
- ➢ Equality
- Innovative
- Committed and Effective
- Academic Freedom
- Environment and Social Concern

Departments of Study

The Five Departments of the Faculty of Agriculture & Plantation Management are,

- 1. Agribusiness Management
- 2. Bio-systems Engineering
- 3. Biotechnology
- 4. Horticulture and Landscape Gardening
- 5. Plantation Management

Department of Agribusiness Management

The objective of this specialization programme is to provide a quality education, capable of meeting the career aspirations of graduates and the needs of the local employers. Courses are designed to provide the students an integrated conceptual and empirical framework within which to understand generic areas of agribusiness management and to enhance the students' ability to evaluate practical business experience from a more academic perspective. It will explore the relationships between producers, manufacturers and consumers. It is expected that awareness will be developed of the changing local and international business environment and industrial placements are expected to provide experience on the real basis in which agribusiness operations are organized.

To facilitate these activities the Department operates a specific Centre – "Centre of Agribusiness Studies" (CABS), which is equipped with the ICT facilities.

Department of Bio-systems Engineering

Bio-systems engineering is a field of engineering which integrates engineering science and design with applied biological, environmental and agricultural sciences. Typical programmatic areas include: production of bioenergy; development of biosensors; environmental and ecological engineering; controlled-environment agriculture; food processing and food safety; agricultural engineering (machinery, irrigation, storage), water quality, water quantity, and water recycle (including measurements of microorganisms, chemicals, and other contaminants). The department will support the development of human resources needed in activities in agricultural production systems, agricultural engineering, postharvest technology, waste management, precision agriculture and food technology.

Department of Biotechnology

This specialization programme provides training in specialized areas of biotechnology, meeting the increasing demand for advanced knowledge on plant and animal related molecular biology, tissue culture and modern methods of pests and disease control. The emphasis of the programme will be on the application of new technologies for the improvement of crop and livestock productivity.

Department of Horticulture & Landscape Gardening

Horticulture and Landscape Gardening in general, encompasses the growing of fruits, vegetables for food production and flower and foliage plants to beautify the environment. Features of horticulture include the use of intensive and specialized technologies in production and the use of diversity of the species grown with a wide range of plant species and forms in improving the quality of landscape and environment. Hence, the objectives of the course is to develop the students' ability to understand, use and contribute to the expanding scientific and technological contents of the subject and to make significant contributions towards growing demands of the horticultural sector and landscape gardening in the country.

Department of Plantation Management

The objective of this specialization programme is to provide the graduates with scientific knowledge and practical know-how in agronomic and manufacturing processes in plantation agriculture and inculcate managerial skills and confidence in decision making with respect to resource allocation in plantations. The course will impart skills in agronomy, farm management, business skills, personnel management and elements of accounting. It is expected that the trained graduates will be able to manage the plantation industry, so vital to the economy of the country.

Bachelor of Science Honours in Agriculture Degree Programme

The Degree

The Faculty offers the degree of **Bachelor of Science Honours in Agriculture** [BSc (Hons) (Agriculture)]

Graduate Profile

Agriculture & Plantation Management graduates of the Wayamba University of Sri Lanka will possess satisfactory multi-disciplinary knowledge on the fundamental concepts, principles, practices and technologies relevant to agriculture, plantation management and the field of specialization; Agricultural Economics & Business, Biotechnology, Landscape Horticulture, Postharvest Horticulture, Plantation Resource Management, Plantation Product Development Technology.

They will be able to

- apply this subject knowledge and technological know-how in a holistic manner with innovative management and entrepreneurial perspective to manage agricultural resources and systems and to fulfill the emerging needs of the food production, agribusiness and agro-industry sectors;
- recognize agriculture as a service benefiting the mankind and the environment; and identify the issues, trends and perspectives in agriculture and their impact on national development;
- use enquiry, construct arguments, investigate/ research, critically analyze data, make judgments/ decisions and propose solutions to emerging problems in agriculture, plantation management and allied sectors;
- communicate scientific and other information efficiently and effectively;
- work independently exercising resourcefulness, and collaboratively demonstrating team spirit and professionalism leadership qualities;
- engage in life-long learning and undertake further training to further knowledge and skills;
- behave harmoniously with an appreciation of human and cultural diversity giving due respect for the values of the others, demonstrating professional integrity, ethical behavior and accountability.

Equipped with those attributes they will be ready to work with confidence in academic, research, education and management fields related to agriculture and allied sectors to meet the emerging challenges in the 21st century knowledge based economies.

Course Duration

The duration of the B.Sc. (Agriculture) degree programme at the Wayamba University, is 04 years.

Overview of Programme Structure, Content and Options

An academic year consists of two semesters of 15 weeks each and academic programme is based on course credit system. End semester summative examinations will be held at the end of the semester. In addition, students will also be assessed continuously throughout the semester. Students will be informed about the type and time schedule of continuous assessment by the respective Departments/Units at the beginning of each course unit.

First and second year course units are devoted to teach basic theory and principles core requirements in mathematics, physical and life sciences, humanities, social sciences, communication, information technology and management.

In Year 3, the students can select a specialized area of study from any of the four Departments which will continue through Year 4. The specialization areas offered by each Department are given below.

Department	Area of Specialization				
Agribusiness Management	Agricultural Economics & Business				
Biotechnology	Biotechnology				
Horticulture & Landscape gardening	Horticulture & Landscape Gardening Postharvest Horticulture				
Plantation Management	Plantation Resource Management Plantation Product Development Technology				

In Semester I of Year 4, all students are required to carry out an individual research project and Semester II of Year 4, all students are provided with an opportunity to obtain real-world experience in the form of In-plant training by working in a challenging and stimulating environment in private and public sector organizations related to agriculture.

Programme Structure

In order to qualify for the award of degree the students are required to earn a total of 124 credits which contributes to the final grade (GPA course units) and successful completion of all the courses which are not contributed to final grade (Non-GPA course units). Yearly breakdown of course units is given below:

- Year 1–Thirty (30) credits of GPA course units and eight (8) credits of Non-GPA course units.
- Year 2 –Thirty four (34) credits of GPA course units and four (4) credits of Non-GPA course units.
- Year 3–Thirty five (35) credits of GPA course units and one (1) credits of Non-GPA course units.

• Year 4 –Twenty five (25) credits of GPA course units including Research Project and In-plant training.

In addition, opportunities have been provided in the curriculum to offer the interdepartmental Optional Subjects during the Year 4 Semester I.

Abbreviations and Notations

An alpha numeric code is used to identity a course unit. The code consists of five digits prefixed by a set of two letters which refers to the subject area of the respective Department/Unit. First digit denotes the year at which the course unit is offered and the second digit denotes the semester in which the course unit is offered. The third and fourth digits denote the serial number of assigned for the course unit by the relevant Department/Unit. The last digit denotes the number of credits assigned for GPA course units and when it is 10, sign X has been assigned.

- AB Agribusiness Management
- BT Biotechnology
- HC Horticulture and Landscape Gardening
- PM Plantation Management
- EU English Language Teaching Unit
- CU Information and Communication Technology Center
- CG Career Guidance Unit

Example: AB 21032 is a course unit offered by the Department of Agribusiness Management in the Year 2 Semester I having serial number of course unit 03 and 02 credits.

Course Units Offered in the Study Programme

Core-course units offered in Year 1 and 2

All core-course units in the Year 1 and 2 of the study programme are compulsory.

<u>Year 1</u>

Semester I

Course No	Course Title	Credits	Theory (hr)	Practical (hr)	Independent Learning (hr)
AB 11012	Basic Mathematics	2	30	00	10
AB 11022	Fundamentals of	2	20	20	10
	Management				
BT 11013	Agricultural Chemistry	3	30	30	10
HC 11013	Principles and Practices of	3	30	30	10
	Agronomy				
PM 11012	Principles of Crop	2	20	20	10
	Physiology				
PM 11023	Environment and Forest	3	35	20	10
	Management				
CU 11012	Information and	2*	20	20	10
	Communication				
	Technology				
EU 11012	Academic English I	2*	30	00	00

Semester II

ependent ming (hr)
10
10
05
10
05
10
10
10
00

Course No	Course Title	Credits	Theory (hr)	Practical (hr)	Independent Learning (hr)
AB 21052	Basic Statistics	2	20	20	10
AB 21062	Agricultural Development and Policy	2	20	20	10
BT 21032	Molecular Biology	2	30	00	05
BT 21041	Molecular Laboratory	1	00	30	00
	Techniques				
HC 21033	Principles and	3	30	30	10
	Applications of Plant Breeding				
HC 21042	Grain Legume, Condiment and Oil Crop Production	2	15	30	10
PM 21063	Agriculture Engineering and Farm Machinery	3	30	30	10
PM 21072	Farm Animal Production and Integration	2	20	20	10
EU 21032	Business English I	2*	30	00	10

Semester I

Semester II

Course No	Course Title	Credits	Theory (hr)	Practical (hr)	Independent Learning (hr)
AB 22072	Agricultural Project	2	20	20	10
	Analysis & Management				
BT 22053	Agricultural	3	30	30	10
	Biotechnology				
BT 22061	Industrial Microbiology	1	15	00	00
HC 22053	Principles & Techniques of	3	30	30	10
	Pest Management				
HC 22063	Principles and	3	30	30	10
	Applications of Food				
	Science				
PM 22082	Plant Nutrition and	2	20	20	10
	Fertilizer Management				
CU 22033	Decision Support System	3	15	60	10
EU 22042	Business English II	2*	30	00	10

Specialization course units offered in Year 3

All course units offered in Semester I and Semester II in Year 3 under each specialization stream are compulsory.

Year 3

Specialization areas offered by Department of Agribusiness Management

Agricultural Economics & Business

Semester I

Course No	Course Title	Credits	Theory (hr)	Practical (hr)	Independent Learning (hr)
AB 31093	Quantitative Techniques for	3	30	30	10
	Business				
AB 31102	Financial Accounting	2	20	20	10
AB 31113	Marketing Management	3	30	30	10
AB 31122	Agricultural Production	2	20	20	10
	Economics				
AB 31132	Managerial & Business	2	20	20	10
	Economics				
AB 31142	Resource Planning &	2	20	20	10
	Environmental Management				
AB 31151	Entrepreneurship	1*	15	00	00
	Development				
HC 31072	Horticultural Crop Production	2	20	20	10
PM 31092	Plantation Crop Production	2	20	20	10

Semester II

Course No	Course Title	Credits	Theory (hr)	Practical (hr)	Independent Learning (hr)
AB 32192	Social Science Research	2	20	20	10
AB 32202	Statistics for Social & Behavioral Sciences	2	20	20	10
AB 32212	Human Resource Management	2	20	20	10
AB 32222	Management Information Systems	2	20	20	10
AB 32231	Statistical Quality Control	1	10	10	10
AB 32242	International Economics & Business	2	20	20	10
AB 32252	Environmental & Resource Economics	2	20	20	10
AB 32262	Agricultural Price and Market Analysis	2	20	20	10
AB 32272	Production & Operations Management	2	20	20	10
	•				

Specialization Area Offered by Department of Biotechnology

I. Biotechnology

Semester I

Course No	Course Title	Credits	Theory (hr)	Practical (hr)	Independent Learning (hr)
BT 31073	Biochemistry	3	30	30	05
BT 31083	Genetic Engineering	3	30	30	05
BT 31093	Applications of Plant	3	30	30	10
	Tissue Culture and				
	Commercial Production				
BT 31102	Allergy and Immunology	2	20	20	05
AB 31151	Entrepreneurship	1*	15	00	00
	Development				
AB 31082	Designs & Analysis of	2	20	20	10
	Experiments				
HC 31072	Horticultural Crop	2	20	20	10
	Production				
PM 31092	Plantation Crop	2	20	20	10
	Production				

Semester II

Course No	Course Title	Credits	Theory (hr)	Practical (hr)	Independent Learning (hr)
BT 32112	Environmental	2	20	20	05
	Biotechnology				
BT 32121	Cellular Interactions	1	12	06	00
BT 32133	Molecular Genetics and	3	30	30	05
	Genomes				
BT 32142	Molecular Breeding & QTL	2	20	20	05
BT 32152	Advanced Molecular	2	20	20	00
	Techniques				
BT 32161	Bioinformatics	1	10	10	00
BT 32173	Food Preservation and	3	30	30	05
	Processing				
AB 32202	Statistics for Social &	2	20	20	10
	Behavioral Sciences				
HC 32152	Project proposal and	2	20	20	05
	Scientific Writing				

Specialization Areas Offered by Department of Horticulture and Landscape Gardening

I. Horticulture and Landscape Gardening

Semester I

Course No	Course Title	Credits	Theory (hr)	Practical (hr)	Independent Learning (hr)
HC 31083	Commercial Vegetable	3	30	30	10
	Production				
HC 31093	Commercial Fruit	3	30	30	05
	Production				
HC 31102	Medicinal and Herbal	2	20	20	10
	Plant Production				
HC 31113	Landscape Horticulture	3	30	30	10
HC 31123	Plant Tissue Culture and	3	30	30	05
	Micro Propagation				
AB 31082	Designs & Analysis of	2	20	20	10
	Experiments				
AB 31151	Entrepreneurship	1*	15	00	00
	Development				
PM 31092	Plantation Crop	2	20	20	10
	Production				

Semester II

Course No	Course Title	Credits	Theory (hr)	Practical (hr)	Independent Learning (hr)
HC 32152	Project Proposal	2	20	20	05
	Formulation and Scientific				
	Writing				
HC 32163	Commercial Floriculture	3	30	30	05
HC 32173	Landscape Design	3	15	60	10
HC 32182	Commercial Nursery	2	20	20	05
	Management				
HC 32192	Pest Management in	2	20	20	10
	Horticulture				
HC 32202	Biotechnology for	2	20	20	00
	Horticulture				
HC 32211	Special Topics in	1	15	00	00
	Horticulture				
AB 32202	Statistics for Social &	2	20	20	10
	Behavioral Sciences				

II. Postharvest Horticulture

Semester I

Course No	Course Title	Credits	Theory (hr)	Practical (hr)	Independent Learning (hr)
HC 31083	Commercial Vegetable	3	30	30	10
	Production		• •	• •	-
HC 31093	Commercial Fruit Production	3	30	30	05
HC 31102	Medicinal and Herbal	2	20	20	10
	Plant Production				
HC 31133	Processing and	3	30	30	05
	Preservation of				
	Horticultural Produce				
HC 31143	Postharvest Physiology	3	30	30	05
	and Technology of				
	Horticultural Crops				
AB 31151	Entrepreneurship	1*	15	00	00
	Development				
AB 31082	Designs & Analysis of	2	20	20	10
	Experiments				
PM 31092	Plantation Crop	2	20	20	10
	Production				

Semester II

Course No	Course Title	Credits	Theory (hr)	Practical (hr)	Independent Learning (hr)
HC 32152	Project proposal Formulation and Scientific Writing	2	20	20	05
HC 32163	Commercial Floriculture	3	30	30	05
HC 32223	Postharvest Technology of	3	30	30	10
HC 32232	Food Safety and Quality Assurance	2	15	30	05
HC 32242	Packaging technology of horticultural produce	2	15	30	10
HC 32252	Postharvest Pathology	2	20	20	05
HC 32211	Special Topics in Horticulture	1	15	00	00
AB 32202	Statistics for Social & Behavioral Sciences	2	20	20	10

Specialization Area Offered by Department of Plantation Management

I. Plantation Resource Management

Course No	Course Title	Credits	Theory (hr)	Practical (hr)	Independent Learning (hr)
PM 31102	Tea production and Processing	2	20	20	10
PM 31112	Rubber Production and Processing	2	20	20	10
PM 31122	Coconut &Oil Palm Production and Processing	2	20	20	10
PM 31132	Spice and Beverage Crops Production and Processing	2	20	20	10
PM 31142	Potential Plantation Crops	2	20	20	10
PM 31151	Agroforestry and Cropping	1	15	00	05
PM 31162	Marketing and Quality	2	20	20	10
AB 31151	Entrepreneurship	1*	15	00	00
AB 31082	Development Designs & Analysis of	2	20	20	10
HC 31072	Horticultural Crop Production	2	20	20	10

Semester I

Semester II

Course No	Course Title	Credits	Theory (hr)	Practical (hr)	Independent Learning (hr)
PM 32172	Resource Management in	2	20	20	10
PM 32182	Estate & Financial Management	2	20	20	10
PM 32192	Advance Irrigation	2	20	20	10
PM 32202	Climate Change and Environmental Crop	2	20	20	10
DN/ 20010	Physiology	2	20	20	10
F IVI 32212	Accounting	2	20	20	10
PM 32222	Precision Agriculture	2	20	20	10
AB 32212	Human Resource Management	2	20	20	10
AB 32202	Statistics for Social & Behavioral Sciences	2	20	20	10
HC 32152	Project proposal Formulation and Scientific Writing	2	20	20	05

II. Plantation Product Development Technology

Semester I

Course No	Course Title	Credits	Theory (hr)	Practical (hr)	Independent Learning (hr)
PM 31102	Tea Production and Processing	2	20	20	10
PM 31112	Rubber Production and Processing	2	20	20	10
PM 31122	Coconut & Oil Palm Production and Processing	2	20	20	10
PM 31132	Spice and Beverage Crops Production and processing	2	20	20	10
PM 31142	Potential Plantation Crop Production and Processing	2	20	20	10
PM 31151	Agroforestry and Cropping Systems	1	15	0	05
PM 31162	Marketing and Quality Management	2	20	20	10
AB 31151	Entrepreneurship Development	1*	15	00	00
AB 31082	Designs & Analysis of Experiments	2	20	20	10
HC 31072	Horticultural Crop Production	2	20	20	10

Course No	Course Title	Credits	Theory (hr)	Practical (hr)	Independent Learning (hr)
PM 32232	Cleaner Production	2	20	20	10
	Technology				
PM 32242	Food Safety & Health	2	20	20	10
	Aspects of Plantation				
	Crops				
PM 32252	Factory Machinery and	2	20	20	10
	Energy Management				
PM 32262	Waste Management	2	20	20	10
PM 32272	Value Addition in Tea	2	20	20	10
PM 32282	Rubber Based Product	2	20	20	10
	Development				
PM 32292	Trends in Coconut	2	20	20	10
	Product Development				
AB 32202	Statistics for Social &	2	20	20	10
	Behavioral Sciences				
HC 32152	Project Proposal	2	20	20	05
	Formulation and Scientific				
	Writing				

Specialization Course Units Offered in Year 4

In Semester I of Year 4 students have the option of selecting any two of course units of their choice amounting to 4 credits from the basket of optional course units along with the compulsory subjects offered by respective Department.

Semester II of Year 4 is totally devoted for the In-plant training programme.

The compulsory course units of the respective Departments as given below.

Year 4

I. Agricultural Economics & Business

Semester I

Course No	Course Title	Credits	Theory (hr)	Practical (hr)	Independent Learning (hr)
AB 41322	Business Planning	2	20	20	10
CG 41011	Professional and Employment Skill	1	05	20	10
RP 4100X	Development Research Project	10			

Semester II

Course No	Course Title	Credits
IP 42008	In-plant Training	08

I. Biotechnology

Semester I

Course No	Course Title	Credits	Theory (hr)	Practical (hr)	Independent Learning (hr)
BT 41182	Industrial Biotechnology and	2	20	20	00
	Quality Assurance				
CG 41011	Professional and	1	05	20	10
	Employment Skill				
	Development				
RP 4100X	Research Project	10			

Course No	Course Title	Credits
IP 42008	In-plant Training	08

I. Horticulture and Landscape Gardening

Semester I

Course No	Course Title	Credits	Theory (hr)	Practical (hr)	Independent Learning (hr)
HC 41262	Urban Agriculture and	2	15	30	00
	Edible Landscaping				
CG 41011	Professional and	1	05	20	10
	Employment Skill				
	Development				
RP 4100X	Research Project	10			

Semester II

Course No	Course Title	Credits
IP 42008	In-plant Training	08

II. Postharvest Horticulture

Semester I

Course No	Course Title	Credits	Theory (hr)	Practical (hr)	Independent Learning (hr)
HC 41262	Urban Agriculture and	2	15	30	00
	Edible Landscaping				
CG 41011	Professional and	1	05	20	10
	Employment Skill				
	Development				
RP 4100X	Research Project	10			

Course No	Course Title	Credits
IP 42008	In-plant Training	08

I. Plantation Resource Management

Semester I

Course No	Course Title	Credits	Theory (hr)	Practical (hr)	Independent Learning (hr)
PM 41302	e-Agriculture& MIS	2	20	20	10
CG 41011	Professional and Employment Skill Development	1	05	20	10
RP 4100X	Research Project	10			

Semester II

Course No	Course Title	Credits	Theory (hr)	Practical (hr)	Independent Learning (hr)
IP 42008	In-plant Training	08			

II. Plantation Product Development Technology

Semester I

Course No	Course Title	Credits	Theory (hr)	Practical (hr)	Independent Learning (hr)
PM 41312	e-Solution to Plantation &	2	20	20	10
	Processing				
CG 41011	Professional and	1	05	20	10
	Employment Skill				
	Development				
RP 4100X	Research Project	10			

Course No	Course Title	Credits	Theory (hr)	Practical (hr)	Independent Learning (hr)
IP 42008	In-plant Training	08			

Optional Course Units

Course No	Course Title	Credits	Theory (hr)	Practical (hr)	Independent Learning (hr)
AB 41332	Agricultural Risk	2	30	00	10
	Management				
AB 41342	Computer Based-accounting	2	15	30	10
BT 41192	Molecular Plant Pathology	2	20	20	05
BT 41202	Special Topics in	2	20	20	10
	Biotechnology				
HC 41272	Pollen in Agriculture	2	20	20	10
HC 41282	Commercial Apiculture	2	20	20	05
HC 41292	Application of Biorationals	2	20	20	05
	in Agriculture				
HC 41302	Seed Technology	2	20	20	10
PM 41322	Organic Agriculture	2	20	20	10
PM 41332	Environmental GIS	2	15	30	10
PM 41342	Integrated Farming Systems	2	20	20	10
PM 41352	Land Survey and Leveling	2	20	20	10
PM 41362	Green Technology in	2	30	00	10
	Agriculture				

Note: The availability of optional course units will be announced by the Department of study at the beginning of the semester.

Selection Criteria for Specialization

All students who have completed Year 1 and Year 2 can apply for any of the specializing areas under four Departments. Depending on the number of placements available in each Department, students will be selected for specialization. Selection criteria will be the Cumulative Grade Point Average (CGPA) of Year 1 and Year 2. Those who are not qualified for their 1st preference will be allowed to follow an alternative specialization.

Learning and Teaching Methods

Theory hours allocate for each courses will introduce concepts. Practical sessions including group work and independent learning will foster in-depth understanding of the concepts. Field visits under different course units provide hands-on experience and awareness about the real-world situations. Learning will be encouraged by the use of progressive formative assessments. In-plant training (Training in industries and institutions) will ensure graduates' ability to apply their knowledge appropriately in commercial enterprises, research and educational institutions, or advisory and regulatory agencies. A variety of approaches such as group work involving experiential (problem) based learning, evaluating case studies, presentations, individual tutorials, and undertaking of individual research project will be used to develop intellectual skills, practical and professional skills, communication skill. Different course units offered in the area of English and Information Technology will provide the IT and communication skills.

Medium of Instruction

As the degree programme is of technical and job oriented, the use of an international language will help in acquiring knowledge and enhance the chances of employment, gaining further competence to face challenges of the real world situation. **Therefore, the study programme is conducted and examined in English Medium**.

Attendance

Students are required to attend at least 80% of lectures, tutorials and practical classes. Those who fail to attend classes as required will not be eligible to register and sit for examination.

Examination and Assessment Procedures

Evaluation of Courses:

Credit

A credit is a time based quantitative measure assigned to a course unit and indicates the rating of the unit in working towards a degree. One credit is equivalent to 15 lecture hours or 30 practical hours throughout the semester.

Assessment of Course Units

Courses will be evaluated through both continuous assessments conducted throughout the semester by Assignments, Quizzes, Case studies, Debates, etc., and also through end semester examination consisting of Theory and Practical components mentioned as in the relevant course units. The mode of evaluation for continuous assessment will be communicated to students by the Head of Department/ Course Co-ordinator at the beginning of the semester.

The marks allocated for courses, which include practical component, will be weighted in proportion to the credit distribution of practical and theory in that course.

If a student is failed to obtain the marks for continuous assessment, he/she will be assessed from the marks obtained from the end semester examination only. Repeat students who have not gained marks for continuous assessment will also be assessed only on the end semester examination.

For courses in which practical are assessed by an examination, students obtaining less than 35% marks in either theory or practical will get an E grade even if the average is higher than 40%.

For Non-GPA course units, students should obtain minimum average of 55% of marks (C grade) to fulfil the requirements of the degree of Bachelor of Science Honours in Agriculture.

Assessment of In-plant Training and Research Projects

In-plant Training and Research Project work will be assessed continuously. The examination would be conducted by a panel of examiners appointed by the Faculty Board. This panel

should include at least one person who is not a member of the Faculty. Marks will be allocated on the following basis.

In-plant Training

Diary	40%
Report	30%
Presentation	30%

Research Project

Conduct and performance of the project	40%
Research paper & thesis	30%
Paper presentation at AGRES	30%

Student Portfolio

Students have to maintain records of their academic performances, co-curricular and extracurricular activities carried out during the study programme in the "Student Career Development Portfolio" provided by the Faculty. Students are advised to follow the instruction given in the portfolio booklet.

Scheme of Grading

The grade obtained for each course shall be indicated by a letter as shown below. The cut off marks for each grade and the corresponding grade points are also shown.

For GPA courses a student has to obtain at least a "**D**" grade to be considered to have passed in a course. For Non-GPA courses to pass a course a student has to obtain at least a "**C**" grade.

Marks	Grade	Grade point
<u>></u> 90	A+	4.0
85-89	А	4.0
80-84	А-	3.7
75-79	B+	3.3
70-74	В	3.0
65-69	В-	2.7
60-64	C+	2.3
55-59	С	2.0
50-54	C-	1.7
45-49	D+	1.3
40-44	D	1.0
<40	Ε	0.0

Eligibility for Sitting the Examination

In order to achieve the objectives of each course unit, it is expected that the student will attend all lectures, tutorial classes, practical arranged by the Departments in practice.

Minimum of 80% attendance must be registered by a student in order to be eligible for sitting the relevant papers(s) of each course unit at all examinations. A student who does not record 80% attendance for any course unit will be considered as a referred candidate and he/she should sit the next available examination. The highest grade given in such an attempt will be grade of C, regardless of the grade or marks obtained at the Examination.

Absence from Academic Activities and Examination (As approved by the Senate of the Wayamba University)

(a) If student fails to attend academic activities (i.e. Lectures, tutorial classes, practical session) or examinations due to a medical reason, such absence should be reported to the Senior Assistant Registrar of the Examination Branch by valid Medical Certificate immediately after returning to the Faculty. All Medical Certificates should confirm to the format of a Medical Certificate issued by a Government Hospital and should only be obtained from one of the following medical officers.

University Medical Officer (UMO) District Medical Officer Consultant Specialist in the relevant field Head of Government Base Hospital Government Hospital Ayurvedic Physician registered in the Ayurvedic Medial Council

Under exceptional circumstance Medical Certificates issued by Private Hospitals or private practitioners might be accepted by the University Medical Officer or the medical board.

- (b) Should a student fall ill during an examination session, such illness should immediately be reported to the University Medical Officer at the University Medical Centre. If such illness occurs at residence or elsewhere during an examination session. the student or his/her guardian should inform the Senior Assistant Registrar/Examinations within seven (7) days by a telegram followed by a letter indicating the nature of illness, doctor consulted, name of examination paper of which he is unable to appear, together with the relevant Medical Certificate.
- (c) In the case of a student who, having completed the theory paper is unable to appear for the practical due to a valid medical reason, the results (including the theory paper) will not be released until the practical paper is completed on a later occasion.

Number of Attempts for Sitting Examinations

A student shall not be permitted more than three (03) sittings for the examination of any course unit.

Under no circumstances (i.e. Even with acceptable Medical Certificates), a student be permitted to sit an examination if he/she has completed a period of eight (08) academic years from the date of admission to the University.

Re-sitting of Examination

A student who obtains below "C" grade in a particular course unit may re-sit the examination in respect of the course unit for the purpose of improving the grade on condition that the best grade obtainable is C. If a student obtains a lower grade in attempting to improve the grade of the later attempt, will be entitled to the previous grade obtained on the first attempt.

Grade Point Average (GPA)

Grade Point Average (GPA) is the credit-weighted arithmetic mean of the Grade Point Values. The GPA is calculated by dividing the total credit-weighted Grade Point Value by the total number of credits.

GPA shall be computed to the second decimal place.

For example, a student who completed four course units each of three credits and two course units each of one credits with grades A, B, C, D, E and A respectively would have the following GPA.

$$= \frac{(3 \times 4.0) + (3 \times 3.0) + (3 \times 2.0) + (3 \times 1.0) + (1 \times 0.0) + (1 \times 4.0)}{3 + 3 + 3 + 3 + 1 + 1}$$
$$= \frac{(12) + (9) + (6) + (3) + (0) + (4)}{14}$$
$$= \frac{34}{14}$$
$$= 2.43$$

Final Grade Point Average (FGPA) will be calculated by taking weighted average of GPA of different Years as follows:

The contribution of Year 1 to the FGPA is 20% The contribution of Year 2 to the FGPA is 25% The contribution of Year 3 to the FGPA is 30% The contribution of Year 4 to the FGPA is 25%

Provisions for Re-scrutinization Marks & Grades of Undergraduates

Provisions shall be made for undergraduates to submit requests for verification of their examination marks and grades, if they wish to do so.

The provision requesting re-scrutinization of marks and grade shall be limited only during the two weeks immediately following the results of an examination. An application form issued by the office should be duly filled and forwarded along with a receipt of non-refundable payment, of Rs. 500/= (per a subject) make to the Shroff.

Award of Classes and Degree

Classes will be awarded based on the Final Grade Point Average (FGPA)

First Class

A student may be awarded a First Class provided he/she;

- (i) Obtains a minimum FGPA of 3.70
 - and
- (ii) Completes the relevant requirements within four academic years

Second Class (Upper Division)

A student may be awarded a Second Class (Upper Division) provided he/she;

- (i) Obtains a minimum FGPA of 3.30 and
- (ii) Completes the relevant requirements within four academic years

Second Class (Lower Division)

A student may be awarded a Second Class (Lower Division) provided he/she;

- (i) Obtains a minimum FGPA of 3.00 and
- (ii) Completes the relevant requirements within four academic years

Award of Degree

To be eligible for the Degree of Bachelor of Science (Agriculture), a student must have obtained at least a D grade for each GPA course units and a C grade for each Non-GPA course units he/she studied at the end semester examinations held during the eight (8) year period from the time of registration reaching a minimum FGPA of two (2.00).

Awards

Following awards will be presented at the Annual Convocation.

IPMP Gold Medal

To the most outstanding student who obtains the highest final grade point average (FGPA) in the Faculty of Agriculture & Plantation Management.

Mr. W. Abeynayake Memorial Gold Medal for Agribusiness Management

To the student who obtains the highest final grade point average (FGPA) in the specialization field of Agribusiness Management.

Dr. Dharmawansa Senadhira Memorial Gold Medal

To the student who obtains the highest final grade point average (FGPA) in the specialization field of Biotechnology.

Mr. & Mrs. MBA Jayasekera Memorial Gold Medal

To the student who obtains the highest final grade point average (FGPA) in the specialization field of Horticulture and Landscape Gardening.

Arpico Gold Medal

To the student who obtains the highest final grade point average (FGPA) in the specialization field of Plantation Management.

Commercial Bank award for Plantation Management

To the student with the best all-round performance in Plantation Management.

Heyleys Plantation Gold Medal

To the student with the best performance in plantation crop modules in the Department of Plantation Management.

Dean's Honour List & Faculty Awards

The Faculty of Agriculture and Plantation Management (FAPM), having discussed the necessity of implementing a system for motivating students to achieve their best performance in both academic as well as extracurricular activities, decided to implement the Dean's Honour List and Faculty Awards concept as recommended by the University Grants Commission. This would also pave the way for potential employers to identify the cream of the university graduates for recruitment.

The criteria developed by the Faculty of Agriculture and Plantation Management to identify students to be included in the Dean's Honour List and Faculty Awards consist of both academic and extracurricular activities. Students need to reach threshold levels decided by the faculty for both academic and extracurricular activities to gain entry to the Dean's Honour List and Faculty Awards.

Eligible students will be requested to apply with a self-evaluation form at the commencement of an academic year and also once the final year results are released. Applications will be evaluated by a panel consisting of the Dean, Heads of Departments and the Assistant Registrar. Finally the Dean's Honour List and Faculty Awards will be displayed at the Deans Office.

Contents of the Course Units

Course Title	I	Basic Mathem	atics	Course Code	AB 11012								
	1 Semester I	т	I Credits		Theory (hr)	30							
Year				02	Practical (hr)	00							
		1		Cicuits	Cieuns	cieuns	cieuns	Cieuns	Cleuits	Cieuns	Cleuits	Cieuns	02
						Learning (hr)	10						

Aim of the Course:

To provide students with the basic concepts and theories in Mathematics so that students can apply those skills in real situations.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain the different types of functions and graphs to interpret data
- Solve problems using set theories and perform relevant operations
- Use matrices as a convenient structure for linear equations and inequalities
- Apply differentiation and integration in the functions

• Apply the mathematical skills in real situations

Course Capsule:

Number line: Integers, irrational numbers, rational numbers, natural numbers, prime numbers; Suds, indices and their mathematical operations; Element of set theory notation: Set builder form, Equality of two sets, Disjoint sets, Finite and Infinite sets, Union and intersection of sets, set operations, Venn diagrams; Introduction to Matrix algebra; Introduction to function, Domain, Co-domain and Range of a function, Types of functions and their properties, Graphs of functions, General equation for a straight line, Parabola, Circle; Introduction to calculus: Limits, Differentiation, Integration and their applications.

Mode of Assessment:

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Fundamentals of Management			Course Code	AB 11022			
Year	1 Semest		Ι	Credits	02	Theory (hr)	20	
		Semester				Practical (hr)	20	
		Semester				Independent	10	
						Learning (hr)		

Aim of the Course:

To provide the students with knowledge and skills to achieve desired results through managerial functions of efficient utilization of human and material resources in day-to-day business activities.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain the concepts of management fundamentals and their application in real management situations
- Demonstrate management functions in the real business world
- Display enhanced efficient and effective management decision making skills

Course Capsule:

Introduction: Definitions, Managers, Management roles and activities, Managers and entrepreneurs; Four management functions, Management thoughts and evolution of concepts; Management thoughts and evolution of the concepts: Classical approach, Humanistic approach, Management science approach, Recent historical trends, Strategic Management; Organizational environment: Internal and external environment, Task environment, General environment; Management functions: Planning, Organizing, Leading, Controlling; Leadership; Leadership vs Management, Leadership traits, Power and Influence, Leadership approaches; Communication: Communicating among people, Organizational communication, Managing organizational communication; Human Resources management: Role of human resources management, attracting organizational human resources, developing the organizational workforce, Maintaining the organizational workforce.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Principles of Economics			Course Code	AB 12032			
Year	1	Semester	Π	Credits	02	Theory (hr)	20	
						Practical (hr)	20	
						Independent	10	
						Learning (hr)	10	

Aim of the Course:

To provide a basic understanding of the concepts and theories related to the broad areas of microeconomics and macroeconomics so that students can apply that knowledge to solve real world economic problems rationally.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain the basic concepts of Microeconomics in relation to scarcity, consumer and producer decision making behavior in the economy.
- Explain the basic Macroeconomic terminology and concepts
- Identify and explain the economic role of different entities in the economy.
- Apply the knowledge in understanding and explaining the complex choices those households, businesses, government and markets as a whole make in achieving economic growth

Course Capsule:

Define: Economics and its applications; The Economic problem / Economic Systems; Theory of Consumer Demand - Nature of Demand; Concept of Utility – Equilibrium for a Single Commodity; Indifference Curve, Budget Line and the Equilibrium; Changes to the Consumer Demand; Elasticity of Demand; Theory of Producer Demand - Nature of Supply; The Equilibrium of the Market; The Theory of Firm – Introduction; Factor – Product Relationship; Short Run Cost Functions; Product – product Relationship; Theory of Cost – Introduction; Factor – Factor Relationship; Long Run Cost Functions; Theory of Price – Introduction; Perfectly Competitive Market; Monopoly, Oligopoly and Monopolistic Competition; Use of Microeconomic Theory in Agriculture; Macroeconomic Indicators; Theory of Product Market; Business Cycle; Determination of Aggregate Demand; Theory of Money Market

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Principles of Agricultural Marketing			Course Code	AB 12042		
Year		Semester II				Theory (hr)	20
	1		Credite	02	Practical (hr)	20	
			11	Cicuits	02	Independent	10
						Learning (hr)	

Aim of the Course:

To assist students to get a broad understanding of how markets for agricultural products operate and to make profitable marketing decisions

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Describe key marketing concepts related to agricultural product marketing
- Describe how prices are determined in agricultural products and factors that influence agricultural product prices
- Evaluate different types of public policies on agricultural and food markets
- Describe how commodity markets work

Course Capsule:

Framework of the marketing problem: Introduction to Food Marketing, Analyzing Agricultural and Food Markets, Agricultural Production and Marketing, Food Markets and Institutions: Food processing, manufacturing and consumption, wholesaling and retailing, international food markets; Prices and marketing costs: The Government and food markets: Price Ceilings and their effect, Price Floors and their effect, Taxes / subsidies and their effect, Tariffs and quotas, acreage restrictions and input subsidies and Marketing Programs, Food Marketing Regulations; Commodity marketing

- Continuous Assessment 30 %
- End Semester Examination 70%

Course Title	Basic Statistics			Course Code	AB 21052			
Year	2 Sem		r I	Credits	02	Theory (hr)	20	
		Somostor				Practical (hr)	20	
		Jemester				Independent	10	
						Learning (hr)	10	

Aim of the Course:

To provide students with the basic concepts, theories and principles in Statistics so that they will be able to apply them successfully in the field of natural sciences.

Intended Learning Outcomes:

On the successful completion of the course, students should be able to:

- Compute descriptive statistics including diagrammatic representation and interpretation
- Describe the concept of probability and probability distributions
- Carry out estimation and testing of hypothesis
- Carry out Simple Linear Regression analysis and application
- Interpret statistical output

Course Capsule:

Descriptive Statistics: Numerical methods, Tabulation methods, graphical methods; Introduction to Inferential Statistics: One tail and two tail tests, null and alternative hypothesis, errors and power of test, t-tests; Introduction to analysis of variance, Simple Linear Regression, Correlation.

- Continuous Assessment 30%
- End Semester Examination 70%
| Course
Title | Agrie | cultural Deve
and Policy | elopment
V | Course
Code | AB 21062 | | |
|-----------------|-------|-----------------------------|---------------|----------------|----------|----------------|----|
| | C | 2 Semester | Ι | | | Theory (hr) | 20 |
| Voar | | | | Cradita | 02 | Practical (hr) | 20 |
| Ieal | 2 | | | cicuits | 02 | Independent | 10 |
| | | | | | | Learning (hr) | 10 |

To provide the students with first-hand information needed to understand and critically evaluate the various facets of development of a country, in general, and development of agriculture sector in Sri Lanka, in particular.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain the basic theories of economic development and the contribution of the agriculture sector to the development of the different sectors of the economy.
- Use different measurements and development indicators to assess the socioeconomic development of a country.
- Analyze agricultural policy framework with special reference to land, price, credit, food, marketing and environmental policies.

Course Capsule:

Introduction to Agriculture Development; Development Indicators; Theories of Agriculture Development; Population & Development; Technology & Development; Environment & Development; Research & Development; Human Resource Development; Economics of Food Security; Development Planning; Role of Agriculture in Economic Development; Introduction to Agricultural Policy; Input & Output Price Policy; Credit Policy; Marketing, Food & Nutrition Policy; Land Policy; Environmental Policy; Policy Analysis; Give this in capsule form instead of a list)

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	A Ana	gricultural P lysis & Mana	roject agement	Course Code			
	C	2 Semester	Π			Theory (hr)	20
Voar				Cradita	02	Practical (hr)	20
Teal	~			Credits	02	Independent	10
						Learning (hr)	10

To provide the students with knowledge and skills required for identifying, selecting, analyzing, monitoring and evaluating and reporting with justification of a project, in general, and an agriculture-based project, in particular.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Assess the organizational context for the project with special reference to agriculture-based projects and apply project management principles to workplace initiatives.
- Develop and apply project analysis techniques and management principles for monitoring, controlling and reporting the project progress.
- Prepare a project report for a potential agricultural project comprising of all the important elements for a potential client.

Course Capsule:

Project Definition and Terminology; History of Project Management: An Overview; Project Management (PM) Processes – Introduction; PM Processes – Scope, Schedule, Budget, Quality; PM Processes - Team, Stakeholder, Information, Risk, Contract; Project Life Cycle; Aspects of Project Preparation & Analysis; Feasibility Study; Project Costs and Benefits and Incremental Net Benefit; Measures of Project Worth: Selection & Assessment Criteria; Determining Economic Values of a Project – Economic Efficiency & Social Wellbeing; Measures of Project Worth: Assessment Criteria – Discounted Measures; Present and Future Value of Money; Net Present Value (NPV) & Benefit Cost Ratio (BCR); Internal Rate of Return (IRR); Sensitivity Analysis; Project Resource Planning & Control; Economic Impact Analysis; Environmental and Social Impact Assessments; Environmental Valuation Methods Multi Criteria Analysis; Introduction to Extended Benefit Cost Analysis; Project Management – Trends & Applications by Development Organizations; (Give in capsule form instead of a list)

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Desi	gn and Analy Experiments	sis of	Course code		AB 31082	
	3	Semester	I			Theory (hr)	20
Year				Credits	02	Practical (hr)	20
						Independent Learning (hr)	10

To introduce the student to the principles and methods of statistical analysis of designed experiments

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Lay out some commonly used experimental designs accurately
- Identify the underlying experimental design used for a given set of data
- Analysis using a standard statistical software

Course Capsule:

Basic concepts: definitions, treatment, factors, plots, blocks, precision, efficiency, replication, randomization and design; Completely randomized design, fixed and random effects, contrasts, ANOVA table; Blocking, orthogonal designs: randomized complete block designs, Latin square designs, extensions of the Latin square design; Non-orthogonal designs: balanced incomplete block designs; Factorial designs, general factorial experiment, fixed and random effects, interactions; Some special designs: analysis of covariance, nested designs and split plot design; Factorial experiments, confounding, fractional replication, aliasing; Introduction to response surface designs.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Quar	ntitative Techn Business	iques for	Course Code	AB 31093		
						Theory (hr) Practical (hr)	30 30
Year	3	Semester	Ι	Credits	03	Independent Learning (hr)	10

Students will be able to analyze relevant data using contemporary computer-based technology and apply the results to make decisions concerning the specific question or problem in business world.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Use the essential tools of applied statistics, including data analysis, basic probability, probability models (distributions)
- Apply the concepts and statistical techniques used to analyze business data
- Apply statistical methodology properly in their future academic and professional careers
- Apply quantitative analysis to the problems found in managing a business, government, or non-profit organization, whether production or service oriented
- Apply independent problem-solving skills to everyday tasks in business world

Course Capsule:

Basic concepts: definitions, treatment, factors, plots, blocks, precision, efficiency, replication, randomization and design; Completely randomized design, Randomized Complete Block Design, Lattin Square Design; Probability distribution: binomial, poisson & hyper geometric distribution, normal, uniform & exponential distribution; Introduction to econometrics, maximum likelihood estimator, BLUE estimator; Binary data analysis: binary logistic model, ordered logistic model, nominal logistic model; Introduction to time series analysis : basic component of time series data, smoothing techniques: moving average, exponential smoothing, ARMA and ARIMA Models, criteria for time series model selection; Index numbers: simple aggregative index, Laspeyre's price index, Paasche's price index, construction of indices; Analysis using a statistical software.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Fi	nancial Accou	unting	Course Code		AB 31102	
		3 Semester	т			Theory (hr)	20
Voar	3			Cradite	02	Practical (hr)	20
Ieal	5		1	Cicuits	02	Independent	10
						Learning (hr)	10

This module will route into gain fundamental accounting skills for a management, profession or other role. Student will gain an understanding of how financial statements are prepared and develop the skills to prepare financial statements. Further the students will explore differences in financial accounting for different businesses, building an understanding of the frameworks underpinning accounting practice.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Identify, classify, measure and summarize the elements of financial statements through applying accounting principles and concepts
- Explain and interpret the purpose, form and content of the three main financial statements; income statement, balance sheet and cash flow statement
- Interpret financial ratios to make financially sound decisions
- Identify partnership accounts and their features

Course Capsule:

Introduction to accounting; fundamental; analyzing; Adjusting entries; Trial balance; Manufacturing account; Trading, profit and loss account; Balance sheet; Cash flow statement; Cash budget; Financial ratios; Partnership accounts.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Mai	rketing Mana	agement	Course Code		AB 31113		
		3 Semester	Т		03	Theory (hr)	30	
Year	З			Credits		Practical (hr)	30	
icui	0			cicuits	00	Independent	10	
						Learning (hr)	10	

To introduce students to concepts of marketing management to enable them to apply these concepts in a decision making framework.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Describe marketing concepts and its importance in profit oriented and non- profit oriented firms
- Develop market strategies and plans
- Demonstrate the ability to conduct market research
- Develop strategies to connect with customers
- Identify the procedures in market segments and target markets
- Describe a range of common strategies for use with each of the various marketing mix tools: product, pricing, promotion, and distribution

Course Capsule:

Scope of marketing; Core marketing concepts; Developing marketing strategies and plans; Market information and forecasting demand; Conducting market research; Analyzing consumer and business markets; Analyzing business markets and buyer behavior; Identifying market segments and target markets; Using marketing mix elements in planning marketing activities; Development of new products and services.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Pro	Agricultura oduction Ecor	al nomics	Course Code		AB 31122	
			-			Theory (hr)	20
•	2					Practical (hr)	20
Year	3	Semester	1	Credits	02	Independent Learning (hr)	10

To provide students with a basic understanding on all areas of production economics and give them a hands on experience in production modeling.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Demonstrate the understanding of key concepts in production economics including production, cost and profit functions
- Demonstrate the ability to estimate a simple production function using standard math programming software and simulation models
- Demonstrate the ability specifically tools for decision making under risk and uncertainty situation in agricultural production

Course Capsule:

Introduction to agricultural production economics; Profit maximization under various input and output criteria (factor-product, factor-factor, production-product relationships); Cost functions: properties and application; Duality of cost and production functions; Cobb-Douglas and other production functions: properties; Returns to scale, elasticity of substitution; Linear programming and marginal analysis; Production under risk and uncertainty: theory and applications.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Mar	nagerial and H Economics	3usiness s	Course Code			
		3 Semester	т		02	Theory (hr)	20
Vear	3			Credits		Practical (hr)	20
Tear	5		1	cicuits		Independent	10
						Learning (hr)	10

To introduce students to economic issues and decision-making tools in a firm.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain the nature and scope of managerial economics
- Apply the knowledge of demand analysis in firm decision making
- Use the concepts of production and cost in firm in decision making process
- Compare and contrast the different types of market structures and economic systems
- Explain the strategic behavior of firms in the market place
- Explain different pricing practices carried out by firms

Course Capsule:

Introduction to managerial economics; Optimization techniques: (univariate & multivariate optimization), consumption & demand (axioms of traditional consumer theory, indifference curves, consumption decisions and demand); Production, costs & supply: (economic analysis of production, cost functions); Market structure & performance outcomes: (monopoly, price discrimination and welfare, monopolistic competition models of oligopoly: cournot, price leadership); Market structure, firm strategy & performance: (introduction to game theory, empirical evidence on SCP paradigm and concentration - profitability); Analysis of firm strategy: (product differentiation advertising barriers to entry, pricing practices, risk analysis).

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Env	Resource Plan ironmental Ma	ning & anagement	Course Code		AB 31142	
			I			Theory (hr)	20
Year	3	Semester		Credits	02	Practical (hr)	20
						Independent Learning (hr)	10

To develop skills and knowledge of the students for translating the theory and concepts of resource planning and environmental management into practice to solve prominent issues in this area with a greater impact on communities and workplaces today.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Describe the key theoretical aspects pertaining to resource planning and environment management on different flows (energy, water, and resources/waste) within the built, urban, rural, agricultural and natural environments
- Analyze and discuss the main social, cultural, economic and environmental opportunities and problems relating to natural resource utilization at range of scales
- Evaluate the appropriateness of various monitoring and environmental management tools used by resource and environmental practitioners to be used in the local conditions
- Critically evaluate the existing policies, strategies, actions, methods and tools/ techniques for their effectiveness towards resource planning and environmental management

Course Capsule:

Resource planning and environmental management: concepts and importance; Sustainable development: environmental assessment and analysis; Land resource planning and management; Integrated water resource management: coastal and marine resource management; Waste management, energy resource planning and management; Climate change impacts, adaptation and mitigation, disaster and risk management; Urban planning tools and their application to environmental and resource planning; Role of social and ethical dimensions in environment and resource planning; Use of remote sensing and GIS for environmental analysis and planning.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title]	Entrepreneurs Developme	ship nt	Course Code	AB 31151		
		3 Semester	Ι			Theory (hr)	15
Voar	3			Cradits	01*	Practical (hr)	00
rear	5			Creatts	01	Independent	00
						Learning (hr)	00

*Non-GPA Course Unit

Aim of the Course:

To provide in-depth knowledge, skills and develop entrepreneurial competencies among the graduates and they will be able to demonstrate entrepreneurial behaviors that will bring in results in discharging their duties as well as motivate them to engage in their own businesses.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Enlightened on the term Entrepreneurship, Entrepreneurship characteristics
- Self-evaluation of entrepreneurship characteristics
- Use of entrepreneurship in business undertaking
- Generate and screening of business idea
- Select Micro & Macro process
- analysis of the business environment (SWOT analysis)
- Select best business ideas
- Match Business with the Person
- Preparation of a Business Plan, Marketing plan, Production plan Organization and management plan, Financial Plan, Viability test
- Evaluate a Business
- Develop a new product through technology commercialization

Course Capsule:

Definitions of entrepreneurship, History and Entrepreneurship, evolution of entrepreneurship, Entrepreneurship characteristics, Self-evaluation of entrepreneurship, identify strong and weak characteristics, ways to improve weak areas, entrepreneurship in business undertaking, Business idea generation, Business idea screening, Macro and micro selection, SWOT analysis, Select best business ideas, Business match making, , match Business with the Personal Background, Attitude, Education. Health and wealth, Preparation of a Business Plan (Marketing plan, Production plan, Organization and management plan, Financial Plan, Viability test, Business undertaking, Business Evaluation, Business financing Businesses registration, taxation and International Trade, international trade agreements and business opportunities, innovations and technology commercialization.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title]	Agricultur Entrepreneur	al ship	Course Code		AB 31162		
		3 Semester	Ι		02	Theory (hr)	20	
Vear	3			Cradita		Practical (hr)	20	
Tear	0			Cicuits		Independent	10	
						Learning (hr)	10	

To enable students to develop their skills to address various challenges in creating and managing a new venture with the knowledge of entrepreneurship concepts and theories.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Evaluate business opportunities
- Interpret the stages of new venture creation process
- Explain how to transform creative ideas into commercial opportunities
- Develop a business plan for an agribusiness start-up
- Demonstrate forming of business

Course Capsule:

Introduction: definitions, agricultural entrepreneurship and economic development, evolution of entrepreneurship; Entrepreneurial mindset: entrepreneurial individual, entrepreneurship traits and characteristics, classification of entrepreneurs, myths, tools for entrepreneurs, entrepreneurship and innovation; Opportunity and opportunity recognition process: environment analysis, sustainable competitive advantage, five forces model, feasibility analysis; Innovation management: definitions of innovation, types of innovation, sources of innovations, creativity, developing creativity; Feasibility analysis: business concept, market analysis, product/service development plan, financial analysis; Venture planning: marketing plan, organizational plan, finance plan, financial plan, risks; Formation of business: forms of businesses, process of business registration, legal environment; Corporate entrepreneurship: importance, policies and priorities in corporate entrepreneurship.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	С	onsumer Beh	avior	Course Code		AB 31172	
		3 Semester	Ι		02	Theory (hr)	20
Voor	2			Cradite		Practical (hr)	20
Teal	5			Cicuits		Independent	10
						Learning (hr)	10

To enable students to understand theoretical concepts related to consumer behaviour and apply the knowledge to make decisions on related marketing issues.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain the current psychological, sociological and anthropological theories that provide insight into consumer behavior
- Describe theoretical concepts are relevant to a particular decision-making context and demonstrate clearly how these principles apply, and provide responses that are supported with evidence
- Apply theory to address real world marketing problems

Course Capsule:

Introduction to consumer behavior; Exposure, attention and perception; Consumer attitudes; Memory and retrieval; Problem recognition and decision making; Consumer's diversity; Social class and household influences; Values, personality and lifestyles; Marketing communications; Consumer behavior and innovations; Ethics and social responsibility issues.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Fin	ancial Manag	gement	Course Code		AB 31182		
		3 Semester	т			Theory (hr)	20	
Vear	3			Credits	02	Practical (hr)	20	
ICal	0		1	cicuits	02	Independent	10	
						Learning (hr)	10	

To enable students to recommend relevant options for financing a business, recognise and manage financial risks and make appropriate investment decisions.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Identify capital requirements of businesses and assess financing options
- Identify the financial risks facing a business and the principal methods of managing those risks
- Apply appropriate investment appraisal techniques and calculate the value of shares and businesses

Course Capsule:

An overview of financial management; Financial markets and institutions; Financial statements; Cash flow and taxes; Analysis of financial statements; Time value of money; Risk and rates of return; The cost of capital; The basics of capital budgeting; Cash flow estimation and risk analysis; Distributions to shareholders: dividends and share repurchases; Working capital management; Financial planning and forecasting.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Re	Social Science search Methoc	ce lology	Course Code			
			II	Credits		Theory (hr)	20
Year	3	3 Semester			02	Practical (hr)	20
						Independent Learning (hr)	10

To introduce students to a range of methods with which social scientists work as they attempt to systematically understand social phenomena. It provides firsthand experience with the specific procedures through which social science knowledge is developed with special attention to the interactions between theory and research, general procedures and epistemological issues, as well as concrete research philosophies and techniques.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Use the principles and applications of social science research
- Identify economic research problems relevant to the academic discipline
- Develop research proposals with all required components for advanced studies
- Apply theoretical and empirical methodologies to carry out an applied research
- Appreciate and practice research ethics
- Communicate the progress and outcomes of a research to relevant stakeholders

Course Capsule:

Nature of empirical social research and research paradigms; Planning a research project: process and control; Review of literature; Qualitative and quantitative research methods for collection and analysis of data; Academic writing styles and writing up of social research; Research communication, holding grants and maintaining research culture.

- Compilation of Research Proposal (3 peer reviewed intermediate submissions (10 marks x 3) + Final copy in acceptable standard format (30 marks) 60%
- End of Semester Examination 40%

Course Title	St B	atistics for So Sehavioral Scie	cial & ences	Course Code			
	3 Semester					Theory (hr)	20
24						Practical (hr)	20
Year		11	Credits	02	Independent Learning (hr)	10	

To conceptually understand the use of different statistical methods for statistical inference, apply these methods to real world problems and draw valid conclusions.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Use the correct definitions and applications of statistical concepts and methods used in behavioral and social science research
- Use correct applications of the research methods, designs, and procedures
- Identify the appropriate statistical analyses for given research questions and sets of data
- Analyze statistically and explain/ interpret the results

Course Capsule:

Statistics as applied to the behavioral and social sciences: introduces basic terminology and measurement scales associated with basic statistics used in behavioral and social research; Data collection methods for qualitative and quantitative methods; Designing of a survey; Probability and non-probability sampling techniques, sample size calculation questionnaire construction; Categorical data analysis techniques: goodness of fit test, two way and multi-way contingency table; Non parametric data analysis techniques: Wilcoxon's rank sum test, Mann Whitney test/Wilcoxon's rank sum test, Sign test, Kruskal – Wallis test, Friedman test, Spearman rank correlation; Multivariate data analysis techniques; Multiple linear regression, cluster analysis, discriminant analysis, principle component analysis.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title		Human Reso Manageme	urce nt	Course Code			
	3	3 Semester	Π			Theory (hr)	20
Voar				Cradita	02	Practical (hr)	20
Tear	5			Cicuits	02	Independent	10
						Learning (hr)	10

To provide a balanced exposure to contemporary theories and best practices in Human Resource Management, enabling students to gain professional recognition and progress through their career in complex and rapidly changing organizational environments.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain the concepts of human resource management and its implications for human resource policies, planning and practice
- Demonstrate the ability to solve human resource issues in real world business situations
- Apply human resource management concepts and skills across a variety of professional contexts and situations

Course Capsule:

Introduction to HRM; Human and social capital concepts; Human resource planning; Job evaluation and analysis; Recruitment and selection; Compensation management; Financial and non-financial incentives; Training and development; Performance management; Grievance handling; Theories of motivation; Leadership; Team management; Communication in organizations.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Mar	nagement Info System	rmation	Course Code			
Year	3	3 Semester	II			Theory (hr)	20
				Credits	02	Practical (hr)	20
						Independent Learning (hr)	10

To provide students knowledge about Management Information Systems; show the information systems that support business process and the purpose of managing the organization in a better way and capturing the potential of the information system for competitive advantage in the business world.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Describe the integrative knowledge of information technologies (IT) applied for management in organizations
- Describe the role of information system manager
- Demonstrate IT skills and knowledge related to management principles, techniques and IT tools essential system in the business environment
- Describe how modern IT is shaping the operations of modern business environment
- Analyze information security risk and prepare a information security plan
- Demonstrate an understanding in the role of agribusiness professional with sophisticated understanding of trends and issues related to information systems, including how to align information systems with business goals, and the more technical aspects of information systems management

Course Capsule:

Introduction to MIS, MIS in managerial work, Components of Management Information System, Data management, Communication in MIS, IT in business processes related to agriculture, Information security, MIS Agribusiness, Applications of MIS

- Continuous Assessment 30%
- End semester Examination 70%

Course Title	Stati	stical Quality	Control	Course Code	AB 32231		
	3	3 Semester	Π		01	Theory (hr)	10
Vear				Credits		Practical (hr)	10
Teal	5					Independent	10
						Learning (hr)	10

The course emphasizes the philosophy and fundamentals of quality control, the statistics foundations of quality control, acceptance sampling, and product and process design.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Describe the philosophy and basic concepts of quality improvement
- Demonstrate the ability to design, use, and interpret control charts for variables
- Demonstrate the ability to design, use, and interpret control charts for attributes
- Analyze process capability and measurement system capability
- Describe the sampling plans for different situations

Course Capsule:

Introduction to statistical quality control and quality system, Basic quality tools, Statistical Process Control using Variable charts; X bar, S, R and MA charts. Attribute Charts; P, NP, C, U charts. Operating characteristic curve, Introduction to Acceptance Sampling Plans Capability and Reliability analysis using capability & performance indices. Practical exercises using MINITAB

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Inte	ernational Ecc and Busine	onomics ss	Course Code	AB 32242		
	3	3 Semester	Π		02	Theory (hr)	20
Voor				Credits		Practical (hr)	20
Tear						Independent	10
						Learning (hr)	10

To provide the students with knowledge and skills required to understand how to deal with firms doing international businesses.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Describe key facts relating to international trade
- Explain the concepts of trade theories
- Evaluate the effects of international trade and of international trade policies on economic welfare and domestic goods and factor markets.
- Explain how foreign exchange is determined and its effect on agricultural trade
- Explain the foreign direct investment and multinational companies in the world
- economy

Course Capsule:

International trade and its importance and trade pattern of Sri Lanka; International trade theory (classical theory of comparative advantage, comparative advantage with two factors of production, comparative advantage and factor endowment: Heckscher – Ohlin Theorem, other theories of sources of comparative advantage national competitive advantage (Porter's diamond), trade theory and business), partial equilibrium analysis of international trade; International trade policies and institutions (effect of trade restrictions (tariffs and non-tariff barriers) and domestic support policies on trade, multilateral trade negotiations, economic integration); International monetary and financial issues (foreign exchange markets and exchange rate, exchange rates and agricultural trade, relationship between prices and exchange rates, effect of exchange rates on business), entering international markets (purposes of expanding into global markets, entry strategies, exporting, importing, licensing, franchising, wholly owned subsidiaries, strategic alliances), analyzing international business decisions.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	R	Environmenta esource Econo	al & omics	Course Code	AB 32252		
	3	3 Semester	Π		02	Theory (hr)	20
Voar				Cradits		Practical (hr)	20
Teal	5			Cicuits		Independent	10
						Learning (hr)	10

To enable students to examine, from an economic perspective, the principle issues concerning the use and exploitation of environment and natural resources, including land, marine, water, agricultural, forestry and fisheries, and to apply appropriate methods and tools to analyze the perceived economic problems in those areas to come up with alternative policy recommendations.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain the key theoretical aspects pertaining to resource use and exploitation in the areas of land, marine, water, agricultural, forestry and fisheries
- Apply relevant tools and economic analysis to identified key problems associated with resource use and exploitation in order to evaluate their non-market outcomes and to design policy instruments
- Describe potential relationships between local, regional, and global aspects of natural and environmental problems, with special reference to climate change and tourism
- Apply simple environmental valuation exercises to evaluate an issue pertaining to environmental and natural resource management

Course Capsule:

Evolution of economic thought / theories on ERE; Economics of market allocation and failures; Capture and utilization of natural resources; Economics of renewable resources (forests, fisheries);Economics of non-renewable resources (coal, natural gas, oil);Welfare economics : fundamental concepts, introduction to bio-economics; Economics of biodiversity: water resources, waste management, sustainable agriculture, sustainable tourism, global climate change; Measurement and valuation of environmental impacts; Environmental policy instruments and policy analysis.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Ag	gricultural Pri Market Anal	ce and ysis	Course Code	AB 32262		
		3 Semester	Π			Theory (hr)	20
Voor	2			Cradita	02	Practical (hr)	20
Tear	3			Cleuits	02	Independent	10
						Learning (hr)	10

To enable students to analyse economic data and obtain meaningful, compelling economic insights based on the data to other economists and non-economists.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Empirically estimate demand and supply functions
- Empirically obtain trends in price movements and explain the economic implications of such movements
- Forecast prices using statistical models
- Critically evaluate government intervention in agricultural prices using empirical evidence

Course Capsule:

Review of supply and demand functions; Index numbers; Review of simple regression technique; Price movements: trends, review of multiple regression technique; Price movements: seasonality; Demand for agricultural products: theory & estimation; Supply for agricultural products: theory & estimation, price determination, marketing margins, forecasting, multi-commodity models, government intervention & agricultural prices.

- Continuous Assessment 30%
 - End Semester Examination 70%

Course Title	Proc	duction & Op Manageme	erations nt	Course Code		AB 32272	
	3					Theory (hr)	20
Year		3 Semester	II	Credits	02	Practical (hr)	20
						Independent Learning (hr)	10

To provide students a strong base on principles of production and operations management with a better understanding about the role of operations management in organizations in order to identify and eliminate operations related issues in real world situations.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain the role of operations management in manufacturing and service related agri-businesses
- Identify problems in forecasting, production planning, inventory control, quality control, and reliability
- Apply solution procedures developed in the area of operations management to solve real world issues

Course Capsule:

Operations and productivity; Forecasting; Project management; Design of goods and services; Quality management; Location strategies; Layout strategies; Human resource strategies; Supply chain management; Inventory management; Material requirements planning; Scheduling; JIT and lean operations; Maintenance and reliability.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Int	ernational Mar	keting	Course Code		AB 32282		
						Theory (hr)	20	
Vear	3	Semester	п	Credits	02	Practical (hr)	20	
Tear	5	5 Semester	11	cicuits	02	Independent	10	
						Learning (hr)	10	

To provide students a comprehensive knowledge about marketing across the national frontiers to identify and analyze the market opportunities with better understanding of theories and practices of international marketing to solve business problems in foreign markets.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Analyze the business environment in a foreign country at both the micro and macro levels
- Develop appropriate market entry strategies for different international markets
- Develop appropriate international marketing plans
- Identify importance of international marketing in international businesses
- Identify opportunities in international markets

Course Capsule:

Introduction to international marketing; Country selection and entry strategies; Global trade and integration; Markets and segmentation in an international context; International positioning; Market research in the international environment; International product and brand marketing; International product standardization and adaptation; International pricing; International finance and pricing implications; International marketing channel management; International distribution: exporting and retailing; Globally integrated marketing communications; International sales promotions and public relations; International personal selling and sales management; International marketing planning; Organization and control.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Fina	nce for Agrib	ousiness	Course Code			
		3 Semester	п			Theory (hr)	20
Voar	2			Cradits	02	Practical (hr)	20
Tear	5		11	Cicuits	02	Independent	10
						Learning (hr)	10

To provide the students with knowledge and skills to achieve desired results using potential agriculture financing sources

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain the significance of agriculture finance in economic development
- Demonstrate functions with relate to finance in agribusinesses
- Describe financing sources for agricultural investments
- Demonstrate the activities with relate to funding process
- Display efficient and effective funds application in short and long-term investments to create value to maximize financial benefits

Course Capsule:

Introduction: agriculture in Sri Lanka, role of agriculture in the economic development, problems faced by the agricultural sector, need of the conversion from traditional agriculture to agribusiness, financing; agriculture finance; Definitions: need of finance, microfinance and agriculture finance Vs corporate finance, need of financial intermediation, constrains for individual approach, group base approach, rights of microfinance financing sources, borrowers, unethical practices of microfinance industry, future trends; agricultural credit market: Sources of agricultural credit (formal and informal), role of NGOs' and specialized institutions in agricultural lending, cooperative financing, corporate financing, securities, collaterals and sureties; agribusiness financial management: Information flows and financial management, key ratios for financial management, working capital management, short term and long-term financing, formulating credit proposal and testing economic feasibility, capital budgeting and investment analysis, inflation, risk and financial planning, break-even analysis, cost benefit analysis, time value of money, cost of capital; Alternative financing sources: contract farming, leasing, hire-purchases Contemporary issues in agriculture credit: government role in agricultural financing, special agriculture credit schemes, revolving credit schemes

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Agı	ri-food Supply Manageme	v Chain nt	Course Code	AB 32302		
	3	Semester	II		02	Theory (hr)	20
Vear				Credits		Practical (hr)	20
Ieai					02	Independent	10
						Learning (hr)	10

To provide an introduction to the concept of Supply Chain Management and an understanding of the methods, techniques, practices and strategies involved in the integrated management of supply chains.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Describe the importance of supply change management in the food industry
- Evaluate different strategies of supply chain management
- Discuss implications of alliances in supply chains

Course Capsule:

Introduction to supply chain management; Food chain systems functions; Supply chain management strategy and global food supply chain management strategy; Major trends in supply chain management and supply chain management in the non-manufacturing sector; Risk management in the supply chain; Topical issues in supply chain management.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Macro	Business Law peconomic Env	and vironment	Course Code			
Year			II			Theory (hr)	20
	3	3 Semester		Credits	02	Practical (hr)	20
						Independent	10
						Learning (hr)	10

To give an understanding of the key areas of commercial law and offering students an opportunity to apply the studied areas in industrial environment.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Narrate the basic rules, regulations, act and principles of business law
- Differentiate between common law and statutory law
- Specify the legal issues related with the industrial environment and describe the remedies and necessary steps to overcome the particular issues

Course Capsule:

Law of contract; Law of agency; Law of partnerships; Law of sales of goods; Law of bills of exchange; The legal system of Sri Lanka; Sources of law; The court system and tribunals in Sri Lanka; Labour law; Environment law; Intellectual property; Tax law; Law of hire purchase agreement; Insurance; Consumer protection; International trade law.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Business Planning		Course Code	AB 41322			
	4 Semester					Theory (hr)	20
						Practical (hr)	20
Year		Ι	Credits	02	Independent Learning(hr)	10	

To develop a comprehensive Business Plan with all the required parts for an identified/hypothetical agribusiness firm.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain the importance and use of each and every part of a Business Plan, individually and collectively
- Prepare each part of a Business Plan accurately by utilizing information in hand
- Write an executive summary for a Business Plan
- Develop the Business Plan to an acceptable/standard format to the client (i.e. bank, potential investor, marketer etc.)

Course Capsule:

Major parts of a business plan-including the executive summary; Company description: ownership, legal status, products/services, industry structure; Target market: geographic location, market size, customers, market trends; Competitive analysis: types and specific competitors, competitive positions, competitive edge, barriers to entry, and potential future competitions; Marketing and sales plan: marketing message, vehicles, strategies, sales team; Operations plan: key operations elements, operational advantages & challenges; Management structure: key team members, staffing structure, future management needs, board members, advisors, and consultants; Development plan: long term goals, future milestones, assess the risks; Financials: income statement, cash-flow projection, balance sheet etc.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Agricultural Risk Management			Course Code	AB 41332		
		4 Semester	Ι			Theory (hr)	30
Voar	4			Credita	02	Practical (hr)	00
Ital				Cleans	02	Independent	10
						Learning (hr)	10

To help students to appreciate marketing and price risks in agriculture and how they can be managed

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Describe key areas of risks involved in agriculture
- Measure price risks and forecast prices
- Evaluate tools available for managing price and marketing risks
- Demonstrate the use of tools in decision analysis

Course Capsule:

The Nature of Agricultural Risks: production risks, policy risks, marketing risks (structural and price); Fundamentals of price risk: uncertainty vs risk, measuring price risk, fundamentals of price forecasting; Risk management tools for price risk: Forward contracts, Futures contracts, options contracts, swap contracts; Decision analysis: decision trees and payoff tables; Risk and mathematical programming

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Computer Based Accounting			Course Code	AB 41342		
		4 Semester	Ι	Cradita	02	Theory (hr)	15
Voor	4					Practical (hr)	30
Icai	т			Cicuits		Independent	10
						Learning (hr)	10

To provide students with hands on experience of codifying accounts appropriately and entering transactions into the accounting system through various modules so that students can apply those skills in real situations.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Create charts of accounts in order to structure the accounting process.
- Accounts code appropriately and enter transactions into the accounting system.
- Personalize the accounting systems to suit the information needs of different types of organizations

Course Capsule:

Types of accounting software, file system, software packages (QuickBooks), features of the QuickBooks accounting package, creating a company [entering company information; selecting a method to create company, selecting accounting periods], Setting up general ledger structure [numbering accounts, entering or modifying accounts, setting up bank accounts, entering beginning balances], Setting up customer and supplier records [account codes; customer records; entering balances], Planning a stock system [set up and maintain price levels, entering inventory items] Sales order processing [entering sales orders & invoices, editing, deleting sales order and sales invoice], Purchase order processing, General journal and banking tasks, Running various reports [accessing & modifying reports, copying a QB report to excel, financial statements, forms, business analysis].

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Agricultural Chemistry			Course Code	BT 11013		
	1 Semester		т			Theory (hr)	30
Voor		Comochan		Carlin	02	Practical (hr)	30
rear		1	Credits	03	Independent Learning (hr)	10	

To provide students with basic principles, concepts and theories of chemistry so that the students will be able to apply the acquired knowledge in agriculture and plantation production and processing systems.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Describe the fundamentals of chemistry including structure, reactivity and properties of chemical substances and the states of matter
- Identify, analyze and interpret the problems in agriculture and allied industries using the theoretical knowledge and analytical skills of chemistry.
- Describe and apply the knowledge of the importance of agrochemicals as part of the global solution to maximize the production of food.

Course Capsule:

Matter and its properties; Units and measurements; Atomic structure/ Periodic table and properties; Molecular and ionic equations (Stoichiometry); Chemical bonding/Chemical reactions; Chemical Kinetics/Rate laws, Chemical equilibrium and equilibrium constants; Importance of Agrochemicals / pesticide formulation: Qualitative and quantitative analysis, Fundamentals of instrument analysis.

- Continuous Assessment -30%
- End Semester Examination 70%

Course Title	Cell and Biomolecules			Course Code	BT 12022		
		1 Semester	Π			Theory (hr)	20
Vear	1			Credite	02	Practical (hr)	20
Ital	1			Cicuits	02	Independent	05
						Learning (hr)	05

To provide students with the basic concepts and techniques of cells and biomolecules so that students can broaden the knowledge in life sciences.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Illustrate the basic structure of cell
- Describe the basic structure & function of sub-cellular organelles
- Explain the Cell cycle
- Describe the biological importance of biomolecules
- Describe the basic structure & functions of biomolecules and their detection
- Demonstrate the techniques involve in studying macromolecules

Course Capsule:

Concepts of Cell: Cell as the basic unit of life; Cell structure and Function; Cell Organelles: Structure and functions of Cell Organelles; Cell membranes and Cellular transportation; Cell Cycle: Events of Cell Cycle; Introduction to Nucleotides and Nucleic acids: Structure & information storage; Introduction to Proteins: Structures, Functions & Identification; Introduction to Carbohydrates: Monosaccharides, Glycosidic bond, Disaccharides, polysaccharides and complex carbohydrates; Introduction to Lipids: Structures, Steroids, eicosanoids, phospholipids

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Molecular Biology			Course Code	BT 21032		
		2 Semester	Ι			Theory (hr)	30
Voar	2			Credite	02	Practical (hr)	00
Ital	2			cicuits	02	Independent	05
						Learning (hr)	05

To provide the basic knowledge on molecular biology focusing on genomic structure and function of both Prokaryotes and Eukaryotes so that students will be equipped with foundations in molecular mechanisms for molecular applications.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Describe differences between prokaryotic and eukaryotic genomes
- Explain structure and function of gene
- Describe the vectors used for molecular cloning
- Explain the plasmid as an extra chromosomal genetic elements
- Demonstrate the molecular mechanism of replication, transcription and translation
- Describe the basics of immunology

Course Capsule:

Genome Anatomy: Prokaryotic and Eukaryotic Genomes; DNA Packaging: Nucleosomes and Chromatin; Genes and Chromosomes: Gene Structure, Chromosomes; Molecular Gene Concept; Gene and Protein; Vectors: Plasmids, Viruses and Phages; Molecular Mechanisms of DNA: DNA Replication, DNA Damage and Repair, DNA Recombination; Gene Expression: Transcription, Translation and Post Translation Modification; Basics of Immunology: Over View of Immune System, Antigen-Antibody Reaction

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Mo	olecular Labo Technique	ratory s	Course Code		BT 21041	
			т			Theory (hr)	00
Vari	2				01	Practical (hr)	30
Year	2 Semester		1	Credits	01	Independent Learning (hr)	00

To equip students with the basic laboratory skills of Molecular Biology, so that students gain an experience in basic Biotechnological laboratory techniques.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- State the basic rules and the safety procedures in a Molecular Biology laboratory
- Demonstrate the handling of different tools, techniques and instruments used in Molecular Biology

Course Capsule:

Laboratory Safety Procedures; Equipment used in a Molecular Biology Laboratory; Handling of Micropipettes; Spectrophotometry; Centrifugation; Preparation of Stock solutions; Serial Dilution; Genomic DNA extraction (plant); Plasmid DNA extraction; Agarose gel electrophoresis; Quality and Quantity assays of DNA; Polyacrylamide gel electrophoresis; DNA transfer techniques; Ag-Ab interactions (Blood grouping).

- Continuous Assessment- 30%
- End Semester Examination 70%

Course Title	Agric	cultural Biote	chnology	Course Code	BT 22053		
		2 Semester	п		03	Theory (hr)	30
Vear	2			Cradits		Practical (hr)	30
Ital	~		11	cicuits		Independent	10
						Learning (hr)	10

To provide knowledge on application aspects of biotechnology with some laboratory skills so that students can propose suitable solution when a related problem arises.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Describe the importance of biotechnology and different areas of biotechnology experienced in life science
- Explain the concepts of recombinant DNA technology (rDNA) and its' applications in industries and library constructions
- Describe the principles and applications of DNA typing technology in Life science
- Critically evaluate the beneficial and adverse effects of GM plant production and comment on the importance of patenting aspects of GM products and considerations of Biosafety
- Explain the importance of bioprospecting and conservation of genetic resources
- Explain the fundamentals of plant tissue culture used in micropropagation of agricultural crops and the application aspects of plant and animal tissue culture techniques.
- Identify selected laboratory equipment and demonstrate their handling procedures

Course Capsule:

Overview and scope of Biotechnology; Recombinant DNA technology and industrial applications; cDNA and gDNA Libraries and their uses as information storage; PCR technology and applications of PCR; DNA typing technology and applications, Gene transformation methods into plants; Transgenic principle and Genetically modified organisms; Gene and biodiversity conservation; Bioprospecting; Bio-safety, Introduction to Bioinformatics; Patenting aspects of Biotechnology; Basics of plant tissue culture: Laboratory designing and media preparation; regeneration of tissue cultured plantlets and culture systems; micropropagation cycle; Applications of plant tissue culture, Applications of animal tissue culture.

- Continuous Assessment- 30%
- End Semester Examination 70%

Course Title	Ind	ustrial Micro	biology	Course Code			
		2 Semester	П		01	Theory (hr)	15
Vear	C			Cradita		Practical (hr)	00
Itai	-			cicuits		Independent	00
						Learning (hr)	00

To provide students with the knowledge on applications of microbiology in industrial production of food & feed, pharmaceutical, industrial chemical, energy, fertilizer and bio treatment of contaminated environment so that they can explain the role of microorganisms in industry and abatement of environmental pollution.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Describe the milestones in development of industrial microbiology
- Explain growth, nutrition and metabolism of industrial microbes
- Describe the use of microorganisms in different industries: food and feed, pharmaceutical, industrial, energy, agriculture and waste management
- Describe & analyze the commercial production process of selected microbial products

Course Capsule:

Introduction to industrial biotechnology, Growth, nutrition and metabolism of industrial microbes, Industrial microorganisms and strain improvement, Major industrial processes and products: food, Feed, Microbial enzymes, Pharmaceuticals, Food additives and supplements, Bio fuel and industrial chemicals, Bio-based polymers and biodegradable plastics, Bio fertilizers and bio-pesticides, Environmental Biotechnology: use of microorganisms in abatement of environmental pollution

- Continuous Assessment- 30%
- End Semester Examination 70%

Course Title	Biochemistry			Course Code	BT 31073		
			т	Cradita	03	Theory (hr)	30
Year	3	Somostor				Practical (hr)	30
	5	Joeniestei	1	Cicuits	05	Independent	05
						Learning(hr)	05

To provide students with basic principles, concepts and theories of enzyme kinetics, and biochemical pathways and metabolic regulation so that the students will be able to apply the acquired knowledge to explain biochemical pathways and their regulation in biological systems.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain the role of enzymes in metabolic pathways and regulation
- Describe the metabolic pathways inside a cell and explain the metabolic integration of biomolecules
- Explain the role of hormone in communication between cells to regulate metabolism
- Describe the role of vitamins in metabolism
- Apply the knowledge of enzyme kinetics, metabolism pathways, hormones and vitamins to solve problems related to metabolism

Course Capsule:

Enzymes and enzyme kinetics ; Protein separation by column chromatography; SDS-PAGE and Specific protein detection by Western Blot; Protein sequencing and structure prediction; Flow of energy in universe ; glycolysis , TCA Cycle & biological oxidation, Gluconeogenesis , Glycogen metabolism, regulation of CHO metabolism; pentose phosphate pathway, lipoproteins , lipid metabolism, amino acid metabolism, nucleic acid metabolism, hormone regulation of metabolism (hormone – receptor concept) , metabolic integration , role of vitamins in metabolism.

- Continuous Assessment- 30%
- End Semester Examination 70%
| Course
Title | G | enetic Engine | ering | Course
Code | | BT 31083 | |
|-----------------|---|---------------|-------|----------------|----|----------------|----|
| | | 3 Semester | Ι | Cradita | | Theory(hr) | 30 |
| Vear | 3 | | | | 03 | Practical (hr) | 30 |
| icai | | | | Cicuits | 05 | Independent | 05 |
| | | | | | | Learning (hr) | 05 |

To provide students with the knowledge and skills on the safe use of recombinant technology to address the issues of agriculture and industries.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain the principles and methods used in production of genetically modified organism
- Demonstrate the techniques involving in gene manipulation
- Demonstrate the *Agrobacterium* mediated gene transfer techniques
- List the major transformed trait in commercialized GMOs and explain the strategies to derive them.
- Explain the use of recombinant DNA technology in therapeutic application and in recombinant vaccines
- Explain the processes of genetically engineered protein production
- Explain the use of GMOs in environmental protection
- Critically evaluate the ethical, legal, social and safety issues in using recombinant DNA technology

Course Capsule:

Transformed traits in GMOs; Importance and potentials of GMOs in global economy; Basic DNA techniques; Host cells and vectors; Enzymes in genetic engineering; Gene libraries and screening. Gene transformation methods; Genetically engineered protein production and recombinant DNA vaccines; Gene therapy; GMOs in environmental protection, Gene tagging and insertional mutagenesis, Transgenic plant production underlying strategies of expression of novel traits in GMOs; Ethical, legal, social and intellectual property issues of GMOs; Transgenic animal and cloning; Biosafety regulations and policy

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Applications of Plant Tissue Culture and Commercial Production			Course Code	BT 31093		
	3	Semester	т			Theory (hr)	30
Voar				Cradita	03	Practical (hr)	30
ICal			1	cicuits	05	Independent	10
						Learning (hr)	10

To provide knowledge and skills on plant tissue culture so that the student can use them in commercial production and plant improvement

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Describe the concept of totipotency and principles of plant regeneration
- Design (paper based) a plant tissue culture laboratory emphasizing low cost options to minimize the cost
- Formulate media for specific tissue cultural requirements with different hormonal combinations and demonstrate the procedure of media preparation
- Explain different tissue culture regeneration systems and their applications
- Demonstrate shoot/nodal, leaf and embryo culturing, and stages in micropropagation
- Establish in vitro cultures of selected herbaceous plants and multiply them aseptically for mass propagation of planting materials and programing the production process
- Apply plant tissue culture techniques that are used to improve characteristics of crop species, conservation purpose and industrial metabolite production

Course Capsule:

Concept of totipotency and historical achievements; Designing of the laboratory; Laboratory equipment and business plan for a commercial laboratory; Tissue culture media components and media preparations; Different explant materials; Aseptic procedures; Different tissue culture regeneration systems; Micro propagation of commercially important plants, protocols and production programming; Shipping procedures of micro propagated plants; Low cost option for domestic tissue culture; Applications of plant tissue culture in crop improvement: embryo rescue, *In vitro* mutagenesis, Dihaploid production via anther culture, protoplast culture, genetically engineered plant production, *in vitro* conservation and artificial seed production, cell culture systems and secondary metabolite production.

- Continuous Assessment- 30%
- End Semester Examination 70%

Course Title	Alle	ergy and Imm	unology	Course Code		BT 31102		
	3	3 Semester	Ι			Theory (hr)	20	
Voar				Cradita	02	Practical (hr)	20	
Ical				cicuits	02	Independent	05	
						Learning (hr)	05	

To provide students with a sound understanding of the concepts and mechanism in the field of immunology with some emphasis on allergy so that students will be able to apply immunological principles in disease diagnostics & other clinical application.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Describe and explain the fundamental principles of immunology
- Describe basics of immune system and immunological processes in an organism
- Explain the immune mechanisms involved in allergic disease
- Describe and discuss the diagnostic tests available for the detection of allergy
- Apply commonly used immunological techniques for diagnosis of diseases in crops and animals

Course Capsules:

Cells: organs and tissues of the immune system; Antigen and soluble molecules of the immune system: innate immunity and acquired immunity, generation of antibody diversity, monoclonal antibody production; Co-simulation and T cell activation: effective immune response, allergens and allergic inflammation; Allergic diseases and their underlying immune processes: vaccines and vaccine production; Applications of immunological techniques in disease diagnosis.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title		Environmenta Biotechnolog	al y	Course Code		BT 32112	
	2	3 Semester	Π			Theory (hr)	20
Vear				Credite	02	Practical (hr)	20
Teal	5			cicuits	02	Independent	05
						Learning (hr)	05

To provide students with the knowledge on fundamentals and applications of biotreatment for contaminated environments so that they can suggest potential solutions for specific environmental problems with respect to pollution.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Describe the ecological and health risk generated by major groups of environmental contaminants
- Determine and analyze biotreatment/bioremediation techniques for contaminated air, water and soil environments
- Analyze a location with respect to environmental pollution and suggest potential solutions
- Describe bioindicators of environmental stress and techniques to determine bioindicators

Course Capsule:

Introduction to environmental pollution and role of biotechnology; Microbial metabolic pathways relevant to environmental biotechnology; Microbial reactors and biofilm processes for biotreatment; Biotreatment of water environment: wastewater biotreatment: activated sludge process, anaerobic digestion, biotreatment of surface water, bioremediation of contaminated ground water, biotreatment of landfill leachate; Bioremediation for air environment: biofiltration, biotrickling filtration, bioscrubbers; Bioremediation for soil environment: phytoremediation, biological treatment technologies for metals remediation, solid waste management; Bioindication for assessment of environmental stress: principles and definitions of bioindication, characteristics of bioindicators, techniques to assess bioindicators; Case study on industrial pollution

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	С	ellular Interac	ctions	Course Code	BT 32121		
			п			Theory (hr)	12
Vear	З	Semester		Cradite	01	Practical (hr)	06
Tear	5	5 Semester		Cicuits	01	Independent	00
						Learning (hr)	00

To provide knowledge in cellular processes so that they can apply the knowledge in plant and animal improvement.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain the principles of signal transduction pathways and their applications in crop and animal improvement
- Explain the plant responses to various stress factors at cellular level and their applications in crop improvement
- Describe cell cycle control system and its biomedical applications
- Describe the differences between plant and animal embryogenesis

Course Capsule:

Cell cycle regulation (checkpoints): cell cycle regulation in biomedical applications, apoptosis, cell to cell signaling and signal transduction, applications of cell signaling in plants and animals; Stress physiology of cells: applications of stress physiological aspects in plant improvement; Transition from vegetative into reproductive phase, embryology and plant and animal development.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	М	olecular Gene Genomes	etics &	Course Code			
	3		п	Cradita		Theory (hr)	30
Vear		3 Semester			03	Practical (hr)	30
Teal			11	cicuits	05	Independent	05
						Learning(hr)	05

To provide students with the knowledge on organization, function of genetic elements and gene regulation in organism.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain the main function and behavior of DNA molecules
- Explain the structural genomic aspects using model organisms; Lambda Bacteriophage, *Escherichia coli, Sachaaromyces cerevisiae, Drosophila melanogaster* and *Arabidposis thaliana*.
- Explain molecular aspects of eukaryotic gene expression and regulation.
- Describe genome projects and their implications to the science and society for safe use of the biotechnology
- Describe the Principles of 'omics' sciences
- Construct the genetic maps based on the linkage and recombination

Course Capsule:

Eukaryotic DNA replication; DNA repair; DNA denaturation and renaturation; molecular genetics of bacteria & bacteriophages, yeast, drosophila and higher plant; Mitochondrial and chloroplast genomes; Transposable elements; Eukaryotic gene expression and regulation, epigenetic mechanisms; Techniques used in omic sciences; Genome projects-Organization and objective; Introduction of structural and functional genomics; SNPs and Variation; Principles of gene expression and transcriptomics; Principles of Proteomics and functional genomics; Principles of Integrative Genomics; Gene mapping and genetic maps.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Mole	ecular Breedin	ıg& QTL	Course Code	BT 32142		
	3	3 Semester	Π			Theory (hr)	20
Vear				Credits	02	Practical (hr)	20
ICal	5			cicuits	02	Independent	05
						Learning (hr)	05

To provide students with the knowledge and skills for using molecular tools, so that students will be able to apply them in crop improvement.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain the underlying principles of genetic variation shown by polymorphisms in DNA markers
- Demonstrate the DNA techniques
- Explain the applications of molecular markers in genetic and plant breeding
- Describe the use of marker assisted selection in crop improvement

Course Capsules:

Conventional breeding methods: partition of variation, heritability and heterosis, conventional breeding methods; Genetic markers; Applications of genetic markers: construction of linkage maps, comparative genome mapping, map-based cloning, DNA fingerprinting, analysis of genetic diversity, molecular phylogenetics; Marker assisted selection: marker assisted selection for simply inherited traits, marker assisted selection for QTL, detection of QTL; bulked sergeant analysis, selective genotyping, marker assisted backcrossing, DNA bar coding.

- Continuous Assessments 30%
- End Semester Examination 70%

Course Title	Ad	vanced Molec Techniques	cular	Course Code	BT 32152		
		3 Semester	Π			Theory (hr)	20
Voar	2			Cradits	02	Practical (hr)	20
Teal	5			cicuits	02	Independent	00
						Learning (hr)	00

To equip students with advanced techniques in Molecular Biology so that the students get experience and apply the techniques in Molecular Biology.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain the working principle/s of instruments used in Biotechnology
- Explain the handling/operation, maintenance and application instances of different techniques and instruments used in Biotechnology

Course Capsule:

Advanced Molecular Techniques: DNA separation and purification (Poly acrylamide Gel Electrophoresis/Column purification), radio and non-radio labeling of biomolecules, advanced PCR Techniques, DNA sequencing techniques, gene transformation techniques: electroporation, gene gun/particle bombardment; Protein purification techniques: SDS-Page, Gas chromatography, HPLC other chromatography; mass spectroscopy

- Continuous Assessments 30%
- End Semester Examination 70%

Course Title		Bioinformatic	S	Course Code	BT 32161		
		3 Semester	Π			Theory (hr)	10
Year	3			Credits	01	Practical (hr)	10
Ical	0			cicuits	01	Independent	00
						Learning (hr)	00

To introduce students to the new field of bioinformatics (computational biology) and know the modern computational practices which could be used to apply their skills to analyze the biological data and information.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Use the theoretical knowledge of bioinformatics
- Use database for literature relating to molecular biology and biotechnology using search engines and other internet tools
- Query biological data, interpret and model biological information and apply to solve problem in the biological system
- Manipulate the DNA and protein sequences using algorithms available on online
- Analyze homologous sequences, align and interpret evolutionary trees
- Analyze protein sequences, identify protein and retrieve protein structures from databases
- Interpret protein structure, modeling and computational drug design

Course Capsule:

Basic concepts of bioinformatics; Gene prediction and comparative genomics; Searching biological information using search engines; Biological databases: (DNA, Protein and others) GenBank, Entrez, OMIM, PDB; Browsing Genes and Genomes with Ensembl; Sequence analysis and pairwise alignment; Sequence queries using bioinformatics tools:BLAST; databases; Multiple sequence alignment: ClustalW, phylogenetic trees and profiles; Sequence motif discovery in multiple alignments; construction of phylogenetic trees; Predicting protein structure and function from sequence; Functional genomics and proteomics; Course summary.

- Continuous Assessments 30%
- End Semester Examination 70%

Course Title	Foc	od Preservatio Processing	on and g	Course Code	BT 32173		
			Π			Theory (hr)	30
Voor	3	Somostor		Cradita	03	Practical (hr)	30
Iear	5	5 Semester		Cleuits	03	Independent	05
						Learning (hr)	05

To provide students with the understanding of science underlying the processing technologies of food products and equip them with knowledge and skills required for development of novel and high quality processed food products.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Describe the principles of food preservation related to food product development
- Explain the processes and technologies appropriate for processing of fruits, vegetables, cereals and fish food products.
- Explain the uses of microbial sources and related additives in food product development.
- Describe the principles involved in packaging of bio-products.
- Design and demonstrate the steps of developing a processed food product from selected raw material.
- Apply proper food safety and sanitary aspects in food industry

Course Capsule:

Principles of food deterioration, preservation and processing, Manufacturing processes: unit operations, blanching, dehydration, freeze-drying and concentration, refrigeration and freezing, thermal processing, canning, pickling, preservation by addition of chemicals, fermentation, juice processing, deep frying technology, crystallization and candying, irradiation, high-pressure, microwave processing. Advantages and disadvantages of different preservation methods; Fruits and vegetable product processing technology with case studies; Fish product technology with case studies, Cereal product technology with case studies, Spice product technology with case studies, Microbial sources of food enzymes and ingredients, Starter cultures as inoculants of fermentation processes, GM starter cultures, Enzyme immobilization and bio-catalytic process in food and beverages, Active food ingredients and encapsulation, Branding, Minimal Processing, Packaging of bio products, Food safety and sanitary aspects.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Indus Ç	strial Biotech Quality Assur	nology & ance	Course Code	BT 41182		
		4 Semester	Ι			Theory (hr)	20
Vear	4			Credits	02	Practical (hr)	20
icai	Ĩ			cicuits	02	Independent	00
						Learning (hr)	00

To provide the knowledge on applications of Biotechnology in the commercial production of food, drugs, energy at a higher safety and quality standards for reducing the environmental pollution.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain the principles and methods used in the commercial production of microbial and plant metabolites
- Apply principles and methods used in the commercial production of microbial enzymes used in food and bio-industries
- Explain the use of microbes and microbial enzymes in food industry
- Apply the principles and methods used in the microbial transformation of molecules of industrial importance
- Explain appropriate technologies for the isolation and extraction of selected natural products
- Demonstrate the procedures of assessing quality parameters to assure the product quality
- Describe the production and use of bio-fertilizer, bio-pesticides and bio-energy to reduce the environmental contamination

Course Capsule:

Introduction to Industrial Biotechnology: chronological development of industrial biotechnology, tools and techniques of industrial biotechnology; Biotechnology in different industries: fermented foods and brewery, enzymes, single cell proteins and organic acids, amino acids, vitamins and other pharmaceuticals, biofertilizer, biopesticides, biofuel, bioethanol and biopolymers; Fermentation Technology: basic function of fermenters, types of bioreactors, recovery and purification of fermented products, use of immobilized enzymes in fermentation technology using genetically modified organisms; Natural products, isolation and extraction of selected natural products, value addition of the natural products; Quality assurance: international quality standards, quality assurance parameters of industrial products.

- Continuous Assessments 30%
- End Semester Examination 70%

Course Title	Mole	ecular Plant Pa	athology	Course Code		BT 41192		
	1		т	Cradita		Theory (hr)	20	
Vear		4 Semester			02	Practical (hr)	20	
Tear	Т		1	Cicuits	02	Independent	05	
						Learning (hr)	05	

To provide students with the knowledge on plant-pathogen interaction at molecular level so that they can describe common plant pathogen in the field and suggest appropriate molecular diagnostic techniques to identify plant diseases.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Describe the structure and classification of plant pathogens based onmolecular aspects
- Describe molecular aspects relevant to pathogenicity, infection and development of plant diseases
- Describe molecular diagnostic techniques of plant diseases
- Identify & describe common plant diseases in the field and apply selected molecular techniques for diagnosis
- Describe mechanisms of disease resistance in plants

Course Capsule:

Introduction to plant pathology: concept of disease, significance, history and causal agents of plant diseases; Fungal and bacterial diseases: molecular aspects in pathogenicity and disease development, host specificity, common fungal and bacterial diseases; Plant viruses: structure and replication, transmission and interactions with plants, genomic variation of plant viruses, common viral diseases; Other plant pathogens: mycoplasma like organisms(MLO), nematodes; Molecular diagnostics of plant diseases: serological tests (ELISA), pathogen-specific markers, hybridization, PCR based and gene-array based techniques, resistance mechanisms in plants: concept of resistance, programmed and induced defenses, resistance genes.

- Continuous Assessment- 30%
- End Semester Examination 70%

Course Title		Special Topics i Biotechnology	n	Course Code		BT 41202		
				Cradita		Theory (hr)	20	
Voar	4	Semester	т		02	Practical (hr)	20	
Icai	т		1	Cicuits	02	Independent	10	
						Learning (hr)	10	

To provide students with knowledge on emerging fields related to biotechnology so that they can apply the knowledge for innovations in agriculture and biological sciences.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- explain bioprospecting and IPR policies within the context of local and international laws
- explain the rights of equitable benefit sharing among the users and holders of indigenous knowledge and genetic resources
- describe the fundamentals of nanotechnology
- explain techniques and processes of nanotechnology
- discuss the application of nanotechnology in major scientific fields
- compare present Sri Lankan scenario of nanobiotechnology with that of the world
- demonstrate the technology applied in producing selected nanoparticles

Course Capsule:

Bio prospecting: Genetic resources, breeder's right/ Farmers right and plant variety protection, Synthetic Biology, IPR policies and Biosafety poly in Sri Lanka; Nanobiotechnology: General concepts in nanotechnology, Biomaterials vs Nano structures, Nanoscience; Application of Nanobiotechnology: Application in chemical, pharmaceutical, microbial cell factories and bio-industries; The future of nanobiotechnology: Challengers and social impact, Present status of nanobiotechnology in Sri Lanka; Practical aspects of Nanobiotechnology: Harnessing the knowledge on nanobiotechnology at the real platform of Nanotechnological institute, Starch nanoparticle preparation, Slow releasing nano-fertilizer

- Continuous assessment 30%
- End Semester Examination 70%

Course Title	Prin	ciples and Pra Agronomy	ctices of	Course Code			
			Ι			Theory (hr)	30
Year	1	Semester		Credite	03	Practical (hr)	30
icai				cicuits	05	Independent	10
						Learning (hr)	10

To provide students with a thorough knowledge on the fundamental concepts, principles and technologies in the practices of crop production and agronomy so that productivity of the agriculture sector will be increased while maintaining the sustainability.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Describe importance of traditional knowledge in agriculture, its scientific basis and use it in designing cropping systems.
- Explain the agro-ecological zones, regions and cultivated crops in each zone and their farming situations and systems.
- Select suitable crops and regions for cropping systems according to the prevailing agro climate.
- Discuss the crop growth factors, explain their role in crop production and use them for efficient management of crops to achieve sustainable crop production.
- Describe the methods of land preparation and select appropriate land preparation practices for different crops and cropping systems to maximize crop production.
- Explain the importance of using quality planting materials in crop production and demonstrate different sexual and asexual plant propagation methods.
- Describe different crop establishment methods considering their effect on crop growth and productivity and select appropriate crop establishment methods for given crops and cropping systems.
- Plan a sustainable crop management programme for a given cropping system considering the principles of sustainable crop management.
- Describe the basics of postharvest handling of crops and reduction of postharvest losses.

Course Capsule:

Introduction to agriculture: Historical background, Centers of origin of cultivated plants, Crop categories and classification; Agro-climatology: Importance and role of climate and environment in agriculture, Climatic zones and agro ecological regions; Cropping Systems: Scientific basis of designing cropping systems, Monocropping and Multiple cropping systems, Integrated farming systems; Crop growth factors: Importance of Crop growth factors for the crop development and production, Selection of crops according to the land use pattern and the presence of crop growth factors; Land use in agriculture: Land use classification, Selection of crops according to the availability of crop growth factors and land use patterns; Land preparation: Primary and secondary land preparation, Importance and use of different methods of Land preparation; Planting Material Production: Asexual and sexual plant propagation, importance of using quality planting materials in crop production; Crop establishment: Different methods, direct seeding and transplanting, nursery and seed bed preparation; Crop management: Principles of crop management, Nutrient and soil fertility Management, Water management and irrigation, Crop protection and pest management, Preparation of a crop management programme; Post harvest management: Harvesting, processing and storage of crop products.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Cerea	al, Root and Tu Productior	ıber Crop 1	Course Code		HC 12023	
					Theory(hr)	30	
	_					Practical (hr)	30
Year	1	Semester	11	Credits	03	Independent Learning (hr)	10

To provide students with the basic understanding of the present status and agronomy of cereals, root and tuber crops and to expose students to cultural and production practices so that they will be able to manage those crops for optimum productivity.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain present status, economic importance, national production and constraints to production of cereals, root and tuber crops in the Sri Lankan context.
- Describe the ecological requirements of cereals, root and tuber crops for their maximum productivity.
- Identify the important botanical and morphological characters of cereal crop plants.
- Describe the appropriate cultivation technologies for rice, other cereal crops, and root and tuber crops.
- Explain the morpho-physiological basis of yield variation and the ways to manipulate yield components in cereals to maximize yields.
- Describe the physiology of tuber formation.
- Describe the methods of pre- and post- harvest pest and disease management of cereals, root and tuber crops.
- Cultivate and manage cereal crops using relevant agronomic practices to ensure a quality harvest.
- Analyze problems and suggest possible solutions related to the agronomic practices and field performance of given cereals, root and tuber crops.

Course Capsule:

Introduction to field crops: global production, extents and yields; importance and industrial use; Cereals: importance, ecological requirements, national production and constraints for the production of rice, maize, sorghum and millets, Botanical and morphological features of rice, maize, sorghum, and millets, varieties of cereal crops, crop management practices in rice, maize, sorghum and millets, yields, physiological basis of yield and their importance in traditional and modern farming systems, yield variations and manipulation of yield components, establishment and management of paddy nurseries, field establishment and crop management of rice, maize, sorghum and millets, pests and diseases management in cereal crops. Root and tuber crops: Present status, economic importance, constraints of root and tuber crops, ecological requirements, national production, physiology of tuber formation, establishment and management practices of selected root and tuber crops.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Aj	Principles a oplications of Breeding	nd Plant	Course Code			
	2		1			Theory(hr)	30
Voar		Somostor		Credits	03	Practical (hr)	30
Teal		2 Semester	1	cicuits	05	Independent	10
						Learning (hr)	10

To provide the students with knowledge on Mendelian, Quantitative and population genetics and plant breeding methods so that students can use it for conservation and maintenance of plant genetic resources, and to use them in plant breeding and crop improvement programmes

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Describe the principles of Mendelian, Quantitative and population genetics used in crop improvement
- Explain the plant breeding methods
- Describe the use of wild and cultivated plant species in breeding
- Explain the use of gene banks in conservation of plant genetic resources'
- Explain the importance of plant variety protection and plant breeders' rights
- Identify and apply suitable plant breeding methods for common legumes, cereals and field crops

Course Capsule:

Introduction to theories of evolution; Mendalian genetics; Quantitative and population genetics; Inbreeding and heritability; Correlated characters; Heterosis, Introduction to cytogenetics, chromosome aberrations; Gene interactions; Types of reproduction; Basic concepts of breeding; hybridization; Breeding methods for self-pollinated crops; Breeding methods for cross pollinated crops; Breeding methods for vegetatively propagated crops; Breeding methods for plantation crops; Mutation breeding; varietal development; testing and recommendation procedures; varietal adaptability testing; seed certification; Breeders' seed production and seed production procedure; Role of gene bank and germplasm conservation; Germplasm collection and characterization; Germplasm evaluation; storage and utilization; Agrobiodiversity; Role of genetic engineering and biotechnology in plant breeding; protection of new varieties; plant breeders' right.

- Continuous Assessments 30%
- End Semester Examination 70%

Course Title	Grain and	n Legume, Co Oil Crop Pro	ndiment duction	Course Code		HC 21042		
	2		Ι			Theory(hr)	15	
Voor		Somostor		Credits	02	Practical (hr)	30	
Teal		2 Semester			02	Independent	10	
						Learning (hr)	10	

To provide students with the basic understanding of the present status and agronomy of grain legumes, condiments and oil crops, and to expose students to cultural and production practices so that they will be able to manage those crops for optimum productivity.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain present status, economic importance and constraints in grain legumes, oil crops and condiments production in the Sri Lankan context.
- Identify the important botanical and morphological characters of grain legumes, oil crops and condiment plants.
- Describe the appropriate cultivation technologies for sustainable production of grain legumes, oil crops and condiments.
- Describe the appropriate methods of pre-and postharvest pest management of grain legumes, oil crops and condiments.
- Cultivate and manage selected grain legumes, oil crops and condiments using relevant agronomic practices.
- Analyze problems and suggest possible solutions related to the agronomic practices and field performance of given grain legumes, oil crops and condiments.

Course Capsule:

Introduction: Introduction to grain legumes, oil crops and condiments; global production, extents and yields; importance and industrial use; Grain legumes: Ecological requirements, production systems, constraints to production, grain legume-based cropping systems, Botanical and morphological features, varieties, field establishment and crop management practices for grain legumes: green gram, cowpea, black gram, soybean, groundnut, pigeon pea; pest and diseases management; Oil crops and condiments: Ecological requirements, national production and constraints, Botanical and morphological features, varieties, nursery management of condiments, pests and diseases management, field establishment and management of condiments and oil crops: chilli, onion, sesame, sun flower, mustard.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Prin	ciples & Techr Pest Managen	niques of nent	Course Code		HC 22053		
		2 Semester	Π			Theory (hr)	30	
Year	2			Credits	03	Practical (hr)	30	
Ical	-			cicuits	00	Independent	10	
						Learning (hr)	10	

To create ecological understanding of pest problems in crop production and landscape gardening sectors and develop knowledge and skills in principles and methods of pest management among students so that graduates will be able to establish sustainable pest management and plant protection systems in Sri Lanka by adopting environmentally friendly approaches.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain the ecology of pest problems, pest management methods and systems.
- Identify the pest problems of major crops and ornamental plants and explain the bionomics of pests.
- Describe the principles, strategies and methods of plant protection from pests.
- Plan a sustainable integrated crop protection/pest management programme after analyzing the pest situation.
- Describe the pesticides and explain pesticide management and risk reduction strategies and techniques to a given situation.
- Identify common weeds in agriculture and explain their biology and ecology.
- Explain the ecological concepts of weed management.
- Describe novel strategies and methods of weed management.
- Design sustainable weed management programme for different cropping systems.

Course Capsule:

Ecological concepts in pest management; Agro-ecosystem as a modified ecosystem; Development of pest problems in agro-ecosystems; Biology and ecology of pests: Population dynamics of pests; Bionomics of major pest groups: plant pathogenic microorganisms, nematodes, insects and others; Diagnosis of pest problems: Identification of different pest groups: symptoms of the damage, signs of the pathogens, assessment of the damages and yield loss; Weed management: Introduction to weeds, Common weeds of cropping systems, Biology and ecology of weeds, Principles of weed management, Ecological concepts for the sustainable weed management; Conventional and novel strategies of weed management; Principles and methods of pest management: Principles of pest management, Natural and applied methods of pest management, bio-chemicals, natural enemies; botanicals; bio-rationals and other bio pesticides; Rational use of pesticides; Natural and synthetic pesticides; Mode of action; Classification and Formulations, Pesticide management, safe and efficient use, drift management, risk reduction; Pest management programmes: Development of pest management programmes for different cropping systems, Integrated pest management (IPM) and Integrated crop management (ICM).

- Continuous Assessment 30%
- End Term Examination 70%

Course Title	Princ	iples and App of Food Scier	plications	Course Code	HC 22063		
	2	2 Semester	Π		03	Theory (hr)	30
Vear				Credits		Practical (hr)	30
icai				cicuits	00	Independent	10
						Learning (hr)	10

To provide students with the knowledge on physical, chemical and biological properties of food so that they will be able to relate them for stability, cost, quantity, processing, safety, nutritive value, wholesomeness and convenience and the practical applications of food science in household and commercial scale.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Describe the constituents of food and their role in food industries
- Quantitatively analyze the composition of food samples
- Determine the reasons of food deterioration at household and farm level
- Explain the principles and methods of slowing down deterioration of food at household and commercial scale
- Describe the methods of food preservation and processing at household and commercial level
- Define quality of commercial horticultural produce
- Define food safety and describe the factors affecting food safety at different food production chains

Course Capsule:

Introduction: Background, Importance and trends, Food constituents, Water and ice, Moisture sorption isotherms, Carbohydrates: Introduction, Importance of carbohydrates, Chemical reactions of Carbohydrates, Lipids: Introduction, Physical aspects of lipids, Chemical reactions of lipids, Role of lipids in food Industry, Proteins: Introduction, Physical aspects of proteins, Chemical reactions of proteins, Role of proteins in food industry. Other food constituents, Food deterioration: Causes and prevention, Fundamentals of Food processing, Food preservation technology, Food safety and quality standards, availability and other related issues.

- Continuous Assessments 30%
- End Semester Examination 70%

Course Title	Н	orticultural C Production	rop	Course Code	HC 31072		
	з		Ι		02	Theory(hr)	20
Year		Semester		Credite		Practical (hr)	20
Icai	9			cicuito	02	Independent	10
						Learning(hr)	10

To provide students with the understanding of the present status and agronomy of vegetables, fruits, cut flowers and foliage plant production to expose students to cultural and production practices of those crops and to explore their export viability.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Identify the families, varieties and important morphological characters of economically important vegetables.
- Describe the appropriate cultivation technologies of vegetables, economically important fruits and other horticultural crops
- Cultivate and manage economically important vegetables using relevant agronomic practices.
- Explain the importance, present status, constraints and future potential of vegetables, fruits and other horticultural crops

Course Capsule:

Vegetables: importance, production statistics, areas of cultivation, present status and future prospects of vegetable production in Sri Lanka, potentials for export, market demand, and vegetable based cropping systems, varieties, their characteristics and cultivation technologies; Fruits: importance, present status, constraints and future potential of fruit production in Sri Lanka, cultivation technologies of economically important fruit crops; Other horticultural crops: importance, present status and Production of cut flowers and foliage plants.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Co	ommercial Veg Production	getable n	Course Code	HC 31083		
			Ι	Credits		Theory(hr)	30
Year	3	3 Semester			03	Practical (hr)	30
Ical	5			Cicuits	00	Independent	10
						Learning (hr)	10

To provide students with the understanding of the present status, agronomy of vegetables and to expose students to cultural practices, production systems, modern agricultural techniques andto explore the commercial potential of vegetables

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Identify the vegetable families, varieties and important morphological characters of vegetables.
- Explain the vegetable production systems in Sri Lanka, present status, export viability, constraints of vegetable production and future potentials.
- Describe the appropriate cultivation technologies of up country, low country vegetables and leafy vegetables.
- Cultivate and manage up country, low country and leafy vegetables using relevant agronomic practices.
- Identify and suggest possible solutions related to the agronomic practices and planting material production of vegetables
- Describe the importance, present status and methods of mushroom production.
- Establish and manage a mushroom cultivation using appropriate methods.

Course Capsule:

Vegetable production: importance, production statistics, areas of cultivation, present status and future prospects of commercial vegetable production in Sri Lanka, potentials for export, market demand and quality control, vegetable based cropping systems, economic significance and influences on environment and farming community, vegetable varieties and their characteristics, cultivation techniques, cultivation of crops under protected environments and advanced techniques in vegetable production, introduction and economic potential of non-commercial vegetable crops; Institutional support for vegetable production: role of state and private sector, input supplies, extension and farmer protection, major constraint of vegetable production and future trends in vegetable production; Establishment and management of vegetables: establishment of nurseries, field establishment, crop management of different vegetables; Mushroom production :present status, importance, medicinal value and methods of mushroom production , establishment and management of mushroom cultivation using relevant methods.

- Continuous Assignments 30%
- End Semester Examination 70%

Course Title	(Commercial F Production	Course Code	HC 31093			
		3 Semester	1			Theory (hr)	30
Voar	3			Cradita	03	Practical (hr)	30
Tear	5			cicuits	05	Independent	05
						Learning(hr)	00

To provide students with the knowledge of fruit production, establishment and management of orchards and cultivation of economically important fruit crops so that they will be able to formulate reasonable solutions for problems related to cultivation and management of fruit crops in commercial scale

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain Importance, present status and future potential of fruit production in Sri Lanka
- Identify the suitable fruit crops for a particular agro-ecological region considering the major crop requirements for normal growth and reproduction
- Describe and illustrate the management practices of fruit orchards
- Explain the importance, ecological requirements, botany, varieties, cultivation practices and harvesting and post-harvest treatments of major and other commercially important fruit crops
- Identify and explain the importance of underutilized fruit crops, their potential uses and future prospects
- Identify and analyze the major constraints faced by commercial scale cultivations and suggest potential solutions
- Explain the ways of maximizing the profits of a commercial fruit orchard by costbenefit analysis

Course Capsule:

Introduction to fruit production; Importance, present status and future potential of fruit production, Fruit crops in different cropping systems and export potential, Constraints in commercial fruit production and potential solutions to maximize the profits, Establishment and management of orchards; Principles and methods of orchard establishment, orchard floor management, nutrient management, light management, water management, pest and disease management, weed management, application of plant growth regulators, training and Pruning practices, Cultivation of fruit crops; Importance, ecological requirements, botany, varieties, cultivation and management practices, harvesting and postharvest treatments of major and other commercially important fruit crops, Underutilized fruit crops; Importance of underutilized fruit crops, their economic potential and future prospects.

- Continuous Assessments 30%
- End Semester Examination 70%

Course Title	Medi	cinal and Her Production	bal Plant n	Course Code		HC 31102		
		3 Semester	Ι			Theory (hr)	20	
Voor	3			Cradita	2	Practical(hr)	20	
Tear	5			Cieuns		Independent	10	
						Learning (hr)	10	

To teach students the commercial level cultivation, uses, active compounds and authentication of a range of medicinal and herbal plants so that they will be able to appreciate and contribute to the development of the medicinal and herbal plant industry

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Describe the present status of medicinal and herbal plant production in Sri Lanka
- Identify commonly used medicinal and herbal plants
- Apply the knowledge on agronomic practices in commercial level cultivation of selected group of medicinal and herbal plants
- Determine the constrains to the commercialization of medicinal plant production
- Investigate the conservation efforts aimed at preservation of medicinal plants and biological diversity
- Explain the value addition and basic preparation techniques of medicinal and herbal plants
- Distinguish the main groups of active compounds in medicinal plants and their importance in human health
- Conduct simple quality assurance tests used in the authentication of raw materials

Course Capsules:

Medicinal plants: Introduction and present status of the medicinal plant industry; Importance of correct plant identification and identification of medicinal plants; plant base drugs originated in traditional medical systems; commercial level cultivation of important medicinal plants; constrains to the commercialization of medicinal plants; value addition and basic preparation techniques; active compounds in medicinal plants and their importance; quality assurance tests and authentication of raw materials and products; depletion of medicinal plants and needs for conservation of biological diversity; Legislation and policy related to medicinal plants, Herbal plants: Introduction and present status of the herbal plant industry; Commercial use of herbs; commercial level cultivation of important herbal plants and constrains to the commercialization

- Continuous assessment 30%
- End semester examination 70%

Course Title	Lar	ndscape Horti	culture	Course Code		HC 31113		
	2		Ι			Theory (hr)	30	
Voor		Somostor		Cradita	3	Practical (hr)	30	
rear	5	5 Semester		Cleuits	5	Independent	10	
						Learning (hr)	10	

To teach the students the principles and practices of establishment, management and use of landscape plants so that they will be able to use ornamental plants as a medium to design and manage a given landscape site in an aesthetically pleasing and ecologically sound manner.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Describe the potential functions of landscaping
- Explain the evolution of landscape design styles and modern practices
- Categorize plants into different groups based on their growth habits
- Select suitable plants for a given landscape site by applying the knowledge on elements and principles of landscape designs; aesthetics, functions and environmental adaptations of landscape plants
- Adopt suitable establishment and management practices for landscape plants to enhance aesthetics and functional uses
- Use selected plants and prepare an environmentally sound, aesthetically appealing planting design for a given landscape site
- Apply the knowledge on plants when designing in artificial situations

Course Capsules:

Introduction and functions of landscaping; history of landscape designs in the world; landscape design styles and modern practices; materials used in landscaping; basic plant nomenclature; different types of soft landscape materials: ground covers, climbers, herbs, shrubs, trees, lawn grasses, turf, water plants and potential native plants, their establishment and management; techniques for establishing plants on landscape sites; elements and principles of landscape designs; aesthetic, ecological and functional principles underpinning planting designs; landscape plant associations; implementation of a design in the university premises; trends in the industry: extensive use of exotics and associated problems, principles of wildlife gardening, open space development, horticulture therapy; planting in artificial situations: roof gardens, vertical gardens and interior plantscaping; Urban ecosystems and Ecological designs

- Continuous Assessment 30%
- End semester Examination 70%

Course Title	Plar N	nt Tissue Cult ⁄licro propaga	ure and ation	Course Code		HC 31123		
	3	3 Semester	Ι			Theory (hr)	30	
Vear				Cradita	03	Practical (hr)	30	
Teal	5			cicuits	05	Independent	05	
						Learning (hr)	05	

To provide the knowledge on fundamental, theoretical and applied aspects of plant cell and tissue culture so that students can apply the knowledge at both research and commercial level to overcome certain problems related to the Horticultural plants.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Interpret the plant cell culture techniques and the reasons behind the toti-potency of plant cells
- Demonstrate the requirements to initiate tissue culture facilities for research or commercial purpose
- Distinguish the different tissue culture techniques and identify their applications for different purpose
- Interpret the principle behind micro-propagation and application aspect of this technique for horticulture industry
- Appraise the crop improvement through plant tissue culture
- Distinguish the principle behind the in vitro conservation of plant genetic resources using in vitro culture techniques and the advantage over the ex vitro conservation
- Apply in vitro culture systems for bio-industrial purpose
- Use transformation technique for crop improvement
- Apply the microorganism elimination principle in healthy planting material production and transfer system
- Use in vitro pollination for plant breeding and genetic improvement

Course Capsule:

Overview and scope of plant tissue culture, Explant preparation and aseptic culture conditions, Advanced and commercial tissue culture facilities, Culture media and Plant growth regulators in tissue culture, Plant *In vitro* techniques and culture systems, Micropropagation of horticultural crops and its commercial application, Bio-reactors and Industrial Production of Natural Plant Products, Crop improvement through mutagenesis, somaclonal variation, doubled haploids, transformation and induced abiotic stress, Artificial seeds, Plant genetic conservation through tissue culture (short-term and long-term storage systems), Microorganism free planting material via tissue culture, In vitro pollination

- Continuous Assessments 30%
- End Semester Examination 70%

Course Title	Processing and Preservation of Horticultural Produce		Course Code		HC 31133		
			Ι			Theory (hr)	30
Voor	3	Somostor		Credits	03	Practical (hr)	30
Teal	0	5 Semester			05	Independent	05
						Learning (hr)	05

To provide students with the understanding of science underlying the preservation technologies of crop produce and equip them with knowledge and skills required for development of high quality processed products.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Describe the principles of food preservation in a horticultural science context.
- Explain the processes and technologies appropriate for preservation and value addition of fruits and vegetables under a given situation.
- Explain the uses of microbes and biotechnological tools in food industry.
- Describe the principles involved in food product design.
- Design and demonstrate the steps of developing a simple processed product from selected crop produce.

Course Capsule:

Introduction: food deterioration and losses, introduction to food preservation; principles of horticultural crop preservation, fruit and vegetable products, processing equipment and machinery; Manufacturing processes: unit operations, blanching, dehydration, freezedrying and concentration, refrigeration and freezing, thermal processing, canning, pickling, preservation by addition of chemicals, fermentation, juice processing, deep frying technology, crystallization and candying; Advanced food processes: irradiation, high-pressure, microwave processing. Advantages and disadvantages of different preservation methods; Value added products: principles of food product design, food product development, product management and planning, ingredient technology, branding and specialty produce, minimal processing, fresh-cut produce; Microbes for food industry: microbial-based food production, food fermentations, microbes as food, microbes as sources of food enzymes and ingredients, application of biotechnology in food industry.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Postl Tech	harvest Physio nology of Hor Crops	logy and ticultural	Course Code		HC 31143		
		3 Semester	т	Cradits		Theory (hr)	30	
Vear	3				03	Practical (hr)	30	
icai	5		1	Cicuits	00	Independent	05	
						Learning (hr)	05	

To provide knowledge on biological and physiological processes taking place in harvested fresh horticultural produce and introduce the principles and applications of postharvest management to minimize losses.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Describe the principles and practices fundamental to postharvest quality management of horticultural commodities.
- Define the terms physiological maturity, commercial maturity and harvesting indices for a range of horticultural crops.
- Explain the biological factors and physiological processes which determine quality of harvested horticultural crops, and the processes that contribute to product deterioration.
- Describe the benefits of effective pre-harvest crop management practices for improving postharvest quality of fresh produce.
- Explain how horticultural crops are harvested, handled and stored in order to minimize postharvest losses.
- Design appropriate storage environments for horticultural commodities to slow down their deterioration.
- Practice artificial ripening of selected fruits using ripening agents without downgrading the quality.
- Measure important quality parameters of horticultural commodities and interpret the results so as to make judgments on their quality.
- Analyze problems associated with handling and storage of horticultural produce and propose solutions.

Course Capsule:

Postharvest losses: causes of postharvest losses and factors affecting quality of fresh horticultural produce; Postharvest physiology: introduction to the science and practice of postharvest plant physiology, physical and chemical changes; Metabolic considerations in harvested products: maturity and harvesting indices, respiratory patterns, fruit ripening, senescence processes and abscission, ethylene physiology. Cut flowers: factors affecting postharvest quality of ornamentals, water relations and role of phytohormones, handling and storage requirements, postharvest techniques, dry preservation of ornamentals. Effects of pre-harvest factors on postharvest quality. Physiological disorders, Postharvest technology procedures: control of postharvest quality deterioration, warehouse operations, preparation for fresh market, handling procedures, special operations and treatments; temperature management, storage systems, control of fruit ripening, transportation, handling at destination markets, recent trends in perishables handling.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Form	Project propo nulation and S Writing	osal Scientific	Course Code			
		3 Semester	Ш			Theory(hr)	20
Vear	3			Credits	02	Practical (hr)	20
Tear	5				02	Independent	05
						Learning (hr)	05

To provide students with the knowledge on criteria in research methodology and develop skills on scientific writing so that they will be able to formulate complete project proposal and construct a scientific research paper

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain types of research projects and standards applied in scientific writing
- Identify the problem, search literature, formulate hypothesis and select an appropriate statistical design to analyze the problem
- Develop a research proposal by following standard methodology
- Explained the different methods used in data analyzes and interpretation
- Describe steps involve in making conclusions and giving recommendations based on interpreted data
- Develop a project proposal and a full scientific paper with proper layout and correct language handling
- Apply research publication methods in national/international journals.

Course Capsule:

Project proposal formulation: introduction to proposal formulation, literature review, problem identification, hypothesis statement, time frame, budget; Research: research methodology, definition, types of research, research classification, identification and preparation of research projects, scientific methodologies, hypothesis, and review of past work; Scientific Writing: need for good scientific writing, structure and layout of a scientific paper, title, introduction, Material and methods, results, discussion references, preparation abstracts, synopses, summaries, resumes, bibliographical identification, of acknowledgements, Style of reporting, construction of sentences, use of words, use of international standards, quantity units and symbols for physical quantities, use of abbreviations; Publication: national and international journals, citation

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Con	nmercial Flor	iculture	Course Code			
Year	3	Semester	II	Credits	03	Theory (hr) Practical (hr)	30 30
						Learning(hr)	05

To provide students with comprehensive understanding and practical skills required for commercial cut flower and foliage plant production.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain present status, economic importance, national production and constraints to production of cut flower and foliage plants.
- Describe the appropriate cultivation technologies for economically important cut flower and foliage plants.
- Explain the quality control, packing and transport of important cut flower and foliage plants.
- Identify (solve) the problems related to agronomic practices and planting material production of cut flowers and foliage plants and suggest potential solutions.

Course Capsule:

Introduction to the floriculture industry: importance, local and international trade, demand and supply, constraints to production, product categories; Cut flower production: tropical and temperate species, economically important species, botany, varieties, environmental requirements, propagation, production technology, postharvest treatments, quality control and export regulations; Floral arrangement;

Foliage plant production: introduction, economically important species and varieties, environmental requirements, propagation, production technology, export procedures; Potted plant production: bonsai production, current research and industry trends.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Ι	Landscape De	esign	Course Code		HC 32173		
			Π			Theory (hr)	15	
Voor	3	Somostor		Cradite	3	Practical (hr)	60	
rear	5	5 Semester		cicuits	5	Independent	10	
						Learning (hr)	10	

To teach the students the principles and practices of landscape design so that they will be able to design a landscape site in an aesthetically pleasing and environmental friendly manner to satisfy the customer's requirements

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain traditional landscape design practices in Sri Lanka
- Describe the approaches of environment, water and energy smart landscape design techniques
- Explain the approaches of designing for the society
- Develop a landscape design to fulfill the client's requirements
- Prepare specifications, Bill of quantity and related documents
- Plan and implement a design using hard landscape materials

Course Capsules:

Introduction to landscape design, traditional landscape design practices in Sri Lanka, process of a design, site and user investigation and evaluation, relationship of two and three dimensional space, landscape calculations, preparation of specifications, BOQ and related landscape contract documents, principles of Xeriscape landscape, construction materials: aesthetics, technical properties and functional use; design features of different sites, drainage systems for outdoor areas, practice of designing for clients with special needs; computer aided designing techniques

- Continuous Assessment 30%
- End semester Examination 70%

Course Title	Сс	ommercial Nu Manageme	ursery nt	Course Code			
		3 Semester	II			Theory(hr)	20
Voor	3			Credits	02	Practical (hr)	20
Teal	5				Cleuits	02	Independent
						Learning (hr)	05

To provide students with knowledge on principles, practices and skills of plant propagation so that students will be able to establish and manage a commercial nursery with international accreditation.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain the importance of nursery management in crop production.
- Describe and practice conventional and novel plant propagation methods for horticultural crops and select appropriate propagation methods for a given crop.
- Explain the principles of commercial nursery management.
- Analyze the demand for quality planting material and prepare a plan for commercial nursery for planting material production.
- Explain the nursery accreditation systems.

Course Capsule:

Plant Propagation: introduction to commercial plant propagation, importance of quality planting material production ,biology of plant propagation, plant propagation by seeds, propagation by specialized plant structures, cuttings, layering, budding and grafting, factors affecting plant propagation and manipulation of propagation factors; Nursery management : commercial nursery management, planning and establishment of commercial nursery, selection of nursery site, requirements, propagation structures, preparation of nursery beds, nursery bags, nursery soil / potting mixtures and other growing media, treatments, provision of shade and planting, pest management, fertilizer application and hardening, management of clones by vegetative propagation, mother plant nurseries, seed gardens; accreditation of nurseries

- Continuous Assessment- 30%
- End Semester Examination 70%

Course Title	Pe	est Manageme Horticultur	ent in re	Course Code			
		3 Semester	п			Theory (hr)	20
Vear	3			Credite	02	Practical (hr)	20
Teal	5			cicuits	02	Independent	10
						Learning (hr)	10

Development of knowledge and skills towards environment friendly and sustainable crop protection through application of principles, techniques and practices of pest management among students in order to manage pest problems in horticulture industry.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Describe the peculiarities of the ecology in horticultural cropping system and pest problems.
- Estimate pest populations and assess their damage in horticultural cropping systems.
- Explain the principles and practices of pest population forecasting, warning and signaling systems in plant protection.
- Design an appropriate crop protection programme after evaluating the available pest situation and possible methods of pest management suitable for a given crop production and natural setting.
- Apply possible methods of implementation, evaluation and improvements for the designed pest management programme.

Course Capsule:

Specific requirements of pest management in horticultural cropping systems; Ecology of horticultural cropping systems; Pest problems in horticulture; floricultural crops, fruits, vegetables and other horticulture systems, their identification, bionomics and methods of management; IPM and ICM in horticulture; Pest population estimates: pest population dynamics; Pest damage assessment: monitoring, surveillance and forecasting pests; warning and signalization of pest epidemic: planning, implementation, monitoring, evaluation and improvement of pest management programmes for horticulture and landscape gardening systems

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	I	3iotechnology Horticultur	y for re	Course Code		HC 32202	
	3		Π			Theory (hr)	20
Voor		Somostor		Cradita	02	Practical (hr)	20
Teal		5 Semester		Credits		Independent	00
						Learning (hr)	00

To provide the students specializing in horticulture with basic knowledge in plant molecular biology and gene manipulation so that they can use molecular techniques in improving the production of horticultural crops

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Apply the theoretical basis of the gene manipulation techniques for crop improvement
- Demonstrate the plant genome organization and function for application in molecular biological studies of horticultural plants
- Employ the safe use of biotechnology for better performance of horticultural crops

Course Capsules:

An overview of biotechnology, Plant genome structure, Molecular techniques (DNA extraction, Quantification, labeling, PCR, Gel electrophoresis, Enzymes in molecular biology, Gene cloning (substrate, cloning vectors, Gene library and library screening), Molecular applications (Gene identification, Gene mapping, Disease diagnosis, Germplasm evaluation and screening, GMO), Molecular breeding (Genetic markers and marker assisted selection, gene transformation and transgenic plants), Biosafety, Public debate on GMO

- Continuous Assessment 30%
- End semester Examination 70%

Course Title		Special topic Horticultur	s in re	Course Code			
	3	3 Semester	Π		01	Theory (hr)	15
Voor				Credits		Practical (hr)	00
Teal						Independent	00
						Learning (hr)	00

To expose students to the emerging trends and issues in horticulture so that they will be able to perform as a successful professional horticulturist

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain latest developments in the horticulture sector
- Explain important issues in horticulture
- Analyze the current issues related to the horticulture industry

Course Capsules:

Students will be exposed to the latest developments, current research topics and issues related to the horticulture industry through seminars conducted by subject area specialists

- Continuous Assessments 30 %
- End semester Examination 70%

Course Title	Postl Nor	narvest Techn n-Horticultura	ology of al crops	Course Code	HC 32223		
	3	3 Semester	п			Theory (hr)	30
Vear				Credits	03	Practical (hr)	30
Ieal	5		11	cicuits	05	Independent	10
						Learning (hr)	10

To provide students with the understanding of the postharvest considerations and current procedures and challenges in postharvest handling of non-horticultural produce, including cereals, pulses, root and tuber crops, Spices and condiments so that they will be able to minimize postharvest losses in these commodities.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Describe the principles and practices fundamental to postharvest quality management of cereals, pulses, root and tuber crops, spices, condiments, medicinal plants and mushroom.
- Explain how the selected non-horticultural crops are harvested, handled and stored in order to minimize postharvest losses.
- Design appropriate storage environments for selected non-horticultural commodities.
- Analyze problems associated with handling and storage of a range of nonhorticultural products and propose solutions.

Course Capsule:

Introduction: an overview of postharvest losses of non-horticultural produce. Fundamentals of postharvest handling and storage of non-horticultural produce; Field crops: structure and composition of cereals and grain legumes, physical and thermal properties, grades, harvesting and threshing, grain drying; Grain storage and handling: perspectives and problems, structural considerations - warehouse and silo, grain milling and processing, dehulling, splitting and milling of pulses; Preservation techniques; Roots, tubers, bulb crops, spices and condiments: structure and composition, postharvest handling systems, harvesting, maturity indices, postharvest procedures, curing, storage, preparation for market, processing and preservation.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Foo	d Safety and Assurance	Quality	Course Code		HC 32232		
		3 Semester	П			Theory (hr)	15	
Vear	3			Credits	02	Practical (hr)	30	
Teal	5				02	Independent	05	
						Learning (hr)	05	

To provide students the knowledge on chemical aspects and functional properties of the major components of foods, their safety aspects and give them the knowledge and skills required for food quality analysis.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain quality assurance procedures applied in horticultural and food industry.
- Describe the factors affecting food safety at different food production chains.
- Identify appropriate methods to analyze a food sample for given quality parameters.
- Explain the methods of determination of the shelf life of developed food products and analyze the chemical composition of the final products in order to make judgments on quality.

Course Capsule:

Food properties: sensory properties of foods, sensory evaluation techniques: analytical and consumer tests, functional ingredients and intentional food additives, texture and flavours as functionality, food colours; Methods for food analysis: sampling techniques, chromatographic methods, rheology, spectroscopic methods, colour measurement; Food safety: microbiology and safety of fresh and processed fruits and vegetables, quality and safety factors, measurements of quality, quality standards, international fresh food safety, food preservatives, nutritional properties, stability of nutrients, general mechanisms of nutrient loss, improvements in nutrient content, non-essential nutrients and disease prevention; Quality assurance in food processing: shelf life determination, chemical constituent analysis, microbial contamination, laws and regulations related to food safety, food regulatory systems - ISO 22000, Hazard Analysis Critical Control Points (HACCP), Good Manufacturing Practices (GMPs). Recent advances and current research trends. Water and waste Management in food industry.

- Continuous Assessment 30%
- End Semester Examination 70%
| Course
Title | Packaging Technology for
Horticultural Produce | | | Course
Code | HC 32242 | | |
|-----------------|---|------------|----|----------------|----------|----------------|----|
| | | | п | Cradits | | Theory(hr) | 15 |
| Vear | 2 | Somostor | | | 02 | Practical (hr) | 30 |
| Teal | 5 | Joennester | 11 | cicuits | 02 | Independent | 10 |
| | | | | | | Learning (hr) | 10 |

To provide students with knowledge on packaging materials and technologies so that they will be able to design appropriate packaging systems for fresh and processed crop produce.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain physical and chemical properties of packaging materials intended for maintaining shelf life of crop produce.
- Evaluate packaging materials and methods in terms of their applicability in fresh and processed food products.
- Design appropriate packaging systems for given fresh and processed food products to minimize their rate of deterioration.

Course Capsule:

Introduction: packing and packaging, importance of packaging in horticultural and food industry; packaging functions and definitions, active and passive packaging, food-package-environment interactions; Packaging materials: composition and properties, formed packages - components, manufacture, uses and trends, quantification of packaging properties; Package design for different food products: fresh, processed and preserved products, dry foods, moisture sensitive foods, heat-processed foods, frozen foods, oxygensensitive foods, beverages; Modern *versus* traditional packaging materials; Modified atmosphere packaging (MAP); Packaging trends: package reduction, recycling and energy recovery; Food packaging laws and regulations.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Pos	stharvest Patl	nology	Course Code			
	2	3 Semester	Π			Theory (hr)	20
Voor				Cradita	02	Practical (hr)	20
Teal	5			Cicuits		Independent	05
						Learning (hr)	05

To provide students with the knowledge on mechanisms of postharvest disease development and their management in order to minimize postharvest decay in fresh horticultural produce.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain the basics of postharvest host physiology and mechanisms of disease development in fresh harvested commodities.
- Describe the environmental effect on postharvest disease development in horticultural crops.
- Explain the safe use of physical, chemical and biological measures of managing postharvest decays in horticultural produce.
- Diagnose the common postharvest diseases in horticultural commodities based on the symptoms aided microscopic examination of the pathogen.
- Identify and suggest control measures for common postharvest pests in horticultural commodities.

Course Capsule:

Principles of postharvest pathology: overview of postharvest diseases, postharvest host physiology, mechanisms of host resistance. Pathogen identification and biology, environmental effects on postharvest pathogens. Management of postharvest decays: physical methods and environmental modifications, commodity handling; chemical methods, sanitation; prevention, suppression, and eradication; use of biological control organisms and plant growth regulators; regulatory aspects of chemical and biological treatments in horticultural crops. Postharvest diseases of selected commodities and their management. Postharvest insect pest control. Current research trends.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Url E	oan Agricultu dible Landsca	ire and aping	Course Code		HC 41262			
	1	4 Semester	т			Theory (hr)	15		
Voar				Credits	02	Practical (hr)	30		
Teal	т		1	cicuits	02	Independent	00		
						Learning (hr)	00		

To provide students an in depth understanding of concept of urban agriculture and edible landscaping so that students will be able to create a sustainable crop production systems in an urban environment

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain the concept, importance and methods of urban agriculture
- Explain management and optimum utilization of urban resources and waste to improve the quality of life.
- Describe urban Agriculture & Improving Local, Sustainable Food Systems and Urban and Peri-urban Agriculture cities in Sri Lanka
- Apply the knowledge on elements and principles of landscape design for edible plant selection

Course Capsule:

Urban Agriculture: importance, present status, nutritional contribution in urban agricultural systems, urban food crop production systems, areas of cultivation, innovative containers used in urban gardens while conserving the traditional vegetable species in Sri Lanka; Future prospects and production potentials: food security, market demand and quality of urban agricultural products, economic significance and influences on environment and management of natural resources, urban waste and optimum utilization of land in limited area while improving the quality of life through reducing the pollution; Establishment and management of Urban Agriculture unit in the university premises: establishment of nurseries, field establishment and crop management of different vegetables; Concept of edible landscaping techniques and guide for edible plant selection; Institutional support: Global Urban Agriculture Summit (GUA Summit), *Food and Agriculture Organization* of the United Nations (FAO) and Resource Centers on Urban Agriculture and Food Security (RUAF); Describe constraints and future challengers in urban agriculture

- Assignments 30%
- End Semester Examination 70%

Course Title	Po	llen in Agrici	ulture	Course Code	HC 41272		
	4	4 Semester	1		02	Theory (hr)	20
Voar				Cradita		Practical (hr)	20
Ical			1	Cicuits		Independent	10
						Learning (hr)	10

To provide the students with basic knowledge about the pollen and its role in agriculture so that it can be used to conserve the biological factors effect on agricultural crop production

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Demonstrate the morphological and biological aspects of pollen for identification purpose
- Analyze the pollen for identification of the factors related to low fruit/ seed production
- Apply the knowledge on palynology to implement the systems for enhancement of crop production

Course Capsule:

Pollen formation and development, Pollen morphology and biology, Pollen pistil interaction, Pollen biology and plant breeding systems, Pollination constraints and management of pollinating insects for crop production, Pollen in hybrid seed production; cytoplasmic male sterility, genic male sterility, self-incompatibility, chemical induction of male sterility, Pollen in plant breeding; barriers to hybridization, methods for overcoming interspecific crossing barriers, storage of pollen, effects in pistil-mediated pollen-pollen interactions, Pollen viability, pollen tube growth and pollen selection, Isolation and manipulation of sperm cells; in vitro fertilization with single isolated gamete, pollen embryo, use of pollen in gene transfer

- Continuous Assessment 30%
- End Semester Examination –70%

Course Title	Cor	nmercial Api	culture	Course Code		HC 41282		
	4	4 Semester	1			Theory (hr)	20	
Vear				Cradita	02	Practical (hr)	20	
Tear	т			Cicuits	02	Independent	05	
						Learning (hr)	05	

To provide the students with knowledge and practical skills of apiculture so that they will be able to establish and manage bee hives under commercial scale

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain the Importance and principles of commercial Apiculture
- Identify different honey bee species in Sri Lanka respect to their morphology
- Explain the seasonal activities and social behavior of honey bees
- Evaluate the suitability of particular land for commercial Apiculture
- Develop bee hives with all the basic components
- Explain the management practices of honey bee colonies
- Describe the honey harvesting process and Marketing of bee products

Course Capsule

Introduction of commercial Apiculture, Importance of Apiculture to Agriculture, Systematic and morphology of Honey bees, Honey bee species, Colony organization of honey bees, Seasonal activities and social behavior of honey bees; Principles of commercial Apiculture; Pre requirement of Apiculture, Ecological requirements, Food sources of the honey bees, bee flora and honey flow periods, Flight radius and foraging radius of the honey bees and competition for foods; Bee hives and appliances; Basic components of bee hives and appliances needed for commercial Apiculture ;Manipulation of honey bee colonies, Seasonal management of honey bee colonies, Migratory beekeeping, Pest, diseases, enemies and predators management, Bee hive products, Honey harvesting and Marketing of bee products

- Continuous Assessments 30%
- End Semester Examination 70%

Course Title	Biora	Application tionals in Ag	of riculture	Course Code		HC 41292		
	Λ	4 Semester	т	Cradita		Theory(hr)	20	
Voar					02	Practical (hr)	20	
Tear	Т		1	Cicuits	02	Independent	05	
						Learning (hr)	05	

To provide fundamental knowledge on the use of biorationals as a sustainable solution for wide range of problems arising in the agriculture sector to meet the demand of growing population.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Describe the biorationals and give their importance in order to address the challenges in agriculture.
- Explain the possible use of biorationals in wide range of sectors.
- Describe the different types of biorationals that are possible to be used in agriculture.
- Use the biorational application techniques and select the appropriate biorational and the most efficient method to apply in a given sector of agriculture.

Course Capsule:

Introduction to biorationals: origin and sources; Technology of extraction and production; Uses of biorationals : agriculture, public health, forestry, aquaculture, turf management, structural pest control, home and home garden sectors; Biorationals of different origins: biologically derived and synthetic analogue products, biorationals, biopesticides, nonpesticidal biorational products: Use for crop stress management: enhanced plant physiology benefits, root growth management, postharvest or as an alternative control agent to pesticides and antimicrobials; Principles and techniques of biorational application.

- Continuous Assessment 30%
- End semester Examination 70%

Course Title	Seed Technology			Course Code	HC 41302		
	1	4 Semester	т			Theory (hr)	20
Voar				Credits	02	Practical (hr)	20
Teal	т 		1	cicuits	02	Independent	10
						Learning (hr)	10

To provide students with the basic knowledge on the structural and biological aspects of the seeds and the different steps involved in commercial seed production system so that students can apply it for enhancing the quality of seeds in agriculture.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Illustrate the morphological and biological aspects of seed and relate it to the seed production system
- Demonstrate the seed production system and apply the knowledge for seed production of different crops
- Distinguish the new technologies related to the seed industry and use them for upgrading the existing seed systems

Course Capsule:

Seed evolution and seed development, Seed dormancy and germination, Basic Concepts of Seed Production, Quality seeds and its importance in agriculture, Seed Technology -Definition, objective and its role, Causes for varietal deterioration, maintenance of genetic purity, Generation system of seed production, Methods for hybrid seed production and Maintenance of parental lines, Certified and registered seeds, Seed Production systems for different crops, Seed Act and Seed Rules, Seed processing ; seed treatment, packing, testing, storage, and marketing, Seed enhancements; seed coating, encrusting, pelleting,, Synthetic seeds

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Principles of Crop Physiology			Course Code		PM 11012	
	1	1 Semester	Ι	Credits		Theory (hr)	20
Voar					02	Practical (hr)	20
Tear					02	Independent	10
						Learning (hr)	10

To provide knowledge and skills on physiological processes of plants and behavioral and functional changes of plants so that students will be able to apply them in crop management.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain main physiological processes of plants
- Identify and design management practices based on their physiological knowledge to improve productivity of crops.
- Analyze interpret and present growth pattern of plants
- Use laboratory and field equipment correctly to generate data and analyze and interpret data
- Safe use of laboratory and field equipment cooperatively and with mutual respect

Course Capsule:

Plant growth patterns; Growth curve; Measurement and analysis of plant growth; Photosynthesis; Respiration; Plant water relationship; Plant hormones and growth regulators; Photoperiodism; Vernalization; Floral Development; Fruit set, fruit growth and development; Parthenocarpy; Unfruitfulness; Fruit ripening; Control of fruit ripening; Senescence and abscission.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Env	rironment and Manageme	l Forest nt	Course Code	PM 11023		
	1	1 Semester	Ι			Theory(hr)	35
Vear				Credite	03	Practical (hr)	20
Ical	1			Cicuits	0.5	Independent	10
						Learning(hr)	10

To provide students with ample comprehension on basic scientific concepts of Environmental Science and forestry so that they will be able to develop their skills to deal with environmental issues to minimize the adverse effects to the environment and maximize environmental, economic and social benefits.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain the structure and functions of ecosystems and identify the causes of the presentday environmental crisis.
- Describe the implication of environmental degradation and environmental management strategies to reduce or mitigate environmental problems.
- Explain scientific management of forests and methods of managing forest resources in a sustainable manner
- Prepare Management Plan for the productive and protective forests

Course Capsule:

Environment management: Structure and functions of ecosystem, levels of interactions, functional levels and biomes; Environmental problems and causes for environmental degradation; air pollution, water pollution, solid wastes; Agro-chemicals and their effects; Greenhouse effect, global warming and ozone depletion; Species extinction; Deforestation, erosion, acidification, salinisation, water logging and soil compaction; Conservation of ecosystem, biodiversity and genetic resources; Environmental management strategies and principles of sustainable development. **Forest management:** Introduction to forestry and major natural vegetation types in Sri Lanka, IUCN category system for protected areas; Commercial forest plantation crops, silvicultural practices in forest plantations, biologically accepted harvesting point, clear felling system; shelter wood system and selection system, forest harvesting systems; Forest management plan, planning steps in forest certification.

- Continuous Assessments 30%
- End Semester Examination 70%

Course Title	Prir	nciples of Soil	Course Code		PM 12032		
			Π			Theory (hr)	20
Vear	1	Semester		Credits	02	Practical (hr)	20
ICai	1	1 Semester			02	Independent	05
						Learning (hr)	05

To provide students with basic understanding of the different rock forming minerals, rock cycle and rocks of Sri Lanka, nature of soil genesis and the classification of global soils, information of the inherent characteristics of the soil physical, biological and chemical properties and how they relate with soil use and management practices and their potential and limitation and their impact on the soil environment and possible remediation practices.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Describe rocks of Sri Lanka and how they affect the characteristics of the soil in different climatic zones of Sri Lanka.
- Apply the acquired knowledge pertaining to the soil physical, biological and chemical properties for land use and management.
- Describe the potential and the limitations of the Sri Lankan soils and their impact on the soil environment and apply this acquired knowledge for possible remediation practices
- Describe soil properties through field and laboratory work.

Course Capsule:

Introduction to soil science, its importance in agriculture, Types of rocks and minerals: their formation and characteristics, Sri Lankan rocks and their classification; Weathering of rocks: types of weathering and interactions, Soil formation, Factors affecting soil formation and Interaction of different soil forming factors, Soil profile and Soil horizon development; Global soils: Classification of and their distribution. Soil Physical Properties: soil colour, texture, structure, soil consistency, bulk density, particle density, porosity, Soil water, field capacity, wilting points and their individual and collective effects on soil fertility; Soil Chemical Properties: Formation of different types of clay minerals and their characteristics and their importance in soil fertility, Cation Exchange Capacity, exchangeable cations, Ion exchange in soil, Base saturation, Soil reaction, lime requirements, and its effects on soil fertility; Soil Biological Properties: Soil macro and fauna, organic matter, its role in crop production, humus and soil fertility; Soils of Sri Lanka: Wet and Dry Zone soils, their potential, limitations and their management, Problem soils and their management; Familiarizing the soil and leaf sampling equipment, Different methods of soil and leaf sampling.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Agrie	cultural Micro	obiology	Course Code	PM 12042		
		1 Semester	Π	Credits		Theory (hr)	20
Vear	1				02	Practical (hr)	20
Ital	T				02	Independent	10
						Learning (hr)	10

To provide students with the basic knowledge on the structure, physiology & biochemistry of the microorganisms and their involvement in agriculture & industry so that students will be able to understand microbial life, their processes & uses and handle microorganisms for their benefit.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Describe the types of microorganisms, classification systems and use microscopy to identify microorganisms
- Explain microbial cell structure, arrangement and use different aseptic methods to handle microorganisms
- Explain microbial respiration, nutritional requirements, nutritional relationships between microorganisms and other organisms
- Explain soil microbial processes involve in soil fertility and importance of bio fertilizers
- Describe industrially important microorganisms, fermentation process & products and use microbial control methods in food
- Describe & identify microbial crop pests and diseases

Course Capsule:

Classification and nomenclature; Microscopy; Morphology & cytology of microorganisms; Nutrient requirement and growth of microorganisms; Control of microorganisms, sterilization principles and methods; Staining, methods of isolation and identification; Preservation of microbial cultures; Fermentation of mixed acids and other reductions; Aerobic & anaerobic respiration; Microbial community and interspecific relationships; Effect of microbes on animals and plants, applications of microorganisms in industry and agriculture; Microorganisms in soil processes and their role in soil fertility; Distribution of soil microorganisms and soil microbial methods, organic matter decomposition, organic manure and composts; Microbial involvement in nutrient cycling; Nitrogen fixation, symbiotic, nonsymbiotic, associative organisms; Lichens, its structure and importance; Microbial crop pests, diseases and their control; Effect of pesticides on soil microflora; Industrially important microorganisms, role of microorganisms in food industry, microbial spoilage food, principles of food preservation, food sanitation, indicator organisms, food borne diseases and food poisoning.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Basic Prir Farm	nciples and Pr Animal Produ	actices of action	Course Code		PM 12052	
			п			Theory (hr)	20
Year	1	Somostor		Credits	02	Practical (hr)	20
	1	Semester	11	cicuits	02	Independent Learning (hr)	10

To provide the knowledge and adequate skills on farm animal production and its industrial importance for the students who can deal with farm animal housing, feeding, breeding and the management of farm animals.

Intended learning Outcomes:

On the successful completion of the course, the students should be able to:

- Describe present status of farm animal production, constraints and future potentials in Sri Lanka
- Identify and describe different breeds of domesticated farm animals and characteristics and the ecological requirements between different species and breeds of farm animals for maximum productivity
- Describe importance of farm animal housing, feeding, breeding and other important management practices
- Explain about overall animal farm planning

Course Capsule:

Present Status of Farm Animal Production in Sri Lanka; Different Breeds of Domesticated Farm Animals and Characteristics; Ruminant and Non-ruminant Animal Production Systems; Principles of Farm Animal Housing; Importance of Proper Animal Feeding and Types of Animal Feeds, Methods of Farm Animal Breeding and Breeding Stock Management; Agroecological Importance in Farm Animal Production; Animal Health Management I; Constraints and Future Potentials in Farm Animal Production in Sri Lanka.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Agr ar	riculture Engi nd Farm Mach	neering ninery	Course Code	PM 21063		
		2 Semester	т			Theory (hr)	30
Vear	2			Cradite	03	Practical (hr)	30
icai	~		1	cicuits	05	Independent	10
						Learning (hr)	10

To provide students with the knowledge and skills on the basic concepts, theories and application of Agriculture Engineering and Farm Machinery so that students can apply those knowledge and skills in Agriculture.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Describe the working principle of farm tractors and other commonly used Farm Machinery.
- Explain the Operation and maintenance of Agricultural machinery.
- Describe the fundamentals of irrigation management.
- Describe, Design, Operate and evaluate the methods of irrigation.

Course Capsule:

Farm power sources : Renewable energy sources; Internal Combustion engine : Engine types ; Engine Systems : Fuel system and air cleaners , cooling system , Electrical and ignition system, power transmission system, hydraulic system, lubrication system etc. ; Land Preparation Implement.; Seed and plant establishment implement; Water pump; Sprayers and dusters; Harvesting machinery; Post harvest and processing machinery; Safely use of farm machinery and ergonomics; Crop water requirement and irrigation scheduling; Irrigation methods : Surface, Sub-surface Drip and sprinkler.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Farr	n Animal Pro and Integrat	oduction ion	Course Code		PM 21072		
		2 Semester	Ι			Theory (hr)	20	
Vear	2			Cradite	02	Practical (hr)	20	
Itai				cicuits	02	Independent	10	
						Learning (hr)	10	

To provide knowledge and skills to develop productive and sustainable integrated farm animal production systems based on ruminants, non-ruminants and plantation sector, while meeting national demands for ruminant and non-ruminant products and conserving the natural resource base and increase the profitability and productivity of agriculture.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Describe the integration of farm animal in other agricultural systems, benefits and limitations.
- Describe farm animal waste management and utilization in integration systems.
- Develop productive and sustainable integrated farm animal production systems in the aim of increase the profitability and productivity of agriculture in Sri Lanka.
- State operational and managerial differences between private commercial farm and state owned farm.
- Explain different processed egg, meat and dairy products available in the market.

Course Capsule:

Introduction to sustainability, complementarity and integration; Farm animal waste management and utilization; Introduction to integrated farming systems in Sri Lanka; Livestock based integrated farming systems; Cattle, swine, poultry, duck, goat, fish; Feeding standards and ration formulation; Constraints and future potentials in integrated farm animal production systems in Sri Lanka; Planning of a livestock based commercial farm; Animal health management II; Introduction to egg, meat and dairy technology.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	P Fer	lant Nutrition tilizer Manag	n and gement	Course Code		PM 22082		
		Semester	Π	Credits		Theory (hr)	20	
Voar	2				02	Practical (hr)	20	
Ital	2				02	Independent	10	
						Learning (hr)	10	

To provide students with knowledge of the plant roots and soil relations and how they relate to soil fertility and productivity, roles of essential nutrient elements in plant growth, their function and the need to use fertilizer amendments and recommendations and methods of application, and the fertilizer use efficiency according to different climatic and soil conditions.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Describe and identify different plant nutrients, their functions, the deficiency symptoms and toxicities
- Identify the different types of fertilizers used in Sri Lanka, their characteristics and formulate and calculate fertilizer mixers
- Apply the acquired knowledge to increase the fertilizer use efficiency according to different climatic and soil conditions
- Describe the effects of nutrient mismanagement and their impact on the soil environment, precautions and integrated plant nutrient management system

Course Capsule:

Basic soil-plant relationship; Plant roots and soil relations, Soil fertility and productivity; Nutrient elements; classification and their function in plants, deficiency symptoms and toxicities. Nutrient availability from soil and atmosphere; Types of Fertilizers; Common inorganic fertilizers used in Sri Lanka. Fertilizer identification, formulations of mixed fertilizers and calculation, Factors affecting fertilizer use efficiency; Soil organic matter management, soil fertility maintenance, stubble management, different types of manure and their nutrient content, Effects of nutrient mismanagement; Integrated plant nutrient management system (IPNMS).

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Plant	ation Crop Pr	oduction	Course Code	PM 31092		
		3 Semester	Ι			Theory (hr)	20
Vorr	3			Credits	2	Practical (hr)	20
i cai					2	Independent	10
						Learning (hr)	10

To provide students with knowledge and skills on agronomy and processing of tea, rubber, coconut, sugarcane and spice & beverage crops.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain present status, morphological features and soil and climatic requirements needed for the tea, rubber, coconut, sugarcane and spice & beverage crops
- Describe the importance of nursery practices, field establishment & aftercare operations in tea, rubber, coconut, sugarcane and spice & beverage crops
- Explain the techniques of correct harvesting methods, post harvesting practices for achieving potential yields while maintaining the quality of end product

Course Capsule:

History and Statistics, Morphology, Varieties/Clones, Site Selection and Land preparation, Nursery Management, Field Establishment & Aftercare Operations, Harvesting and Processing.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Т	ea Production Processing	n and g	Course Code			
		3 Semester	Ι			Theory (hr)	20
Vear	3			Cradita	02	Practical (hr)	20
Ical	5			cicuits	02	Independent	10
						Learning (hr)	10

To provide in-depth knowledge and skills on tea agronomy and processing so that students will be able to apply them in management of tea plantations to improve productivity.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Compare the Sri Lankan tea industry with world tea scenario
- Identify the areas suitable for successful tea cultivation without (with respect for the environment) adverse impacts to the environment by considering soils, climatic conditions and topography of the area
- Describe agronomic practices of tea considering environment protection to increase yield
- Identify pest and diseases of tea and their damages and explain the environmental friendly management practices of these pest and diseases.
- Pluck tea in a cooperative manner and respect each other by maintaining good plucking table.
- Compare manufacturing processes of black and green tea
- Manufacture black teas which have high quality in a cooperative manner and with respect to each other considering personal safety
- Identify the prevailing manufacturing problems in the tea factories which they have visited and suggest suitable solutions to rectify these problems considering hygienic aspects of product (HACCP)

Course Capsule:

History of tea cultivation in the world and Sri Lanka; Statistics; Soil and climatic requirements; Botany of tea; Different tea jats; Cultivar and cultivar recommendation; Tea nursery management; Land preparation; Soil conservation; Soil rehabilitation; Planting; Bringing young tea into bearing; Shade tree management; Weed management; Pruning; Fertilizer application; Deficiency symptoms; Pest and disease management; Plucking; Processing and manufacturing.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Rı	ıbber Product Processing	ion & 5	Course Code	PM 31112		
			Ι			Theory (hr)	20
Vear	3	3 Semester		Cradita	02	Practical (hr)	20
Icai	5			Cicuits	02	Independent	10
						Learning (hr)	10

To provide the students with an in-depth knowledge on natural rubber production and processing. Further, the students will acquire a basic understanding on value addition for natural rubber and management of rubber cultivations.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain natural rubber production and processing techniques
- Apply the knowledge gained for efficient management of rubber cultivations and raw rubber processing
- Identify and develop areas for value addition in natural rubber

Course Capsule:

History and statistics; Botany of crop; Climatic requirements; Land suitability; Nursery management & types of planting material; Land preparation; Soil & moisture conservation; Field planting; Weed management; Fertilizer/Manure use; Pest and disease management; Harvesting; Yield Stimulation; Rain guards; Natural Rubber Latex; Preservation of field latex; RSS production; Crepe rubber production; Centrifuge latex production; Dry & Latex based rubber products; Principles of rubber products manufacture.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	C Prod	Coconut & Oil luction and Pr	Palm ocessing	Course Code			
			Ι			Theory (hr)	20
Vor	3	3 Semester		Cradita	2	Practical (hr)	20
Tear	5			Cicuits	~	Independent	10
						Learning (hr)	10

To provide students with the knowledge and skills related to production, manufacturing value addition and product development related to Coconut and Oil palm.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain present status, morphological features and soil and climatic requirements needed for the coconut/oil palm
- Describe importance of hybrid cultivars and method of developing hybrids in coconut/oil palm
- Explain the importance of nursery practices, field establishment & aftercare operations on the economic performance of the crops
- Explain and demonstrate good management practices in the plantations
- Explain the techniques of correct harvesting methods, post harvesting practices for achieving potential yields while maintaining the quality of end product
- Explain the procedures involved in processing of various coconut based products
- Describe and demonstrate the importance of value addition and product development in coconut/oil palm

Course Capsule:

Introduction; History and statistics on coconut and oil palm, morphology of coconut and oil palm; Varieties and forms; Comparison of morphological features of varieties, different forms, development of hybrid cultivars; Site Selection and land preparation; Effects of soil and climatic factors on coconut and oil palm, land suitability classes, land preparation, lining and planting pit preparation; Nursery Management; Site selection for the nursery, nursery types, selection of seedlings; Field establishment aftercare operations; Spacing and planting density, planting systems, weed management, irrigation, cover crop management, pests and diseases management, nutrition and fertilizer use; Intercropping; Importance of intercropping, guidelines for management of intercrops; Harvesting and processing; Identification of correct harvesting stage of the crop, postharvest practices, processing of different coconut and oil palm based products; Value addition and quality management; Importance of value addition, practice related to quality management and value addition of coconut and oil palm (From farm to processing).

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Spic Prod	e and Beverag uction and Pr	ge Crops ocessing	Course Code	PM 31132		
			Ι			Theory (hr)	20
Vor	2	3 Semester		Cradita	02	Practical (hr)	20
Tear	5			cicuits	02	Independent	10
						Learning (hr)	10

To provide students with the knowledge and skills related to production, manufacturing value addition and product development related to Spice and beverage crops.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain present status, morphological features and soil and climatic requirements needed for the Spice and beverage crops
- Explain and demonstrate soil & moisture conservation practices used in plantations in a given situation
- Identify new cultivars and explain the importance of cultivar selection during the establishment of export agricultural crops
- Explain the importance of nursery practices, field establishment & aftercare operations on the economic performance of the crop
- Explain the techniques of correct harvesting methods, post harvesting practices for achieving potential yields while maintaining the quality of end product
- Explain the procedures involved in processing, quality management & packing of export agricultural crop products
- Describe and demonstrate the importance of value addition and product development and health aspects of export agricultural crops

Course Capsule:

Introduction; History and statistics on spice and beverage crops, specific features, Morphology of each spice and beverage crops (Coffee, Cocoa, Cinnamon, Cardamon, Clove, Nutmeg, Pepper, Citronella, Lemon grass, Vanilla, Betel); Site Selection and land preparation; soil and climatic factors, Land preparation practices for different crops, Soil and moisture conservation; Improved cultivars and varieties; Nursery Management; site selection for the nursery, nursery practices for different crops; Field establishment & aftercare operations; pests and diseases and its control; Harvesting and processing; Identification of correct harvesting stage of different crops, postharvest practices, processing and packing; Value addition and quality management; Importance of value addition, practices related to quality management and value addition (From farm to processing), international certifications related to spice and beverage crops.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Pote Pro	ential Plantatio duction & Pro	on Crop cessing	Course Code	PM 31142		
		3 Semester	Ι	Credits		Theory (hr)	20
Vear	3				02	Practical (hr)	20
Tear					02	Independent	10
						Learning (hr)	10

To provide the students with an in depth knowledge on Potential plantation crop production and processing. Further the students will acquire a basic understanding on management and value addition in such crops.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain the production and processing techniques of potential plantation crops
- Apply the skills for management of potential plantation crops
- Identify areas for value addition

Course Capsule:

Regarding Cashew, Sugarcane, Arecanut, Kithul, Palmyrah, Medicinal plants and Gliricidia History and statistics; Botany of crops; Climatic requirements; Land suitability; Planting material production; Land preparation; Soil & moisture conservation; Field planting; Weed management; Fertilizer/Manure use; Pest and diseases; Harvesting; Processing; Value addition.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Agro	forestry and (Systems	Cropping	Course Code		PM 31151	
			т			Theory (hr)	15
Vear	3	3 Semester		Cradita	01	Practical (hr)	00
Icai	5		1	cicuits	01	Independent	05
						Learning (hr)	05

To provide in-depth knowledge and skills to students in order to incorporate natural conditions of forests within agricultural land use systems and illustrating total sustainability concept.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain theoretical knowledge base behind agroforestry systems
- Differentiate traditional agriculture and agroforestry land use systems based on the total sustainability concept
- Evaluate importance of agroforestry systems in terms of socio cultural, economic and environmental viewpoints

Course Capsules:

Introduction to agroforestry; Classify agroforestry systems; Productive and protective functions of agroforestry systems; Components in an agroforestry system; Importance of tree crop component in an agroforestry system; Effects of trees on soil and climate; Sustainability of mixed plant communities; Above ground and underground interactions; Select suitable tree species for different agroforestry systems; Selection of tree species for different agroforestry systems; Selection of tree species for different agroforestry systems; Establish and management of agroforestry systems; Evaluate agroforestry systems; Socio cultural importance of agroforestry systems; Valuation of agroforestry systems and marketing of agroforestry systems.

- Continuous Assessments 30%
- End Semester Examination 70%

Course Title	Ma	arketing and Q Manageme	Quality nt	Course Code	PM 31162		
		3 Semester	т			Theory (hr)	20
Vear	3			Cradita	02	Practical (hr)	20
I cal	5		1	cicuits	02	Independent	10
						Learning (hr)	10

To provide knowledge and skills on marketing and quality management with respect to plantation and other agri-business crop products, so that students will be able to apply acquired knowledge to manage the quality and other marketing related activities to achieve desired organizational objectives.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain the role of plantation crop products in the economy
- Discuss the world trade of plantation and other commodity markets
- Analyze the tea, rubber, coconut, and spice and beverage crop marketing channels
- Analyze the auctions in market of plantation crop products in Sri Lanka and world
- Discuss the role of government in regulating marketing of plantation crop products
- Assess how companies organize their marketing efforts across a variety of business settings
- Explain the concept of total quality management
- Discuss the concept of quality cycles and its importance in plantation crop produce
- Describe the importance of standardization in plantation crop produce marketing
- Demonstrate oral and written communication skills and improve the ability to work effectively in a team, both of which are essential to a business career

Course Capsule:

Introduction to marketing and quality management in plantation crop products; Essence of marketing; Market structures, Market power; Distinguish marketing characteristics of plantation crops against other agribusiness products; Tea marketing: supply chain, product structure, distribution network; value addition and brand promotion, tea auction; Rubber marketing: marketing channels; natural rubber product mix, marketing channels competition in the world natural rubber market; Coconut marketing: product mix, marketing of plantation crop products; Food and marketing regulations; International trade, international and regional trade agreements important for plantation crop product marketing; Definition of quality, the concept and applications of total quality management in plantation crop products; Concept of quality cycles and its importance in plantation crop produce marketing; Importance of standardization in plantation crop produce marketing.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Reso	ource Manage Plantation	ement in s	Course Code				
			п			Theory (hr)	20	
Vear	3	3 Semester		Credits	02	Practical (hr)	20	
Ital	5				Cieuns 02	02	Independent	10
						Learning (hr)	10	

To provide knowledge and skills necessary to manage plantation resources in a sustainable manner, so that students will be able to apply acquired knowledge and skills in managing plantation estates and other agri-business enterprises in an efficient and effective manner.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain the concept of sustainable resource management
- Discuss the key resource economic concepts related to plantation resource management
- Describe the importance of land, labour and capital resources in plantations and other agri-business enterprises
- Discuss the importance of managing land, labour and capital resources in plantations and other agri-business enterprises
- Use of capital investment appraisal techniques in resource planning and management in plantation and other agri-business projects
- Describe the importance of energy resources in plantations and other agri-business enterprises

Course Capsule:

The concept of sustainability; Introduction to resource economics; Economics of renewable and non-renewable resources; The history of plantation industry with respect to the changes of land ownership, resource allocation, and management patterns; Theory of planning process in plantations; Approaches to resource planning and management; Present corporate structure in plantation industry; Large plantation vs. smallholders with respect to resource availability; Early laws that favoured the plantation sector; The role of government in plantation management; Land resources: classifications of estates based on elevation and land sizes, land degradation and its causes and corrective measures; Labour resources: labour availability and labour productivity indices in plantation sector, current and emerging issues with respect to labour and strategies to overcome them; Capital resources: capital investment appraisal techniques in resource planning and management in plantations and other agri-business enterprises; Importance of energy resources in plantations and other agri-business enterprises.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Estate & Financial Management			Course Code	PM 32182		
		3 Semester	П		02	Theory (hr)	20
Voar	3			Cradits		Practical (hr)	20
Tear				Cleans		Independent	10
						Learning (hr)	10

To provide students with an in-depth knowledge on management of Estates with sustainable high performance and optimum use of resources.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain the managerial structure and responsibilities of different hierarchical positions in a plantation
- Apply financial and physical performance tools used in plantation management
- Evaluate the overall performance of a plantation
- Describe managerial skills for efficient management of plantations

Course Capsule:

The plantation sector of the country and its management system; Hierarchical positions and responsibilities; Worker recruitment to check roll, service conditions, wages, terminal benefits and management; New and replanting decisions and resources; Principles of crop estimation and harvester requirement; Preparation of estate budgets; Management control systems for performance – monthly progress report; Management control systems for performance – monthly accounts; Developing performance parameters – capital, revenue, processing; Empowerment of field and factory staff through HRD (TASK); Worker empowerment through HRD (TASK); Marketing of produce; Performance incentives; Code of Ethics for plantation managers.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	ŀ	Advance Irriga Manageme	ation nt	Course Code		PM 32192	
			п			Theory (hr)	20
Voar	З	Somostor		Cradits	02	Practical (hr)	20
Icai	5	Jemester	- 11	cicuits	02	Independent	10
						Learning (hr)	10

To provide knowledge and skills on designing, installation, operation, maintenance and evaluation of advance irrigation methods to optimize irrigation based on prevailing soil, climate and environmental conditions.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain the fundamentals of advance irrigation management
- Select particular methods and instrumentation to formulate a scientific irrigation schedule based on field conditions
- Describe, design, operate and evaluate advance methods of irrigation

Course Capsule:

Climate and environment in relation to irrigation; Crop water requirement and scientific irrigation scheduling; Measurement of irrigation water; Advanced irrigation methods (Sprinkler and Drip irrigation); Improvements in advanced irrigation methods (Automated irrigation systems, Center pivot sprinkler irrigation, etc..); Chemigation/fertigation concept and applications; Designing aspects of advance irrigation systems, Maintenance of irrigation systems, performance evaluation of irrigation systems

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	C E	limate Chang nvironmental Physiology	e and Crop 7	Course Code	PM 32202		
	2		п		2	Theory (hr)	20
Voar		3 Semester		Cradita		Practical (hr)	20
Ital	5		11	Cleuits	2	Independent	10
						Learning (hr)	10

To provide the students with knowledge on climate change, and its impact to the ecosystem, with special emphasize to crop production (through crop physiological processes), so that they will be able to identify and apply suitable adaptation and mitigation strategies to minimize the adverse consequences of climate change to ecosystem and crop production.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain the climate, weather and factors affecting the climate change
- Describe the impact of climate change on various eco-systems-agriculture, land resources, water resources, and bio-diversity
- Describe the climate and weather extremes and their likelihood of occurrence
- Discuss the physiological mechanisms involved in crop responses to diverse and fluctuating environmental conditions
- Explain mitigation and adaptation strategies to overcome the impact of climate change to crop plants
- Explain plant responses to abiotic stresses, particularly plant growth and development and to integrate those plant processes under multiple stress conditions
- Describe the range of experimental approaches currently employed to estimate the future impact of climate change on ecosystems, crop production, and food quality

Course Capsule:

Introduction to climate change; Earth's energy balance; Natural temporal variability in the climate system; Human impacts on the climate system; Consequences of climate change; Adaptation and mitigation strategies. Introduction to environmental crop physiology, factors that limit crop productivity; Trends that shape the future: population, climate change, and crop productivity; Stress physiology and environmental extremes limiting crop productivity; Photosynthesis and other plant physiological processes against climate variables; Physiological effects of CO₂ enrichment and temperature rise on crop species; Tools and protocols to evaluate the climate change effects on crop production.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Ι	Ecosystem Ca Accounting	rbon g	Course Code			
		3 Semester	п		02	Theory (hr)	20
Voar	2			Cradita		Practical (hr)	20
Ical	5		11	cicuits	02	Independent	10
						Learning (hr)	10

To provide understanding and skills on global carbon distribution, its importance for the human being, environment and Agriculture with special reference to aspects in *above* and *below* ground carbon management and their potential to carbon sequestration.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain importance of carbon management
- List sinks and sources of carbon
- Describe above ground carbon management
- Describe below ground carbon management
- Explain, relate and apply latest developments related to Intergovernmental Panel on Climate Change
- Apply knowledge towards development of Sri Lankan national carbon accounting system

Course Capsule:

Importance of carbon, distribution of carbon across spheres; Above ground carbon management, below ground carbon management; Potential of carbon sequestration by above and below ground ecosystems; Role of intergovernmental panel on climate change; Framework towards national carbon accounting system; Use of carbon simulation modeling with different scenarios; Basic and modern methods of quantification and modelling of above and below ground carbon

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Pr	ecision Agric Technolog	ulture y	Course Code			
		3 Semester	Π			Theory (hr)	20
Voar	2			Cradita	02	Practical (hr)	20
Teal	5			cicuits	02	Independent	10
						Learning (hr)	10

To provide in-depth knowledge and skills on precision agriculture technology so that students will be able to acquire, process and integrate crop/soil data with management decisions at farm scale for efficient and sustainable utilization of resources.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Define basic components of precision agriculture
- Demonstrate a knowledge on GIS, GPS remote sensing technologies and their uses within precision agriculture
- Demonstrate an understanding of various forms of data acquisition methods and perform analysis related to precision agriculture
- Apply knowledge gained to solve environmental problems and increase crop productivity

Course Capsules:

Introduction to precision agriculture; Components of precision agriculture; GIS, GPS and remote sensing usage in precision agriculture; sampling for precision agriculture; principles and applications of proximal plant and soil sensing; concept of spatial variability; Variable rate technologies (VRT) in precision agriculture and delineation of management zones; Use of modern software related to precision agriculture; economics of precision agriculture technologies.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	C	Cleaner Produ Technolog	ction y	Course Code		PM 32232	
		3 Semester	Π			Theory (hr)	20
Voar	З			Cradita	02	Practical (hr)	20
Tear	5			Cicuits	02	Independent	10
						Learning (hr)	10

To provide knowledge and skills on application of an integrated preventive environmental strategy to process, products and services to improve ecofriendly, and reduce risk to human and environment.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain the concept of cleaner production; the role of energy use in industrial and commercial sector establishments and its implication on the environment
- Explain pollution and energy consumption abatement measures using cleaner production concepts of mass and energy balance and tools to conduct energy and environmental audits
- Apply Cleaner Production concept in advancing environmental and economical aspects of a given industry

Course Capsule:

Introduction to cleaner production(CP); Role of CP in industrial sector; Energy and environmental parameters / concepts for CP: basic terminology, units, measurement technologies; Waste and energy audit methodologies: mass and energy balances; Unit processes associated with energy consumption and pollution generation; Pollution prevention; Process optimization; Energy management concepts; Occupational health, safety and quality of products, Case studies; Use of CP on the processing of plantation crops

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Fc Aspe	ood Safety & F cts of Plantati	Health on Crops	Course Code			
		3 Semester	Π			Theory (hr)	20
Vear	2			Cradita	02	Practical (hr)	20
Tear	5			cicuits		Independent	10
						Learning (hr)	10

To provide knowledge and skills on food safety and health aspects of plantation crops so that students will be able to apply them in hygienic and healthy food production.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain importance of food safety
- Describe certifications related to food safety
- Explain food safety hazards
- Demonstrate the tests used in food safety by microbial and chemical methods
- Describe bioactive compounds and natural antioxidants in plants
- Quantify bioactive compounds and antioxidant capacities of plant materials
- Determine bioavailability of antioxidants
- Explain health benefits of plantation crops

Course Capsule:

Importance of food safety, quality control, quality assurance, quality management and food Safety Standards; Environmental management system, occupational health and safety, ethical partnership etc.; Different types of related activities: GLOBAL GAP, UTZ, BRC, IFS, organic certification, HACCP and ISO 22000; Clauses of standard (ISO:22000): general requirements, management requirements, realization of safe product, updating FSMS, verification planning, auditing, mgt. review; Food safety hazards in general, food safety hazards related to plantation productions; Microbiological methods (testing), chemical testing, certification protocol and practical approach of food safety; Bioactive compound in plants, their roles and biosynthesis pathways; Functional foods, natural antioxidants in plants; Methods to quantify bioactive compounds; Methods to quantify antioxidant capacities; Methods to determine bioavailability: rat models, cell culture models; Health benefit of tea; Health benefit of Coconut, EAC crops and medicinal plants.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Fac Ei	ctory Machine nergy Manage	ery and ement	Course Code	PM 32252		
		3 Semester	Ш			Theory (hr)	20
Vear	3			Cradita	02	Practical (hr)	20
Icai				Cicuits	02	Independent	10
						Learning (hr)	10

To provide knowledge and skills on operation and maintenance of machinery used in processing of products of plantation crops and evaluate technical and economic feasibility of operating those machines with renewable energy sources.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain the working principle, operation and maintenance of machines used in processing of products of plantation crops
- List potential power sources
- Explain principles and practices of renewable energy sources applicable for plantations
- Explain possible improvements could be done in machines to improve their ecoefficiency
- Program product processing cycle

Course Capsule:

Basic mechanics of machinery; Power transmission systems; Conveyers; Types of dryers: fluidized bed dryers, endless chain pressure dryers, shelf dryers; cyclone separators; Machinery used in tea production: withering troughs, rollers, sifting and grading machines; Machinery used in processing desiccated coconut: de-husking, de-shelling, splitting, pulverizing, sterilizing, desiccating and packing machines; Copra and Oil; Dryers and Extractors; Machinery used in processing rubber: rollers, laminating machines and dryers; Introduction to energy sources; Renewable energy conversion; Solar power utilization; Hydro power utilization; Use of wind power in Plantations; Recovery of biological conversion products (Composting, Bio-gasification).

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	V	Vaste Manage	ment	Course Code	PM 32262		
		3 Semester				Theory (hr)	20
Voar	3		П	Cradits	02	Practical (hr)	20
icai	5		- 11	cicuits	02	Independent	10
						Learning (hr)	10

To provide knowledge and skills on technology, organizational and legislative development practices and financial burdens and benefits of handling solid waste.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Classify solid waste
- Describe functional elements of solid waste
- Identify the characteristics of waste
- Explain modern treatment technologies and regulations as well as sustainability of the chosen technology
- Describe suitable actions and plans to handle problematic situations of waste
- Describe the management of a given disposal system

Course Capsule:

Classification of solid waste; Waste generation aspects; Waste characteristics; Waste collection, storage and transport; Waste disposal; Sanitary land fill; Waste processing techniques; Source reduction; Product recovery and recycling; Biological conversion of products; Compost and biogas; Incineration and energy recovery; Hazardous waste management; Integrated waste management.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Va	lue Addition	in Tea	Course Code	PM 32272		
		3 Semester	Π			Theory (hr)	20
Voar	2			Cradita	02	Practical (hr)	20
icai	5			cicuits	02	Independent	10
						Learning (hr)	10

To provide knowledge and skills on principles of value addition and existing value added tea products so that students will be able to develop innovative value added products or ideas or concepts.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Differentiate different types of tea manufacturing
- Explain importance of value addition in tea
- Describe manufacturing steps of different value added tea products.
- Develop innovative value added products of tea using their initiatives in competitive basis

Course Capsule:

Different types of tea in the world, principles of value addition, different value added tea; Green tea manufacturing; Oolong tea manufacturing; CTC tea manufacturing; Packeted tea, tea bags; Instant tea, Scented tea / flavored tea; Carbonated tea, ice tea, tea wine, herbal tea; Tea cosmetic products; Tea sweet and bakery products; Tea pharmaceutical products

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Ru	ıbber based Pr Developme	roduct nt	Course Code	PM 32282		
			п			Theory (hr)	20
Voar	3	3 Semester		Credits	02	Practical (hr)	20
Ital						Independent	10
						Learning (hr)	10

To provide students with a basic knowledge on rubber based product manufacture.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- List different types of raw rubbers and their technical properties
- Explain the basic principles in rubber product manufacture
- Identify latex based rubber products and explain the general manufacturing process
- Identify dry rubber based products and explain the general manufacturing process

Course Capsules:

Different types of raw rubbers and their technical properties; Principles of rubber product manufacture; Latex based products manufacture; Dipping, Foaming, Extrusion, Casting; Dry rubber based products manufacture; Mixing; Shaping, Compression molding, Extrusion, Calendaring; Vulcanization

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Tren	ds in Coconut Developme	Product nt	Course Code	PM 32292		
		3 Semester	II			Theory (hr)	20
Vear	З			Credits	2	Practical (hr)	20
icai	5				2	Independent	10
						Learning (hr)	10

To provide students with in depth knowledge and skills related to processing of coconut based products, value addition and different ways of product development.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain importance of value addition and product development
- Describe different methods of value addition
- Categorize different coconut based products
- Describe processing method of different coconut based products
- Apply knowledge to develop various coconut based products

Course Capsule:

Introduction; Desiccated coconut manufacturing; Copra processing; Processing of Vinegar and Wine from coconut water; Production of Coconut Jam; Production of Coconut cream; Different products of coconut sap; Different products of coconut shell; Brown fiber and White fiber processing; Other miscellaneous products; Current research related to product development in coconut.

- Continuous Assessment 30%
- End Semester Examination 70%
| Course
Title | e- | -Agriculture & | z MIS | Course
Code | | PM 41302 | |
|-----------------|-----|----------------|-------|----------------|----|----------------|----|
| | | | т | | | Theory (hr) | 20 |
| Vear | 4 | Somostor | | Cradite | 02 | Practical (hr) | 20 |
| Ical | - 1 | Semester | 1 | Cleuits | 02 | Independent | 10 |
| | | | | | | Learning (hr) | 10 |

To provide knowledge and skills on handling ICT tools for the advancements of agriculture and develop information systems for better management of resources in agriculture.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Describe ICT support available for Agriculture
- Demonstrate how e-agriculture can be practiced in Sri Lanka
- Describe how agriculture Information dissemination and accessing is possible using mobile ICT devices
- Describe how to use e-commerce for better deals for supplies and agriculture product sales
- Describe the integrative knowledge of information technologies (IT) applied for management in organizations
- Describe how modern IT is shaping the operations of modern business environment
- Analyze information security risk and prepare an information security plan
- Prepare a data disaster recovery plan and Evaluate information systems

Course Capsules:

Introduction to e agriculture, Impact of ICT in Agriculture Development, Pricing Information, Demand Information, Production and Agriculture Extension, Target oriented database development, Software for e agriculture; Mobile technology trends, Smartphone Apps in Agriculture, Crop cultivation information system, Accessing Markets and Value Chains, Accessing Public Service Provision; Introduction to e-commerce & m-commerce, Components of e-commerce, Building an e-commerce site; Introduction to Information Systems, IT usage in different management levels, IT in business processes related to agriculture, ERP and SAP, Information systems manager and information system, Information security standards, Disaster recovery Plan, Compare SAP with other ERP software

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	e-So	lutions to Pla and Processi	ntations	Course Code		PM 41312		
		4 Semester	Ι			Theory (hr)	20	
Vear	4			Cradita	02	Practical (hr)	20	
Ital	Т			cicuits	02	Independent	10	
						Learning (hr)	10	

To provide knowledge and skills on basic electronics and computing that lead to develop solutions to address the problems and improvements in plantation industries allowing students to develop solutions based on computer technology and microcontrollers.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain basic electronics terminology,
- Identify & describe requirements for an computer controlled agriculture and processing system
- Design an computer controlled agriculture and processing system
- Search and compare the functionality of software related to plantation industry
- Develop a e- solution to address problem/s in plantation

Course Capsule:

Introduction to e-solution: Hardware, software, wired & wireless technologies; Electronic terminology, electronic sensor, micro controller and relay switch, Software related to tea, rubber, coconut and minor export crops; Introduction to basic electronics: Components, circuits and devices; Introduction to micro controllers, Introduction to automated agriculture, Problem identification, analysis, designing and development of an automated system for plantation sector.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	O	organic Agricu	ılture	Course Code		PM 41322		
	4		Ι			Theory (hr)	20	
Vear		4 Semester		Cradits	02	Practical (hr)	20	
Tear				Cicuits	02	Independent	10	
						Learning (hr)	10	

To provide the knowledge and skills in organic agriculture and its ecological production management system while promoting biodiversity, biological cycles and soil biological activities focused on on-farm management practices that restore, maintain and enhance ecological harmony.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- State operational and managerial differences between organic agriculture and conventional agriculture
- Describe different organic agricultural systems found in the world and in Sri Lanka
- Explain present status, future potentials and ecological value of organic agriculture in the world and in Sri Lanka
- List constraints to increasing organic agriculture in Sri Lanka
- Describe general inspection and certification procedure for organic agriculture
- Evaluate feasibility of organic agriculture inspection and certification procedures with relate to local practices applied for organic agriculture

Course Capsule:

Introduction to organic agriculture; Scope, world history and opportunities; Organic agriculture vs. conventional agriculture; Organic agricultural systems; Organic crop production, organic animal production; Organic agriculture in Sri Lanka; Organic tea, rubber, coconut, paddy, minor export crops, vegetables, textiles and present/future potentials; Techniques used in organic agriculture; Organic products processing: tea, rubber, coconut, oil, spices, fruits; Constraints to increasing organic agriculture in Sri Lanka; Organic agriculture inspection and certification procedure; Traceability, separation, EU regulation for organic agriculture, USDA regulation for organic agriculture, local and international organizations engaged in organic agriculture inspection and certification and their contribution for development of organic agriculture in Sri Lanka; Economic and ecological importance of organic agriculture.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	E	Environmenta (E-GIS)	l GIS	Course Code	PM 41332		
	Л		т			Theory (hr)	20
Vear		4 Semester		Cradits	02	Practical (hr)	20
Tear	т		1	Cicuits	02	Independent	10
						Learning (hr)	10

Course is designed to impart knowledge and skills in spatial analysis for effective decision making in agricultural and environmental context. Course consists of thorough theoretical knowledge related to geographical information system (GIS); Global Positioning System (GPS) and Remote Sensing (RS). In addition to theoretical context, course is also aimed at providing students with hands on knowledge on designing, implementation and evaluation of GIS projects related to agriculture and environment. Practical exercises and field excursion of the course is focused on data structures of GIS, data acquisition, data management, processing of geospatial data and case studies related to land resource assessment, digital terrain modelling, land-cover / land use assessment, sub-catchment modelling, ecological applications, and digital soil mapping for sustainable management of fragile resources. A 2 day field excursion also included which consists of field GPS survey (1 day) and visiting government agencies and research institutes (1 day) whom involved in using GIS for decision making.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Differentiate between spatial data and non-spatial information
- Identify sources of geospatial data, acquisition and processing of them using appropriate tools
- Apply appropriate geospatial models for practical decision making in agricultural and environmental context
- Apply critical analysis to solving emerging issues related to agriculture and environmental through spatial analysis
- Communicate results of geospatial analysis effectively by means of oral and written form

Course Capsule:

Introduction to Geographic information science; Fundamentals and components of GIS, GPS and remote sensing; Coordinate systems and map projections; Introduction to spatial statistics; Introduction to digital terrain modeling, different data sources, standardization and interoperability; Steps towards GIS project and project evaluation; Use of modern software related to GIS and remote sensing for management and decision making related and environmental and agricultural context

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Integ	rated Farming	, Systems	Course Code	PM 41342		
		4 Semester	т			Theory (hr)	20
Vear	4			Cradita	02	Practical (hr)	20
Tear	T		1	cicuits	02	Independent	10
						Learning (hr)	10

To provide knowledge and skills to develop productive and sustainable integrated farming systems while conserving the natural resource base and increasing the profitability and productivity of agriculture.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain on integrated farming systems, benefits and limitations
- Illustrate linkages and interactions between crop and livestock components
- Describe farm origin waste management and utilization in all possible integrated systems
- Develop productive and sustainable integrated farming systems in the aim of increase the profitability and productivity of agriculture in Sri Lanka
- Contrast operational and managerial differences between integrated private commercial farm and state owned farm

Course Capsule:

Introduction to sustainability, complementarity and integration; Farm origin waste management and utilization; Introduction and classification of integrated farming systems in Sri Lanka; Home gardening; Livestock based integrated farming systems; Crop based integrated farming systems; Linkages and interactions between crop and livestock components; Constraints and future potentials in integrated farming systems in Sri Lanka; Planning of an integrated commercial farm

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Land	d Survey and T	Leveling	Course Code	PM 41352		
			т			Theory (hr)	20
Vear	4	4 Semester		Cradite	02	Practical (hr)	20
Ical	Ŧ		1	Cleuits	02	Independent	10
						Learning (hr)	10

To provide knowledge and skills on basic aspects of land surveying and handle basic surveying equipment to perform surveying and leveling tasks so that students will be able to apply the knowledge in surveying and leveling of lands.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Use basic land surveying and leveling tools and equipment precisely
- Measure linear and angular horizontal distances between points of the earth surface
- Measure relative heights of different objects on or below the earth surface and to determine the undulation of the ground surface
- Apply basic land surveying and leveling techniques in preparing maps and profiles of the objects on the earth surface and to produce written documents detailing field work, observations and calculations to solve practical survey problems
- Measure the area of the given land and block it into subdivisions

Course Capsule:

Introduction to fundamentals of land surveying and leveling; Measurement of linear and angular measurements; Leveling: Differential leveling, Profile leveling; Plane table surveying; Chain surveying; Contour surveying.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	G	reen Technolo Agricultur	ogy in e	Course Code	PM 41362		
			Ι			Theory (hr)	30
Vear	3	3 Semester		Cradita	02	Practical (hr)	00
Tear	5			Cicuits	02	Independent	10
						Learning (hr)	10

To provide technical and scientific knowledge and skills on environmental healing technology that reduces environmental damages so that students will be able to apply them to sustainable agricultural production, poverty reduction and environmental protection.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Describe the importance for developing technology in ways that do not damage or deplete the Earth's natural resources.
- Explain and explore the possible ways to reduce fossil fuel usage and to minimize damage to human, animal, and plant health, and finally to the world.
- Explain the use of re-usable and recyclable products.

Course Capsules:

Sustainable resource management, Classification of natural resources , Natural resources available in Sri Lanka, Efficient use of natural resources, Command and control approach to management of natural resources, Other methods to manage natural resources, Sustainable environmental designs, Land use planning, Green buildings, Sustainable environmental friendly technologies in industrial sector, Sustainable environmental friendly technologies in agricultural sector, Sustainable energy sources, Renewable energy technology: Solar photovoltaic technology, Wind energy, Biofuel, Biogas, Hydropower plants, Improved Water Mills, Geothermal technology, Energy analysis and energy management, Current issues in energy sources and future energy options, Household and country level energy saving options, Organic agriculture, bio transgenics (BT), Organic and biodynamic farming systems, Integrated Pest Management (IPM); Water and waste management: Recycling technology, Sewage treatment and solid waste management, Water purification

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title		Information Communicat Technolog	and tion y	Course Code			
		1 Semester	т			Theory (hr)	20
Voar	1			Cradits	02*	Practical (hr)	20
Ieal	1		1	cicuits	02	Independent	10
						Learning (hr)	10

*Non-GPA Course Unit

Aim of the Course:

To provide students with the basic knowledge and skills in Information and Communication Technology required for academic working environment that helps them to increase their efficiency and productivity during the academic and professional carriers.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Describe the basic terminology used in personal computing and define the basic concepts of Information and Communication Technology (ICT)
- Demonstrate basic operations in the desktop environment of Windows
- Prepare a document using a word processing package
- Prepare a data sheet using a spreadsheet package
- Design a presentation using a presentation package
- Search for information using a browser on the Internet and communicate through Internet using common tools

Course Capsule:

Basic Concepts: computer system, software& hardware, computer network& Internet, working with the Windows, setting the environment of a computer, storing and managing data, files and folder handling; Word processing: MS Word interface, main features of commonly used word processing applications, editing and formatting text, working with paragraph, working with tables, working with illustrations, word options, setting up pages, printing documents; Spreadsheet: Excel interface, basic file operations, environment settings, working with cells, formatting cells and worksheets, working with functions, charts, setting up pages, printing worksheets; Presentation application: PowerPoint interface, slide layout, slide design, formatting presentations, slide transition, animations, delivering the presentations, presentation view, master view (master slide); Internet: history, facilities/benefits of Internet, how to connect to Internet, web browsers, search engines, search strategy, e-mail, e-Learning (LMS), future of Internet.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	App and	plication of So Web Techno	oftware ologies	Course Code	CU 12022		
		1 Semester	п			Theory (hr)	15
Voar	1			Credite	02*	Practical (hr)	30
Teal	1		- 11	cicuits	02	Independent	10
						Learning (hr)	10

*Non-GPA Course Unit

Aim of the Course:

To provide students with in-depth knowledge and proficiency in common application software and web Technology so that students can make use of latest technologies and advance features in their respective fields of study efficiently and productively.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Use and configure essential office applications and prepare professional documents and reports
- Prepare a database to store, retrieve and manage data and maintain professional database
- Apply technologies and protocols associated with Internet and searching strategies
- Use online communication &collaboration tools
- Create static/dynamic website that meet specified needs and interests and describe key web hosting and maintenance practices.

Course Capsule:

Word Processing: footnotes,

endnotes, citation, bibliography, tables of contents, indexes, cross-references, fields, forms, templates, breaks, review; compare documents in word processing; Presentations: Master slide, review & comments, custom animation, record narration, rehearse timing, encrypt presentation; Databases: Key concepts of database development, database designing, relational database, normalization, integrity constraints, development of database, append data, controls and sub-forms, reports, queries; Internet: security and storage, Internet services, web-based information, search strategies, web credibility, protocols; E-mail, calendar, cloud storage and social networks, social media blogs, social bookmarking; Web Editing& Authoring: HTML, web image and video format, forms, cascading style sheets, client and server side scripting, WAMP, content management system, hosting & maintenance.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Dec	ision Support	System	Course Code		CU 22033		
		2 Semester	П		03	Theory (hr)	15	
Vear	2			Cradite		Practical (hr)	60	
Ieal	2		11	cicuits	05	Independent	10	
						Learning (hr)	10	

To provide students with in-depth knowledge and skills indecision support systems, use information processing as the managerial work, problem solving and decision making with computer - based systems

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Describe the importance of decision making in management
- Explain the advantages/disadvantages of different types of decision support systems
- Describe how to evaluate the success/failure of Decision Support Systems
- Design models, solutions and alternative choices for decision makers.
- Analyze practical problems in agriculture
- Use DSS software tools.
- Use spreadsheet and VBA programming related to DSS
- Analyze ,design and create practical solutions for a given problems
- Compare with other groups in order to make different decisions.

Course Capsule:

Introduction to DSS: DSS,MIS and ERP, Characteristics of DSS, Use of DSS, History of DSS Applications of Decision Support Systems, Capabilities of Decision Support System; DSS in managerial work: Roles of managers, Functions of organization, How systems help for managerial work, Information processing, Components of Decision Support Systems: Database management system, Model management system; Classification of DSS: Text oriented DSS, Database Oriented DSS, Spreadsheet Oriented DSS, and Compound DS; Decision making and problem solving, Cloud based system and others, Decision Support Systems in Agriculture, Spreadsheet application in decision support system, VBA for Excel to macro programming, Develop agriculture base DSS

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	A	cademic Engl	ish - I	Course Code	EU 11012		
		1 Semester	Ι		02*	Theory (hr)	30
Voar	1			Credite		Practical (hr)	00
Icai	1			cicuits		Independent	00
						Learning (hr)	00

*Non-GPA Course Module

Aim of the Course:

To train students to achieve cognitive academic language proficiency that is needed to be successful in university

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Apply sign posting language in making presentations
- Identity features of an academic presentation
- Infer implicit information in reading texts
- Write essays and paragraphs with minimum errors
- Use technology in presenting ideas

Course Capsule:

Presentations- practice and features of presentations, paraphrasing texts, evaluating academic write-ups, complex Grammar structures, discussions and debates.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Ac	ademic Engl	ish - II	Course Code	EU 12022		
			Π			Theory (hr)	30
Voar	1	Somostor		Cradita	02*	Practical (hr)	00
Teal	T	1 Jemester		Cleuits	02	Independent	00
						Learning (hr)	00

* Non-GPA Course Unit

Aim of the Course:

To train students to achieve cognitive academic language proficiency that is needed to be successful in university

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Make effective presentations
- Express ideas coherently in speaking
- Identify relations in texts
- Write essays and paragraphs fairly accurately
- Use technology effectively in presenting ideas

Course Capsule:

Conventional and rhetoric styles of presentations, understanding suppositions, opinion and arguments, paragraph construction, different types of prose, write-ups in academic genre, oral presentations.

- Continuous Assessments 30%
- End Semester Examination 70%

Course Title	Business English I			Course Code		EU 21032	
						Theory (hr)	30
Year	2	Semester	1	Credits	02*	Practical (hr)	00
						Independent Learning (hr)	10

*Non-GPA Course Units

Aim of the Course:

To provide students with the English Language Skills needed in the competitive world, especially to improve the opportunities for employability.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Converse confidently at gatherings
- Make effective presentations
- Use the telephone effectively
- Draft a CV for self
- Analyze qualities of a candidate for employment

Course Capsule:

Greeting and small talk, conversations, business presentations, negotiating, problem solving and critical thinking skills, telephone skills, preparation for interview.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Business English II		Course Code	EU 22042				
						Theory (hr)	30	
Voar	2	Somostor	П	Cradita	∩ ว ∗	Practical (hr)	00	
i cai	~	2 Semester	11	Cleans	Cleuits	02	Independent	10
						Learning (hr)	10	

*Non-GPA Course Unit

Aim of the Course:

To further develop communicative competencies including English language and socio cultural competencies which are needed to be successful throughout life.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- List items to be included in agendas
- Compile meeting minutes and reports
- Compose business letters
- Evaluate own culture next to other cultures
- Face an interview confidently

Course Capsule:

Agendas and meeting minutes, writing reports and business letters, email and faxes, CV and cover letters, interview skills.

- Continuous Assessment 30%
- End Semester Examination 70%

Course Title	Professional & Employment Skill Development		Course Code	CG 41011			
						Theory (hr)	05
Voar	Year 4 Semester I	Credite	Cradite	01	Practical (hr)	20	
Ical		Semester	1	Cleans	01	Independent	10
						Learning (hr)	10

To provide in-depth knowledge and skills on immediate and future needs of the fresh graduates in the world of work so that students will be able to serve and behave as effective graduate in the world of work.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Explain how organization is functioned.
- Work in a team by resolving team conflict.
- Communicate with other effectively.
- Write a CV to market their self to world of work.
- Face interview effectively.

Course Capsule:

Understanding organization and how it functions: Roles and functions of the managers, Understanding the management styles and getting along with the supervisor, Organizational culture /climate; Creating sustainable competitive advantage: personal branding, Impression management, Understanding effective team works: Strategy; Resolving team conflict, Concept of emotional conflict. Habits of effective people (7 Habits of Covey,s); Effective interpersonal communication(Eric Bern's transactional Analysis); Dealing with conflicts: Conflict resolution modes, Principled negotiation, Meditation skills; Effective decision making; Making effective presentations: Persuasive communication, Understanding the verbal and nonverbal communication, Overcoming speech apprehension; Project the right image: Role of dress code, Grooming for success, Effective mannerisms and etiquette; Perpetration of CV and cover letter; Guidelines for facing interviews.

- Continuous Assessment 60%
- End Semester Examination 40%

Course Title	Research Project		Course Code	RP 4100X			
						Theory (hr)	-
Year	4 Seme	4 Semester	ster I	Cradite	10	Practical (hr)	-
				cicuits	10	Independent	
						Learning (hr)	-

To provide the students with knowledge and skills in research methodology, techniques, ethics and technology transfer to give solutions to research problems.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- Identify the problem, search literature, formulate hypothesis and select an appropriate statistical design to analyze the problem
- Develop a research proposal by following standard methodology
- Analyze data collected from research and data interpretation
- Make conclusions and give recommendations based on interpreted data
- Present the research findings effectively
- Write a scientific research paper

Description:

Research project is designed to give students a substantial period of study in implementing and reporting on research activities. Students carry out a self-designed programme of work mediate by the project supervisor involving some or all of the following: self-study; independent research; literature review; detailed design analysis and calculations; experimental work; field work; other data acquisition; analysis and interpretation. It will be the responsibility of the students to devise a research topic that will be supervised by an appropriate specialist of staff. Preparation of the research paper and oral presentation, with interim and final feedback from the supervisor, will develop scholarship skill. Each student will report their finding at the end of the first Semester of 4th year through the preparation a research paper which will be presented orally at the annual symposium (AGRES) organized by the faculty.

• Conduct and performance of the project	- 40%
Research paper & thesis	- 30%
 Paper presentation at AGRES 	- 30%

Course Title		In-plant Trair	ning	Course Code		IP 42008	
						Theory (hr)	-
Year	4 Sem	Somostor	п	Cradits	08	Practical (hr)	-
		Semester	11	Ciedits	00	Independent	
						Learning (hr)	-

To provide the students with experience and understanding of the real world of work environment in order to make them "Ready to work" graduate.

Intended Learning Outcomes:

On the successful completion of the course, the students should be able to:

- List the administrative and technical process of a specific industries/organizations
- Critically analyze the administrative and technical process of a specific industrial process
- Integrate all learning in real life environment
- Explain all industrial and organizational tasks
- Develop scientific and practical capabilities enabling to perceive the practical significance of the academic topics handled at the faculty and direct towards thinking to the practical aspects.
- Recognize the essentials of operations, way of running business, equipment used, health, safety, and environment

Description:

The duration of the in-plant training is six month. The students will be attached to an industrial training on full time basis in the second semester of the 4th academic year. During this time, student will be undergoing training in the industry or commercial organization relevant to their areas of interest for future employment. This training will enable to the students to gain knowledge and hands on experience, develop skills, and to build up confidence to handle, maintain, and manage operational systems in the selected professional area.

- Diary 40%
- Report 30%
- Presentation 30%

Research

In addition to teaching, the academic staff members are involved in student research and national level research projects by getting research grants from national and international funding agencies. They have published their research findings in reputed local and international Journals and some academics have been successful in winning Presidential Awards for their publications. Faculty organizes a monthly seminar conducted by an academic staff member or an invited outside eminent researcher for both students and academic staff members which is called the "Faculty Talk" to disseminate new knowledge.

Since the Faculty is actively involved in a Cashew research programme in collaboration with the Sri Lanka Cashew Corporation, many training programmes are being conducted by the faculty staff for cashew farmers as well as for cashew extension staff. These programmes are being held from time to time at different locations in the country. Faculty has contributed to the cashew industry by developing & releasing eight new cashew varieties for planting.

Agricultural Research Symposium (AGRES)

The annual Agricultural Research Symposium (AGRES), where the students are given the opportunity to write, publish and present the findings of their final year research project has been built into the curriculum.

Resources

Human Resources

At present the Faculty has 44 academic staff members, an Assistant Registrar and 48 nonacademic staff members. With promotion of several senior staff members of the Faculty to the Professor level, currently Faculty has 9 full Professors and one Associated Professor. Out of 44 academic staff members 27 members have Ph.D.s and 8 members have M.Sc. or M.Phil. qualifications. Currently, 8 junior staff members are reading their Ph.D.s in foreign universities. Almost all staff members have undergone training on staff development conducted by either the Staff Development Centre (SDC) of Wayamba University of Sri Lanka or in another University. Due to the strength of academic staff members of the Faculty, except for a very few specialized areas, almost all the academic programmes are delivered by internal academic staff.

Some academic staff members of the Faculty are holding key positions at University level units and centers such as Director SDC, Director Career Guidance Unit (CGU), and Director ICT Unit Makandura etc. In addition each Department has student societies under the patronage of senior academic staff members which facilitate students' active participation in a variety of co-curricular and social activities such as organizing religious & cultural events, guest speeches, seminars, workshops and competitions among school children.

Physical Resources

Laboratories

The laboratories of the Departments of Horticulture, Biotechnology and Plantation Management cater to all the practical oriented courses in the faculty.

The centre for Agribusiness studies has been upgraded with modern facilities to conduct the specialization courses offered by the Department of Agribusiness Management.

Experimental fields, Net houses, Planthouse and Rain shelter

Two hectares of cropping land is available for the purpose of field practical and research activities. Tea and rubber experimental plots, three net houses, a planthouse and a rain shelter are also available for use by the students and staff.

Faculty Computer Laboratory

Faculty has established a computer laboratory to conduct regular practical classes for specialized students. The software related to specialized courses were purchased and installed in the faculty computer laboratory.

Internal Quality Assurance Unit (IQAU)

The Quality Assurance and Accreditation Council (QAAC) of the University Grants Commission is the governing body for maintaining and enhancing academic standards in the Universities of Sri Lanka. WUSL has established an Internal Quality Assurance Unit (IQAU) to co-ordinate quality assurance activities within the university. All faculties have a Faculty Quality Assurance Cell (FQAC), which coordinates quality assurance activities for improvement in the overall performance of the faculty in liaison with the IQAU. FQAC of the Faculty of Agriculture and Plantation management comprises of a committee of academic staff members lead by a coordinator under the purview of Dean of the faculty. FQAC regularly plans and monitors quality assurance activities and give guidance on good practices among staff and students of the faculty. FQAC office is located at the Ground floor of the Faculty.

ICT Center

The ICT Center of Makandura location has been designed to impact knowledge on Information Technology for students to meet the challenges in modern world by making use of computers in their relevant fields. The ICT Center is currently equipped with more than 100 workstations to access the internet and for course work of the 2 Faculties at Makandura. The Campus-wide fiber network and *Wify* system added recently, facilitates all the offices, departments, units, library, hostels and quarters to gain high speed web access 20 mbps and communication facility within the premises through IP Telephone system. It can also be used to communicate with Kuliyapitiya Premises. E-mail service has been provided to all staff members. Student centered learning environment is created through LMS server which is hosted and maintained by ICT center. ICT center has extended its facilities to outsiders through Certificate Course in Computer Applications (CCAS) and Diploma in Information Technology (DIT) courses. Both courses are mainly targeted on A/L leavers. To enhance for the ICT skills of internal students, we are conducting several certificate courses separately. (i.e. Certificate in Web Design and Development (CWDD) and certificate in programming & Data Base Management Systems (CPDBMS) courses.

Some information necessary for students is provided through the University web page (<u>www.wyb.ac.lk</u>) Equipment including web and e-mail servers, multimedia projectors, laser printers, dot-matrix printers, ink-jet printers, scanners, digital cameras, a video camera and heavy duty on-line UPS systems help the unit to provide all infrastructure necessary facilities to students. Although the normal opening hours are from 7.00 am to 8.00 pm, it can be extended up to 10.00 pm on request. The staff includes Director, 2 Lecturers, Systems Engineer, 2 Computer Instructors, Computer Application Assistant, Lab Attendant and a Lab Labourer.

Library

The library has a collection of approximately 18480 books and 26 journals, newsletters, periodicals, AGORA on line database etc. mainly in different areas of agriculture. Further it has a good collection of books in Computer Science and English Language. The Reference Section comprises of Encyclopedias, Dictionaries and Annual publications etc. The Library has given to reader to search the library collection by using the computerized catalogue with the internet support call OPAC (Online Public Access Catalogue).

English Langue Teaching Unit

English as a global language of communication has become an absolute necessity in the sphere of higher education. Hence the students are given a sound knowledge of English to proceed up the academic career ladder. The courses are designed to improve the language skills of undergraduates to succeed socially, academically and professionally. English Unit possesses a Language Learning Center equipped with English Language Teaching / Learning material, computers, headphones and valuable books.

Staff Development Centre

Several senior academic staff members are involved in staff development activities in the faculty. The centre will coordinate and organize staff development and training activities for all grades of staff members in the university. The centre also conducts programmes for staff from other universities as well.

Career Guidance Unit

Through the programmes of the Career Guidance Unit, the students are provided with opportunities to develop and enhance their skills and capabilities required to make them more employable and competitive. The Unit is responsible for carrying out career guidance activities both in Kuliyapitiya and Makandura Premises.

Physical Education Unit

Objective of this unit is to develop and promote sports activities of the University. Implementation of these activities will improve undergraduates' personnel and professional productivity. It is also expected that sports activities will lead to a healthy and a contended life. Two mini gymnasiums have been located at Makandura and Kuliyapitiya. A playground at Makandura has been developed adjacent to the students' hostels.

Students Societies and Associations

The University promotes the formation of various societies and associations in the University, at faculty-wise or discipline oriented or of general interests. Wherever possible the University will assist their activities. All associations thus formed will be registered by the administration. Following are the societies functioning in the faculty.

Agri-Business Career Development Society Biotechnology Society (BitSoc) Horticulture Society Plantation Society Art Circle Nature Club

Student Union of the Faculty

Faculty student Union is actively functioning under the patronage of a senior academic staff member as its Senior Treasurer. Each year office bearers of the Faculty student's Union have to be elected from among the general body of the students to deal with the student welfare matters. The Faculty student union works very closely with the university and faculty administration to facilitate academic, welfare and out-reach activity organized by the students.

Health Care

Main Health Centre is located at Kuliyapitiya. However, a smaller unit on out-patient basis is functioning at Makandura Premises. The services provided at present will continue with the aid of the University Medical officer.

Student Counseling

Two senior academic staff members have been appointed as Student Counselors of the Faculty. Students are advised to get their assistance in times of personal difficulties.

Enrollment of Students under Lateral Entry and Foreign Category

The Faculty has taken one step forward by opening students' registration for B.Sc. (Agriculture) degree programme to persons in government organizations having experience in the Agriculture sector and also to foreign students under the purview of UGC in 2016. Faculty recruited 5 persons from Department of Agriculture for the 2014/2015 batch in 2016 and it continues to date under lateral entry programme. Faculty recruited a foreign student from Nepal to follow B.Sc. (Agriculture) degree programme 2016/17.

B.Sc. (Plantation Management) External Degree Programme

A three year B.Sc. (Plantation Management) degree programme was commenced in 2006, by the Faculty. The programme is targeted for the executive level employees in the plantation sector with several years of experience. All courses are conducted using distance mode learning method. The first batch completed the degree programme in April 2009. There are 13 batches registered under this programme and 10 batches were passed out.

Outreach Activities

The Faculty was capable of organizing several outreach activities during the last few years. As a new faculty the number of outreach programmes that was carried out in the past was commendable.

Under the outreach activities the Faculty is involved in the training of A/L Agriculture and Bio-system teachers in collaboration with National Institute of Education (NIE). Further, the Faculty provides fullest support to enhance the practical knowledge of A/L Agriculture and Bio-system students by organizing practical training programmes for them.

Other outreach programmes for which the faculty contributes, are the Plantation Extension Training Programme and Higher National Diploma in Plantation Management conducted in collaboration with the National Institute of Plantation Management (NIPM). These programmes are being conducted annually.

Common Support Unit

The Unit consists of following divisions and was established to attend matters connected to finance, student welfare, general maintenance and security of Makandura premises of Wayamba University of Sri Lanka.

General Administration and Student Welfare

This Unit is housed in a separate building. Duties connected with student Hostels, Bursary, Scholarships, Staff Quarters, Maintenance & Utility Services, Security and other general matters are performed by this Unit. A Senior Assistant Registrar is in charge of the Unit.

Finance

This Unit is responsible in making all payments and collect revenue due to the University. The general store is also under this unit for distributing articles, equipment and supplies required by Faculties, Departments and Units. A senior Assistant Bursar is in charge of the Unit.

Maintenance

This Unit is responsible in maintaining the premises and the buildings including supply of water and electricity. Cleaning service has been contracted to a private firm whose work is also coordinated and supervised by this Unit.

Security

This Unit is responsible in protecting both movable and immovable properties of the University and scrutinizing the entry and exit of personnel and goods. The security service is also contracted to a private firm whose services are supervised by the Security Officials of the University.

Faculty Staff

Dean's Office

Dean	Prof. JC Edirisinghe B.Sc. (Agric.) Hons. (Peradeniya) M.Phil. (Peradeniya) Ph.D. (UK)
Assistant Registrar	Ms. DM Jayakodi B.Sc. (Applied Science)(RUSL) M.Sc. (Polymer Science) (USJP)
Farm Manager	Mr. VHBS Somasiri B.Sc. (Agric.) Hons. (Peradeniya)
Senior Staff Assistant	Ms. SAS Sooriyaarachchi
Staff Assistant	Ms. HMR Priyadarshani

Technical Officer (Audio Visual)	Mr. D.I. Marasinghe
Technical Officer (Grade II)	Ms. M.S.S.R. Weerasinghe PQ in HRM (IPM) Dip in IT (ESOFT)
Management Assistant (Grade I)	Ms. WMCN Wijerathne B.A. Hons. (Kelaniya) Dip. in IT (Kelaniya)
Clerk (Grade III)	Ms. H. Hasintha Andrahennadi B.A. (Kelaniya) Dip. in Eng. (WUSL)
	Ms. IAA Athukorala B.A. (Kelaniya) Ms. U.G.A.W. Gamage Dip in English (NSYC)
Telephone Operator	Mr. SM Piyarathna Dip. in Video & Lighting (SLTTI)
Department of Agribusiness Mana	ngement
Head	Prof. HMLK Herath B.Sc. (Agric.) Hons. (Peradeniya) M.Sc. (USA) Ph.D. (Peradeniya)
Chair Professor / Senior Professor	Prof. JMUK Jayasinghe B.Sc. (Agric.) Hons. (Peradeniya) M.Sc.(Peradeniya) Ph.D. (Guelph)
Professor	Prof. JC Edirisinghe B.Sc. (Agric.) Hons. (Peradeniya) M.Phil. (Peradeniya) Ph.D. (UK)
	Prof. (Ms.) NR Abeynayake B.Sc. (Agric.) Hons. (Peradeniya) M.Sc. (Peradeniya) Ph.D. (IASRI - India)
Senior Lecturers	Dr. (Ms.) AGK Wijesinghe B.Sc. (Agric.) Hons. (Peradeniya) M.Sc. (Peradeniya) Ph.D. (Czech Republic)

Dr. (Ms.) JMM Udugama B.Sc. (Agric.) (WUSL) M.Sc. (Peradeniya) Ph.D. (UK)

Ms. TPSR Guruge B.Sc. (Agric.) (WUSL) MBS (Colombo) Ph.D. (Colombo)

Ms. GHI Anjalee B.Sc. (Agric.) (WUSL) MBA (Kelaniya)

Lecturers (Probationary)	Ms. LDM Nimanthika
	B.Sc. (Agric.) (WUSL)
	M.Sc. (USA)

Management AssistantMr. BMKD Ranaraja(Grade I)(Cisco Certified Network Associate)

Department of Bio-systems Engineering

Lecturer

Head	Dr. KH Sarananda B.Sc. (Agric.) Hons. (Peradeniya) M.Sc. (Phillippines) Ph.D. (University of London)
Senior Lecturers	Dr. (Ms.) JAAC Wijesinghe B.Sc. Hons. (USJP) Ph.D. (USJP)
Lecturers (Probationary)	Mr. AHMN Chamara B.Sc. (Mechanical Engineering) Hons. (Moratuwa)
	Dr. NWBAL Udayanga B.Sc. (Environment) Hons. (Kelaniya) Ph.D. (Kelaniya)
Technical Officer (Grade II)	Mr. SAK Dharmadasa Dip in Computer Programming (TEI)
	Ms. RMAIAN Rajakaruna Dip in English

Department of Biotechnology

Head	Dr. (Ms.) DR Gimhani B.Sc. (Agric.) (WUSL) M.Sc. (Peradeniya) Ph.D. (WUSL)
Chair Professor	Prof. DPSTG Attanayaka B.Sc. (Agric.) Hons. (Peradeniya) Ph.D. (Birmingham, UK)
Professor	Prof. (Ms.) NS Kotterachchi B.Sc. (Agric.) Hons. (Peradeniya) M.Sc. (Thailand) Ph.D. (Japan)
Senior Lecturers	 Dr. (Ms.) BLWK Balasooriya B.Sc. (Agric.) Hons. (Peradeniya) M.Sc. (Peradeniya) M.Sc. (Ghent, Belgium) Ph.D. (Ghent, Belgium) Dr. KM Mewan B.Sc. (Agric.) (Ruhuna) M.Phil. (Colombo) Ph.D. (Colombo) Dr. (Ms.) P Warakagoda B.Sc. (Agric.) (Ruhuna) M.Phil. (Ruhuna) M.Phil. (Ruhuna) Ph.D. (Ruhuna)
Lecturers	Ms. MP Dasanayaka B.Sc. (Agric.) (WUSL) M.Sc. (Peradeniya)
Technical Officer	Mr. NGCA Bandara NDIT Civil Engineering ACLT (OUSL)
Management Assistant (Grade II)	Ms. BLDD Hemachandra Dip. in Computers Science. Dip. in English (WUSL)

Department of Horticulture & Landscape Gardening

Head	Dr. (Ms.) RHMK Rathnayake B.Sc. (Agric.) (WUSL) M.Sc. (Peradeniya) Ph.D. (Queensland)
Chair Professor	Prof. K Yakandawala B.Sc. (Botany) Hons. (Peradeniya) M.Sc. (UK) Ph.D. (Colombo)
Professor	Prof. (Ms.) PIP Perera B.Sc. (Agric.) Hons. (Peradeniya) Ph.D. (Peradeniya)
Senior Lecturers	Dr. B Ranaweera M.Sc. (Moscow) Ph.D. (Moscow)
	Dr. WMWW Kandegama B.Sc. (Agric.) Hons. (Peradeniya) M.Sc. (UK) Ph.D. (China)
	Dr. (Ms.) KMGK Pamunuwa B.Sc. (Chemistry Special) Hons. (Peradeniya) M.A. in chemistry (USA) Ph.D. (Peradeniya)
	Dr. ASA Salgadoe B.Sc. (Agric.) (WUSL) Ph.D. (Australia)
Lecturers	Ms. SAEC Wijesinghe B.Sc. (Agric.) (WUSL)
	Ms. RDN Debarawatta B.Sc. (Agric.) (WUSL)
Lectures (Probationary)	Ms. N Subashani B.Sc. (Agric.) (WUSL)
	Ms. DMAEI Dewagedara B.Sc. (Agric.) (WUSL)
	Ms. RMVA Bandara B.Sc. (Agric.) (WUSL)

Technical Officer

Mr. RM Padmasiri

Management Assistant (Grade I) Mr. HAPJ Hettiarachchi

Department of Plantation Management

Head	Prof. KGMCP Bandara Gajanayake B.Sc. (Agric.) Hons. (Peradeniya) M. Phil. (Peradeniya) M.Sc. (Mississippi State, USA) Ph.D. (Mississippi State, USA)
Chair Professor	Prof. DC Abeysinghe B.Sc. (Agric.) Hons. M.Phil. (Peradeniya) Ph.D. (Zhejian)
Professor	Prof. (Ms.) HMIK Herath B.Sc. (Agric.) Hons. (Peradeniya) M.Sc. (Peradeniya) Ph.D. (New Zealand)
	Prof. WJSK Weerakkody B.Sc. (Kelaniya) Ph.D. (Kelaniya)
Senior Lecturers	Dr. HAWS Gunathilake B.Sc. (Agric.) Hons. (Peradeniya) M. Phil. (Peradeniya) Ph.D. (Ludhiana)
Lecturers	Ms. WAS Lakmali B.Sc. (Forestry & Env. Science) (USJP) M.Phil. (Peradeniya)
	Ms. KGAPK Amarasingha B.Sc. (Agric.) (WUSL) M.Phil. (WUSL)
Lecturers (Probationary)	Mr. IJ Amadoru B.Sc. (Agric.) (WUSL) M.Sc. (Agric. Biosystem Engineering) (Peradeniya)
	Mr. HKJP Wickramasinghe B.Sc. (Agri. Tech & Mgt.) (Peradeniya) M.Sc. (Peradeniya)
	Mr. KHMI Karunarathne B.Sc. (Agric.) Hons. (Peradeniya) PG. Dip. IT (Moratuwa)

Technical Officer (Grade II)

Management Assistant (Grade III)

Mechanic (Grade II)

Ms. BMGM Balasooriya Dip in IT (WUSL) Dip in English (WUSL)

Ms. WWKS Mendis Dip. in NDICT (NAITA)

Mr. M.H.I. Prasad

Field Supervisor (Grade II)

Mr. S.P.A Karunarathna

Other Units

<u>Library</u>

Senior Assistant Librarians	Mr. W Punyawardena B.A. (Special) (Kelaniya) MLIS (Colombo) ALA, FLA(Sri Lanka), Chartered Librarian Ms. DGAS Malkanthi B.A. Hons. (Kelaniya) MSSc (Kelaniya)
Senior Staff Assistant	Ms. SPJ Muthugalage
English Langue Teaching Unit	
Coordinator	Ms. WMC Fernando B.A.(Peradeniya) M.A. (Kelaniya)
Computer Application Assistant (Grade III)	Ms. EMHAK Ekanayake Dip. in Computer (IDM) Dip. in English for Legal Studies (OUSL)
ICT Center	
Director	Prof. WJSK Weerakkody B.Sc. (Kelaniya) Ph.D. (Kelaniya)
Lecturers	Dr. (Ms.) WKGK Weerasinghe B.Sc. (Agric.) Hons. (Peradeniya) PGD (SLIIT) M.Sc. in IS (SLIIT) Ph.D. (Mississippi State, USA)

	Dr. HACK Jayathilake B.Sc. (Agric.) Hons. (Peradeniya) PGD (SLIIT) M.Sc.in IT (SLIIT) Ph.D. (WUSL)
Systems Engineer	Mr. WD Samanwickrama B.Sc. (Kelaniya) PG. Dip.IT (SLIIT) PG. Dip.IT (UCSC) M.Sc. (SLIIT)
Assistant Network Manager	Mr. EMDS Ekanayake B.ICT(Colombo)
Instructors	Mr. SBMCP Herath B.Sc. (Agric.) (WUSL) M.Sc. (Peradeniya) PG. Dip. in IS (SLIIT) M.Sc. (Information Systems) (SLIIT) Mr. HWH Premachandra BIT (Colombo)
Technical Officer	Mr. HMSKYB Herath
Computer Application Assistant	Mr. HAA Dharmapriya
<u>Internal Quality Assurance</u> <u>Unit (IQAU)</u>	
Director	Prof. KDRR Silva B.Sc. (Agric.) Hons. (Peradeniya) Ph.D. (Reding)
Faculty Coordinator	Dr. B.L.W.K. Balasooriya B.Sc. (Agric.) Hons. (Peradeniya) M.Sc. (Peradeniya) M.Sc. (Ghent, Belgium) Ph.D. (Ghent, Belgium)
Health Services	
University Medical Officer	Dr. DMNS Karunarathne MBBS (SL)
Pharmacist	Ms. YMNDY Kumari (S.L.M.C. Reg. Pharmacist)

Nursing Officer	Mr. SN Senavirathne Dip. In Nursing	
Health Attendant	Mr. KSSB Fernando	
Public Health Inspector	Mr. RWSK Balasooriya Dip. in Public Health Inspector	
Student Counsellors	Dr. (Ms.). RHMK Ratnayake B.Sc. (Agric.) (WUSL) M.Sc. (Peradeniya) Ph.D. (Queensland)	
	Dr. (Ms.) HMIK Herath B.Sc. (Agric.) Hons. (Peradeniya) M.Sc. (Peradeniya) Ph.D. (New Zealand)	
	Dr. (Ms.) JAAC Wijesinghe B.Sc. Hons. (USJP) Ph.D. (USJP)	
Proctor	Dr. TK Karadakatiya B.Com (Sp.) (SJP) M.Sc. (SJP) Ph.D. (Wuhan, China)	
Deputy Proctor	Dr. (Ms.) AGK Wijesinghe B.Sc. (Agric.) Hons. (Peradeniya) M.Sc. (Peradeniya) Ph.D. (Czech Republic)	
Coordinator Out Reach Center	Dr. B Ranaweera M.Sc. (Moscow) Ph.D. (Moscow)	
Physical Education		
Director	Mr. RJ Wellassa B.Sc.(Kelaniya) PG. Dip. in Physical Education (Peradeniya)	
Instructors	Mr. GWSR Wickrama B.A. (Jayawardenapura) Dip. in Sport Science(NISS) PG.Dip.in Physical Edu.(Peradeniya) Dip. in Sport Science (NIS)	
	Mr. KAM Bandarathilaka B.Sc. (sp.) Business Management (WUSL) PG. Dip in Exercise and Sports Science (Peradeniya)	

Ms. MA Sammani B.Sc. (Agric.) (WUSL)

Ms. KAC Chathurangani B.Com. (sp.) (Kelaniya)

Staff Assistant	Mr. HMN Dharmapriya	
<u>Career Guidance Unit</u>		
Director	Prof. H.M.A.Herath B.Com (Ruhuna), PGDM in Education M.Sc. (Management-SJP) Ph.D. (UUM –Malaysia) SEDA (UK), Entrepreneurship Trainer(CEFE-German)	
Computer Application Assistant	Mr. NP Sanjeewa Janakasiri Dip. in HRM (IPM)	
Director / Staff Development	Prof. M.M.D.R. Deegahawature B.Sc. Business Administration (Hons.) (Sri J'pura) MBA (Colombo) MBA in MOT (AIT) PhD in Management (HUST)	
Coordinators / External Affairs	Dr. WMHK Wijenayake B.Sc. (Kelaniya) Ph.D.(Kelaniya) Dr. I. P. M. Wickramasinghe B.Sc. Eng (Peradeniaya) M.Phil. (Peradeniya) M.Sc. (USA) Ph.D. (USA)	
Coordinators / Student Support Services & Welfare	Dr. B Ranaweera M.Sc. (Moscow) Ph.D. (Moscow) Dr. PMN Dharmawardena B.Sc. (Hons) (Kelaniya) M.Phil.(Kelaniya) M.Sc. (Kyushu) Ph.D. (Kyushu)	

Common Support Unit

Senior Asst. Registrar	Ms. R.Y Sandamali B.Sc. (Hons.) Town & Country Planning (UoM) MBA (WUSL) ICASL (Intermediate)
Assistant Registrar	Mrs. SPAU. Senarath B.Sc. in Environment Conservation & Mgt. (Kelaniya)
Assistant Bursar	Mrs. SNK Karunarathna B.Sc. (Business Administration) (Jayawardenapura)
Works Engineer	Mr. MVW Samarakkody B.Sc. (Civil Eng.)(Peradeniya)
Shroff	Mr. DMC Dharmawardana
Academic Warden (Makandura Premises)	Dr. KGMCP Bandara Gajanayake B.Sc. (Agric.) Hons. (Peradeniya) M. Phil. (Peradeniya) M.Sc. (Mississippi State, USA) Ph.D. (Mississippi State, USA)
Sub Warden Sapumalbandara Hostel (Boys)	Mr. MDDS Abeyrathna B.A.(sp.) (Jayawardenapura)
Sub Warden Biosobandara Hostel (Girls)	Ms. NA Samarasinghe B.A. (sp.) (Kelaniya)

Administrative staff useful for Student matters at Kuliyapitiya Premises

Senior Assistant Registrar (Examinations)	Mr. LMC Siriwardhana B.A. (Hons.) (USJP) Master of Art (Kelaniya)
Assistant Registrar (Student	Ms. SN Piyadarshani
Registration & Student Welfare)	B.B. Mgt. (HRM sp.) (Hons.)

Organizational Structure of the University



Officers of the University

Chancellor	Deshabandu Prof. Tuley De Silva
	B.Sc. (Cey)
	B.Pharm. (Lond)
	M.Sc. (Manch)
	Ph.D. (Manch)
	D.Sc. (Hon.C)
	C.Chem. (SL),
	F.I.Chem.Cey.
Vice-Chancellor	Prof. EMP Ekanayake
	B.Sc. (Kelaniya)
	M.Sc.(Kyushu)
	D.Sc. (Kyushu)
	Fellow (Öxford)
	·

Deans of Faculties

Agriculture & Plantation Management

Prof. DC Abeysinghe B.Sc. (Agric.) Hons. (Peradeniya) M.Phil. (Peradeniya) Ph.D. (Zhejian)

Applied Sciences

Dr. LDRD Perera B.Sc. Hons. (Kalaniya) M.Phil. (Kalaniya) D.Eng. (Kyushu)

Business Studies & Finance

Dr. RA Rathnasiri B.Com (SJP), PG Dip. (Econ) (Colombo), M.Phil. (Colombo) Ph.D. (China)

Livestock, Fisheries & Nutrition

Prof. BPA Jayaweera B.Sc. (Agric.) Hons. (Peradeniya) M.Phil. (Peradeniya)

Registrar

Mr. WAD Chithrananda B.A. (Kelaniya) Master of Public Mgt., SLIDA

Acting Librarian

Mr. W Punyawardena B.A. (Special) (Kelaniya) MLIS (Colombo) ALA, FLA(Sri Lanka), Chartered Librarian Bursar

Mr. DAU Dharmadasa B.Sc. (Kelaniya) MBA (WUSL) PG.Dip in MIT (Kelaniya) ACA, ACMA

Council of the University

Chairman	Prof. EMP Ekanayake Vice-Chancellor
Deans	Prof. DC Abeysinghe Dean Faculty of Agriculture and Plantation Management
	Dr. LDRD Perera Dean Faculty of Applied Sciences
	Dr. RA Rathnasiri Dean Faculty of Business Studies and Finance
	Prof. BPA Jayaweera Dean Faculty of Livestock, Fisheries and Nutrition
Senate Nominees	Prof. (Ms.) GAP Chandrasekara Faculty of Livestock, Fisheries and Nutrition
	Dr. HMSP Herath Faculty of Business Studies and Finance
Appointed Members	Prof. R M W Rajapaksha Dr. I S Yaddehige Mr. J L Senaratne Mr. R M P R Embogama Mr. Gamini Ilangaratne Eng. Gamini Senanayake Mr. Upendra wijesinghe Mr. WHMBH wijesinghe Mr. HM Abeysinghe Mr. Nimal Perera

Contact Telephone Numbers

Faculty of Agriculture & Plantation Management, Makandura

	General Fax	031- 2299 031- 2299	704 248
	Tel. No.		E-mail
Dean	031-2299	9430	fapm@wyb.ac.lk
Head /Horticulture	031-2299	0249	horticulture@mkd.wyb.ac.lk
Head / Plantation Mgt.	031-2299	0226	plantation@@mkd.wyb.ac.lk
Head/ Biotechnology	031-3315	5373	biotech@mkd.wyb.ac.lk
Head / Agribusiness Mgt.	031-2299	0246	abm@mkd.wyb.ac.lk
Assistant Registrar	031-2299	9875	arfapm@wyb.ac.lk

Faculty of Livestock Fisheries & Nutrition, Makandura

	Tel. No.	E-mail	
Dean	031-2299429	dean flfn@mkd.wyb.ac.lk	
Head / Livestock	031-2299873	livestock@mkd.wyb.ac.lk	
Head / Food Science	031-2299871	foodsci@mkd.wyb.ac.lk	
Head/Aquaculture			
& Fisheries	031-2299874	aqua@mkd.wyb.ac.lk	
Head/Applied Nutrition	031-2298120	nutrition@mkd.wyb.ac.lk	
Kuliyapitiya Premises			
General		037-2281412, 2282414, 2283614	
Senior Assistant Registrar/Ex	am	037-2284527	
Assistant Registrar/Student V	Velfare	037-2283167	
Common Units			
	Tel. No.	E-mail	
Proctor	031-2299874	proctor@mkd.wyb.ac.lk	
Director /Computer Unit	031-2299247	comunit@mkd.wyb.ac.lk	
Career Guidance Unit	031-3314283	cgu@mkd.wyb.ac.lk	
Staff Development Centre	031-3315376	sdc@mkd.wyb.ac.lk	
Library	031-2298112	lib@mkd.wyb.ac.lk	
English Unit	031-2298222	eltu@mkd.wyb.ac.lk	
Finance Division	031-2298115		
Common Support Unit	031-2298111	sar@mkd.wyb.ac.lk	
Security	031-2298114		
Hostels Biosobandara (Girls)	031-2298113	biso@mkd.wyb.ac.lk	
Sapumalbandara (Boys)	031-2298129	sapumal@mkd.wyb.ac.lk	
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