Hand Book for Postgraduate Programmes

(2021/2022)

Faculty of Agriculture
University of Ruhuna

Postgraduate Handbook (2021/2022)
Department of Agricultural Economics,
Faculty of Agriculture,
University of Ruhuna

1. **MSc in Agricultural Economics and Development (MAED) (SLQF - 09)**
2. **MSc in Agricultural Economics and Resource Management (MScAgERM) (SLQF – 10)**
3. **Master of Agribusiness Management (MABM) (SLQF – 10)**
4. **Diploma in Agribusiness Management (DABM) (SLQF - 08)**

Content

1. Introduction

The University of Ruhuna is the only state university in southern Sri Lanka. It was established in 1978 as Ruhuna University College and upgraded to a fully-fledged university on February 1st 1984 fulfilling a long cherished desire of the people of the southern Sri Lanka for a University in the region. The University of Ruhuna consists of nine faculties at present. Its 72-acre main campus is located at Wellamadama complex in Matara where there are five faculties, namely Faculty of Science, Faculty of Fisheries and Marine Sciences and Technology, Faculty of Management and Finance, Faculty of Humanities and Social Sciences and Faculty of Graduate Studies. Faculty of Engineering and Faculty of Medicine are located in Galle. Faculties of Agriculture and Faculty of Technology are located in Kamburupitiya (Matara). The central administration unit of the University is situated in a scenic site at Wellamadama. It is bordered by the sea and paddy fields and is in close proximity to Dondra, the Southern tip of Sri Lanka. The Vice-Chancellor's residence, Guest house, Gymnasium, and Outreach Centre are also located in Wellamadama complex. It operates the Ruhuna Library, which is one of the largest academic and research library systems in Sri Lanka.

Initial building complex for the University was designed under the guidance of the world-renowned architect Geoffrey Bawa, Edward Reed and Beg Company designed the buildings and the Ballast Nedam Company of the Netherlands completed the construction at Wellamadama, Mapalana and Karapitiya with a unique architectural landscape. While the University of Peradeniya was the first University in Sri Lanka constructed on a sound ecologically friendly plan, the University of Ruhuna became the second and the only University, which was constructed on a sound architectural plan utilizing funds from the government of Sri Lanka.

The University offers basic degree programmes in their respective disciplines. Depending on the facilities available, MA, MBA, MSc, MPhil and PhD degrees are also offered. In addition, diploma and certificate courses are offered in various disciplines. The University of Ruhuna is deeply committed to developing quality academic programmes in the interest of the human resource development of Sri Lanka.

Faculty of Agriculture, a pioneering faculty of the University of Ruhuna offers 3 undergraduate degree programmes *viz.* BSc Agricultural Resource Management and Technology, BSc Agribusiness Management and BSc Green Technology all being of 4-year duration. The faculty admits 250 students, annually while identifying itself as the leading center for agricultural research, extension and teaching in the southern Sri Lanka.

Faculty of Engineering is the third Engineering faculty established in Sri Lanka. Since its inception in the year 2000, it has been actively creating opportunities for the benefits of the society in engineering and allied technologies. The faculty enrolls 225 students

annually for the BSc Eng Degree programmes in disciplines of Civil and Environmental Engineering, Electrical and Information Engineering and Mechanical and Manufacturing Engineering. All these degree programmes are accredited by the Institute of Engineers, Sri Lanka (IESL).

Faculty of Fisheries and Marine Sciences and Technology is the only faculty that offers a special degree of four years in BSc Fisheries and Marine Science and BSc Marine and Fresh Water Sciences in Sri Lanka providing professional level of knowledge required for sustainable management of aquatic and marine resources. The annual intake of the faculty is about 110.

The Faculty of Humanities and Social Sciences is the largest faculty of the university having the highest number of undergraduate students with an annual intake over 500 students. The faculty offers over 400 course modules in 12 diversified disciplines. The faculty offers the degree of Bachelor of Arts (General and Special) in the subject areas of Archeology, Buddhist Culture, Buddhist Philosophy, Economics, Geography, Pali Language, Political Sciences, Sinhala, Social Statistics and Sociology.

Faculty of Medicine is the third medical faculty established in the country and at present it offers four degree programmes. In addition to the MBBS degree programmes, three BSc degree programmes in the field of allied health sciences, namely, Nursing, Medical Laboratory Sciences and Bachelor of Pharmacy are offered considering the national and international demand. Steps are being taken to establish a new faculty for Allied Health Sciences with a view to addressing the current limited facilities and increasing student intake.

Faculty of Science offers three-year Bachelor of Science (General) Degree and four-year Bachelor of Science (Special) in Botany, Chemistry, Mathematics, Physics, Computer science and Zoology. The annual intake is 390 students.

The objective of the Faculty of Management and Finance is to produce intellectuals in the field of management and finance. It offers the BA degrees in Business Administration, Accounting and Finance, Marketing, Human Resource Management and Entrepreneurship and enrolls 320 students annually.

The newly established Faculty of Technology commenced its academic programme in 2016. The total student intake would be 200 for the faculty when it is fully established. Bachelor of Engineering Technology (BET) and Bachelor of Information and Communication Technology (BICT) are the two degree programmes offered by this faculty.

Faculty of Graduate Studies promotes excellence in all aspects of postgraduate research under the guidance and maximum support from eminent scholars of all the faculties. Over

18 postgraduate courses are handled by this faculty including higher degrees of PhD, MPhill, MBA, MSc and MA.

The University of Ruhuna is now a fully-fledged state university. It is making a significant contribution to national and regional development of the country. The members of its academic staff serve as consultants and advisors to a wide spectrum of national bodies and professional associations. Introduction of the US semester system and course unit system based on course credits, the timely curricular revisions that address the national needs in the respective disciplines have put the university on a par with many prestigious universities within Sri Lanka and abroad.

The Faculty of Agriculture, one of the pioneering faculties of the University of Ruhuna, is located at Mapalana, 16 km from Matara, and 2 km from Kamburupitiya along Matara-Kamburupitya main road. The Faculty premises of 50 ha includes several academic and administration buildings which house lecture theaters, laboratories, the library, student residences, student recreational facilities, canteen, auditorium etc. supporting academic and research programmes. The Faculty Farm is also located within its premises, integrating farm activities with teaching, research and outreach programmes.

The Faculty of Agriculture strives to contribute to the national development through the propagation of new knowledge and producing skilled, efficient and marketable graduates. Resources of the faculty are concentrated to offer 3 undergraduate degree programmes viz. BSc Agricultural Resource Management and Technology, BSc Agribusiness Management and BSc Green Technology all being 4-year career oriented degrees. At present, the Faculty has seven academic Departments of study, namely Departments of Agricultural Biology, Agricultural Economics and Extension, Agricultural Engineering, Animal Science, Crop Science, Food Science and Technology and Soil Science. All three degree programmes fall into the SLQF level 6 and the course are conducted in the English medium. The faculty admits 250 students annually and the faculty identified itself as the leading center for agricultural research, extension and teaching in the southern Sri Lanka

The staff strength of the Faculty was increased progressively since the inception and now the Faculty has 73 permanent and approximately 15 temporary academic staff members including 7 Senior Professors and 12 Professors. In addition, a number of scientists/academics with international repute serve the faculty as Adjunct Professors/Visiting Professors with the objective of enhancing the academic climate and research culture of the Faculty. In addition, the Faculty has made every endeavor to obtain the services of outstanding agricultural scientists, administrators, policy makers, planners, *etc.* in the country with a view to supplementing and enriching the academic programme.

While fostering national education, the Faculty is becoming increasingly committed to community and regional development. The faculty is strongly committed towards Southern area development and fostering the University-Industry linkages. A good example for a public-private partnership is the signing of MoU between University of Ruhuna and International Foodstuff Company (IFCO). To strengthen these activities, an Industrial Placement Office (IPO) was established in 2005 and an Industrial Placement Officer was recruited to meet the needs of the graduates in carrier guidance, internships, job seeking, university-industry linkages *etc*. To this end, many academics of the Faculty are serving as consultants and resource persons in a number of national and international institutions and agencies.

Under the new GPA system introduced in the year 2006, the Faculty has revised the courses to match with the emerging trends in the society. In the new system, students are given a choice to select elective courses from a vast array of subject combinations and preferences. Also, students have more opportunities to get involved in extracurricular activities, learning of languages, skill development and carrier guidance activities. The third year second semester of the BSc Agricultural Resource Management and Technology degree programme consists of practical farm training conducted at the Faculty Farm. The students get the opportunity to visit public and private sector farms, research centers and other institutions during the course of study. In addition, the students are given training in plantation crops conducted at nearby estates. A Farm Mechanization Training Course is conducted at the Faculty to equip students with comprehensive knowledge in farm machineries. Each student, during the final year of the degree programme, will have to follow compulsory courses in Applied Statistics, Technical Writing and Presentation Skills, and Selected optional courses in addition to the courses offered in the specialization field of study selected by the student. For the specialization course, the students have to follow advanced course modules offered by the particular department and conduct a research project of six-month duration subsequently submitting a dissertation. It is compulsory for all the students to undergo Industrial Training Course before commencing their research projects in the final year of study.

The Faculty also offers six MSc degree programmes through the Faculty of Graduate Studies, University of Ruhuna to meet the contemporary needs of the graduates in the region in addition to offering MPhil and PhD degrees by research. Equipment and laboratory facilities for teaching and research at both undergraduate and post-graduate levels are available in each Department of Study to carry out both fundamental and applied research.

Presently, more than 120 post-graduate students follow MSc courses, namely, MSc Agricultural Economics and Resource Management, MSc Agri-Business Management, MSc Animal Science, MSc Food Science & Technology, MSc Green Technology, MSc Crop Production Technology and MSc Crop Protection which is jointly offered with Faculty of Science. Further, the Faculty is making arrangements to establish a Postgraduate Unit within the Faculty premises to provide all the services to the students following these masters' courses.

The staff of the Faculty has excelled in research as well, and have been successful in securing many competitive and prestigious research grants from agencies such as PSTC of USAID, BOSTID of National Academy of Sciences in USA, World Bank, CIDA, IDRC, IAEA, GTZ Germany and NORAD to name a few. The Faculty regularly conducts several training programmes in collaboration with various Institutions such as National Institute of Education, HARTI, UNDP, Matara Chamber of Commerce, Hambanthota Chamber of Commerce, District Secretariat, Matara, Southern Development Authority, Ministry of Indigenous Medicine, Department of Irrigation and Sri Lanka Center for Development Facilitation (SLCDF), EDB, IFCO *etc*. In addition to all achievements, many academics of the Faculty have received International and National prestigious research and invention awards.

The Faculty has embarked upon publishing an International Journal titled "Tropical Agricultural Research and Extension". An unprecedented interest has been shown by researchers working in the tropics to publish in this journal.

In the year 2008, the Faculty initiated an annual event to hold a National Symposium enabling students, academics, and researchers of the Faculty and outside agencies and organizations to present their research findings on topical themes relevant to Agriculture. This has become an international event since 2010 and the Faculty hosted this International Symposium in Agriculture& Environment (ISAE) for the 6th consecutive time in January 2017. In keeping with the broad objective of the Faculty to develop as an entity of international standing, the Faculty has already developed link programmes with Lund University of Sweden, University of Tokyo, Ibaraki University of Japan, Ryukyus University of Japan, Kobe University of Japan and Karlsruhe Waterworks, Germany. The Faculty has already developed collaborative research activities and student/staff exchange programmes with these international institutions where a number of academics and students have been benefitted.

To understand different systems of agriculture, one has to be knowledgeable about the different components of these systems; crops and animals, technology used, and the human factor. While the students gather knowledge on the former two aspects in other Departments, the Department of Agricultural Economics is mainly concerned about the last, the human factor, especially entrepreneurship and management.

The Department of Agricultural Economics and Extension is one of the pioneering Departments, which were established at the beginning of the Faculty of Agriculture in 1978. At present, the Department of Agricultural Economics and Extension offers several courses for the undergraduate degree programmes of BSc ARMT, BSc ABM and BSc GT.

As the Department identified increasing demand of expertise manpower in the fields of agricultural economics and resource management, the Department established MSc Programmes in Agricultural Economics and Resource Management (MSc AgERM), Agribusiness Management (MABM) and Agricultural Economics and Development (MAED) from the year 2006 in addition to conventional MPhil and PhD degree programmes. In addition to the undergraduate and post graduate programme, the Department offers certificate and diploma course in Scientific Tea Manufacturing and Quality Management for the Tea sector in collaboration with the Sri Lanka Tea Board, Tea Small Holding Development Authority and Tea Research Institute. The Department conducts several collaborative research and development programmes to cater to the demand for community development and new knowledge through several national and international organizational and government institutions.

Economic theories, Agricultural Economics, Agricultural Extension, Natural Resource Management, Environmental Economics, Organizational Management, Human Resource Management, Agribusiness Management, Econometrics and Statistics, Fisheries Economics, Agricultural Marketing, Forest Management, and Entrepreneurship are some of the research fields available in the Department.

2. MSc in Agricultural Economics and Development (MAED) (SLQF - 09)

In Collaboration with Hector Kobbekaduwa Agrarian Research and Training Institute (HARTI)

2.1 Background to the Programme:

Expertise human recourses in higher education institutions and in various other organizations in Sri Lanka are not properly utilized contrast to other countries to train the manpower for future generations especially in the fields of agricultural and social sciences. Employees who are working in different institutions are keen to find postgraduate opportunities for their career development. There is a big gap between demand for training and the supply of such opportunities in the country especially in the Southern Region. To address the demand the Department of Agricultural Economics started two postgraduate research degree programmes in the year 2007 and 2009. At present about 70 postgraduate students are conducting research studies towards their master degrees while some of the students have already completed their studies. However, non-availability of adequate research funds is becoming a impediment to complete the research studies for many of the postgraduate students and therefore, the prospective students are not interested to register for research postgraduate degree programmes without guaranteed funds.

Faculty of Agriculture, University of Ruhuna (FAUR) recently signed a Memorandom of Understanding with Hector Kobbekaduwa Agririan Research and Training Institute (HARTI) to conduct joint research and Training programmes. Under the signed MoU, both FAUR and the HARTI are expected to enhance the research programmes while conducting collaborative training

and development programmes. It is understood that there are many prospective graduates are keen to earn postgraduate degrees to increase the knowledge and as a basic need to find postgraduate opportunities in foreign countries. To cater the above demands, both parties of the MoU agreed to supplement the existing two postgraduate programmes of the FAUR by the proposed master programme of Master of Agricultural Economics and Development.

Through the proposed degree programme, expertise human resources of the FAUR and HARTI can be better utilized for the man power training need of the country.Faculty of Agriculture, University of Ruhuna (FAUR) is already conducting five master programmes with course work and research components in addition to the conventional research degree programmes of MPhil and PhD. However, due to rural and remote location of the Faculty at Mapalana, many prospective graduates are facing the problem of travelling while following the regular course work. Many of the graduates who are concentrated in Colombo and suburb areas will have easy access for the regular classes of the Master programme after starting the center at HARTI.
This programme will be provide opportunity to absorb prospective postgraduate research students for the research degree programmes of the university while providing opportunities for such candidates to acquire postgraduate qualifications. Moreover, through the programme, resources of both institutes can be better utilized and shared for the benefits of both undergraduate and postgraduate students of the university. Resources persons of HARTI will have an opportunity to share their knowledge and experience with the postgraduate students and the staff of FAUR while strengthening the research capacity of the institute.

The main objective of this degree program is to cater the demand for postgraduate studies of the fields of agricultural business management, entrepreneurship development and agro-based industries especially in Southern Sri Lanka as well as in the country considering emerging fields in the present. Secondly, the available expertise human resources in different departments in the University of Ruhuna and other government and non-governmental institutions can be utilized to train the man power needed to development process of Sri Lanka. Thirdly, it is believed that through research component of the degree program, the university can enhance its research activities to eradicate poverty especially in the agricultural sector and to solve the problems in Southern Sri Lanka. Specific objectives of the proposed degree programme are:

- To cater the demand of the postgraduate studies in the field of agricultural economics and development of the country generally and particularly in the Southern Region
- To open the avenue of research degrees (MPhil and PhD) for prospective candidates by giving basic knowledge and the basis for such degrees and enhancing the research capacity of the University.
- To provide basic knowledge and qualification for prospective students for postgraduate research degrees (MPhil and PhD) both in local universities and overseas.
- To strengthen the link between University and other institutions which are working in the area in education, training and development
- To provide opportunities for university academics and scientists in the field of agricultural economics to disseminate, to share and to upgrade their expertise knowledge

2.2 Eligibility Requirement

(Minimum admission requirement is a bachelor degree with 30 credits in relevant subject area or equivalent prior learning experience in relevant subject area. (According to the guidelines in the final draft of the Sri Lanka Qualification Framework, Ministry of Higher Education, Page 23). Hence, following graduates are eligible to apply for the MAED programme.

1. Graduates with first class or second class honors in the special degree programs in Agriculture, Commerce, Management, Business Administration, Food Science and Technology, Economics, Sociology, Geography or related fields from a recognized university.
2. Graduates in the above fields with a minimum of one year experience in a recognized institution in the field of Business Management, Entrepreneurship, Ago-based industries or Extension/Development activities.
3. Graduates in the fields of Biological Sciences, Economics, Management, Business, Agriculture, Food Science with Post Graduate Diploma in the fields of Management, Entrepreneurship, Agro-processing or related fields.
4. Graduates in any discipline from a recognized university with a minimum of three years post qualifying work experience in the managerial capacity in the fields of agri-business
5. A professional qualification that will be considered on a case by case basis, by the board of study with the approval of the Director of Postgraduate studies of University of Ruhuna and a minimum of three years of post qualifying experience in Business Management or related fields

And a good working knowledge in English

All above and other entry qualifications will be considered subjected to the approval of the Senate of the University of Ruhuna.

2.3 Admission Process

Calling applications, Screening and Interviews: Applications will be called by the advertisements on national newspapers by the Faculty of Graduate Studies of University of Ruhuna. After screening of the applications, selected applicants will be called for an interview to test the English competency and to examine the certificates.

2.4 Programme duration:

Three academic semesters (30 Course Credits + Directed Study of 05 credits)

2.5 Course Syllabus

The degree program consists of course work and a guided independent study for five credits. Minimum requirement of course credits is 30 and the minimum total credit requirement is 35. According to the guidelines in the final draft of the Sri Lanka Qualification Framework, Ministry of Higher Education, to ensure the thorough understanding together with critical awareness of current issues in the subject area of Agricultural Economics and Development and to apply relevant knowledge and skill to their professional practice course units are classified in to three

categories; compulsory core courses, elective core courses and optional courses. Advanced Micro Economics (03 Credits), Advanced Macro Economics (03 Credits), Agricultural Economics (03 Credits), Quantitative Methods (03 Credits) and Development Economics and Policy (03 Credits) are the compulsory core courses for all the graduate students in order to complete the MAED degree. A minimum of 05 credits should be covered out of the elective core courses and remaining credit requirement can be covered either from elective core courses or optional course according to the requirement of the student. One Credit is equivalent to 15 hours of lectures, 30 hours of practical classes, 45 hours of field work / independent studies or any other equivalent combination. First two semesters are designed mainly for the course work to acquire the knowledge about the field of study, analytical tools and partly to plan the directed independent study. During the third semester, the student can complete the course work and directed study in order to be eligible for the MAED degree.

According to the guidelines of the Sri Lanka Qualification Framework of Ministry of Higher Education, students who maintain minimum requirement of Overall Grade Point Average (OGPA) and 20 credits shall be considered for awarding a postgraduate certificate and students who maintain minimum requirement of Overall Grade Point Average (OGPA) and 30 credits shall be considered for awarding a Postgraduate Diploma.

One credit unit is defined as fifteen hours of teaching, thirty hours of practical work or a combination of theory and practical subjected to the approval of faculty board of the Faculty of Agriculture and the Senate of the University of Ruhuna. Semester means 15 weeks of class sessions and three additional weeks for independent studies and examinations. Following table gives the maximum and minimum limits of the postgraduate degree programme.

	Maximum	Minimum
Number of courses per semester	05	--
Number of course credit hours per semester	18	--
Total number of credits for course work	--	30
Total number of credits for directed study	--	05
Total number of compulsory core courses	--	05
Total number of credits from compulsory core courses	--	15
Total number of elective core courses	--	02
Total number of credits from elective core courses	--	05
Total number of credits from optional courses	--	00
Total number of credits to be eligible for the MAED		35
Total number of credits to be eligible for the PG Dip AED		30
Total number of credits to be eligible for the PG Certificate of AED		20

CC 5302: Mathematics for Economics and Management (3: 45+00) and ABM 5303: Agribusiness sector in Sri Lankan Context (3:45+ 00) are compulsory for the students who do not possess a bachelor degree in Agricultural Sciences or relevant fields.

2.5.1 Foundation level Non-GPV Courses:

Non-credit courses those who are having deficiencies in computer literacy and basic mathematics to follow the master level courses
CC: 4201: Computer awareness and Information Technology: Dos and Windows, Microsoft office (Word processing and spread sheet), email and Internet browsing for information. Preparation of reports, research articles and thesis, Literature search, Scientific writing (30 hours, non-credit)

CC4202: Basic Mathematics and Statistics: Number systems, Solving equation systems, Calculus (Differentiation and integration), matrix algebra, Descriptive statistics (measures of center and dispersion), Frequency distributions (Binomial, Normal, poison, t, X^2..), Applications of using mathematics and statistics, Introduction to mathematics for economics

2.5.2 Compulsory Core Courses

AEC 5302: Advanced Micro-economics (3: 45+00)

Functions of the price system, Theories of consumer behavior, equilibrium under different market situations, Theory of imperfect competition, partial equilibrium quasi-equilibrium and general equilibrium, Modern theories with focused to risk and uncertainty, inter-temporal allocation of resources, Introduction to General Equilibrium Models, Market failure, Externalities and public goods.

AEC 5303: Advanced Macro-economics (3: 45+00)

National income, static and dynamic analysis, equilibrium in dynamic system, classical, Keynesian and post-Keynesian theories of output and employment, theories of money and prices, business cycle theories, monetary and fiscal framework for economic stability and growth.

AEC 5304: Agricultural Economics (3: 45+00)

Institutional setting, inter-sectoral forward and backward linkages, Political and economic factors and agriculture, models of agriculture development (Schultz, Jorgenson, FEI, Mellor, Todaro and Boserup), Development problems in Sri Lankan agriculture and South Asia, Agricultural finance, World agricultural trade and WTO.

AEC 5305: Quantitative Methods and Econometrics (3: 45+00)

Properties of estimation, Sampling techniques and experimental designs, scales of measurements, descriptive statistics, correlation, regression, hypothesis testing, use of non-parametric techniques and time-series models, introduction to ANOVA, Introduction to advanced econometric techniques

AEC 5306: Agricultural Development and Policy (3:30+30)

Theories of development, Importance of agricultural policies with special reference to Sri Lanka. Policies of price, research, land, credit, irrigation and insurance. Improving food and nutrition security, Increasing Competitiveness, Increasing Investments, Export and Marketing development, and Institutional and Management Reform, Analytical tools for agricultural policies, New economic order, IPR and international trade policies. Policies to address poverty, food security and gender inequality.

AEC 5307: Local and Regional Economic Development (3: 30+30)

Local-global dilemma, Political, social and cultural aspects of globalization, Local development approaches, Identifying endogenous resources, Definitions and dimensions of local development models, Social cohesion and consorted actions, Innovative elements and external factors, Development of endogenous resources, research and participatory actions, Administration, Quality management, Monitoring and evaluation

AEC 5308: Social Science Research Methods (3: 30+30)

Social Science Research Process, Identification of research problems, Measurements and data collection tools, Survey methods, Simulations, Sampling theory and practice, Data analysis and interpretation. Presentation of findings, Reliability of validity of data and findings. Participatory Appraisal techniques, Different research designs.

AEC 5314: Extension Management (3: 30+30)

Evolvement of extension, Development of extension models, Extension approaches, Current trends, extension applications, adoption and diffusion, extension and development mix, institutional arrangements and linkages, Use of ICT in extension, Participatory techniques, Future challenges.

AEC 5500: Directed Study (5: 15+120)

The directed study may be literature survey of particular area, study of current issue, analysis of relevant field using secondary of primary data, development of economic models, survey or any other assignment with the agreement of the supervisor. After completion of the directed study, the student should conduct a seminar and should be submitted a report.

2.5.3 Elective Core courses

AEC 5311: Project Planning and Management (3:45+00)

Introduction to the project planning and management cycle, Project management process and strategic context of projects, Project planning and management cycle and case material, Feasibility analysis and Appraisal of projects, Organizational design for project management ,Project planning and management information system, Project monitoring, Evaluation and control, Project termination, Interpersonal dynamics in the management of projects and the cultural elements, New prospects of projects planning and management

AEC 5306: Theories of Agricultural Resource Management (3: 45+00)

Nature and scope of production relations, concepts of production functions, optimal product and input combinations, Market economic systems, market failure, concepts of welfare economic, property right, public goods and common property resources, Economics of renewable resources, fisheries, forest, water resources, non-renewable resources, land and labour management.

AEC 5316: Social and Economic Impact Assessments (3: 40+10))
Conventional project evaluation models, B/C, NPV, IRR, Pay-back period, sensitivity analysis. Incorporating social and environmental impacts of projects in project analytical tools, Different valuation techniques for social and environmental impacts.

AEC 5318: Energy and Environmental Economics (3: 45+00)
Overview of natural resource economics, optimization of inter-temporal energy resource use, Energy and economic development, pattern of energy use and energy analysis in agriculture, Energy productivity and efficiency, economic analysis of energy, Energy conservation and economic incentives, Energy pricing and OPEC, Alternative energy sources, Energy policies in different countries, Renewable energy sources and environmental interaction. Energy and sustainable development.

AEC 5325: Land and Labour Management in Agriculture (3: 45+00)
Planning a farm as a unit, Land and labour laws in Sri Lankan and Asian context, Management of land and labour within the dynamic framework of risk and uncertainty.

AEC 5326: Global and Regional Trading Systems and International Food Policies (3: 45+00)
Theories of international trade, evolution of international trading systems, Colonial era and new economic order, International monetary systems, International food policies, Economic Integration: custom unions and free trade areas, Regional trading systems and agricultural trade, ASIAN, EEC, COMICON, CAROCOM.., Analytical models.

AEC 5327: Agricultural Marketing and Price Analysis (3: 45+00)
Agricultural Marketing Systems, Production, Price and Policy Context, Problems and Measures for Improving Agricultural Product Distribution and Markets, and Measures to Enhance the Efficiency of Agricultural Marketing Systems, Application of econometric methods to analyze price movements and price indices. Terms of trade and integrated price policy.

AEC 5328: Economic Statistics (Time series, Indices, production functions) (3: 30+30)
Time series data sets, Decomposition of time series data, Forecasting methods, Periodogram analysis, Index numbers and their importance, Engle's low, Box -Jenkins approach.

AEC 5330: Multivariate and Non-parametric Statistical Methods for Social and Biological Sciences (3: 45+00)
Current tests of hypothesis when distribution is not specified, rank and permutation tests of one two and k samples. Applications in different non-parametric methods in biological and social research. Least square estimation, GLM, distribution theory and polynomial regression, use of orthogonal polynomials, Multivariate normal distribution and its properties. Wishart distribution, Hotelling T^2, D^2, discriminant functions, multivariate analysis of variance, canonical correlations, principle components, factor analysis.

AEC 5235: Communication Theories, Practices and Interpersonal Relations (2:15+30)
Theories of interpersonal relationships, Recent models, PERT and CEM, effective communication, strategic communication management, current issues, case study

ABM 5405: Operational Research (4:60+00)

Introduction to Operational Research/Management science: Evaluating Models**;** evaluating models and Decision Trees , Utility Theory and subjective probability , Evaluative Models for Multiple criteria : predictive Models **;** forecasting the environment ,Building Mathematical Models for prediction, computer Based corporate simulation models, Dynamic Structural Models, Predicting the effects of Risk- Markov chain, Queuing Theory, Monte Carlo :Optimizing models**;** Elementary optimizing Models for Inventory Management , linear optimizing Models, The simplex Models ,Network Models- Transportation and Transshipment , shortest path and Network ,optimizing Models with integer variables, Optimizing models for sequential Decision, Dynamic Planning

AEC 5231: Social and Environmental issues of Development (2:30+00)
Different aspects of poverty, Food security, Gender aspects of development, Environmental aspects of development, Resource degradation and alternative strategies, Role of different stakeholders in development process

CC 5201: Livestock and Environmental Management (2: 30+00)
Evolution of animal husbandry, Present situation in the world, Energy use in livestock industry, Emission of methane and ruminant physiology, Environmental problems associated with ruminants and non-ruminants, Aquatic systems and livestock industry.

CC 5302: Mathematics for Economics and Management (3: 45+00)
Review of elementary mathematics, Mathematical reasoning, sets and relations, Determinants and matrices, Differential calculus, input-output analysis, Economic accounting, index numbers, Time series analysis, Compilation and presentation of statistics.

CC 5303: Technical and Scientific Writing (3: 30+30)
Importance and scope, technical styles of writing, Technical papers, Research paupers and articles, Thesis and dissertations, References and citation, Documentation, Ethics of writing, presentation skills, case study.

ABM 5303: Agribusiness sector in Sri Lankan Context (3:45+ 00)
Introduction, Agricultural sector in Sri Lanka, Role of agriculture in economic development, Definitions of Agribusiness, Features of Agribusiness, Role of Agribusiness in Sri Lanka, Differences between agribusiness and industry, Contributions of industry to the development of agribusiness, Inter dependence of agribusiness and industry, Role of policy issues in developing the agribusiness (Price policy, Credit policy, Land reform, Farm organization, Agricultural extension and Marketing extension policies) Risk, Uncertainty and Instability of Agribusiness, Role of extension and marketing extension in developing agribusiness, Problems of Agribusiness in Sri Lanka

ABM 5306: Marketing of Farm Products (3:45+ 00)
Introduction, Definition and Scope, Role of Agricultural marketing in economic development, Marketing management, Marketing of farm products, Marketing research, Market structure, Conduct and Performance, Agricultural price analysis

ABM 5307: Farm Financial Management (3:45+00)
Financial statement analysis, Financial intermediation in agriculture, Management control system, Budgeting Techniques and General procedures ,Measuring Risk and Returns, Cost

Accounting, Cost analysis for management Decision, Cooperate Governance, Role and functioning of stock market, Financing the firm

ABM 5308: Organizational Behavior (3:45+00)
Introduction of Organizational Behavior: The fundamentals of Organizational Behavior, Models of Organizational Behavior, Managing communication, Social system and organization culture, Appraising and rewarding performances, Leadership and empowerment, Empowerment and participation: Individual and interpersonal behavior**:** Employee attitude and their effects, Issues between organization and individual, Interpersonal behavior, Informal and formal groups, Teams and team building, Change and its effects, Emerging aspects of organizational behavior, Stress management and counseling ,Motivation

ABM 5309: Human Resources Management (3: 45+00)
Introduction to HRM: HRM function in Organization, Leadership, Management style and team work, Decision making, Conflict management **Strategic HRM:** Role of HRM function for strategic formulation, Competence of HR Manger, Acquiring Human Resources (HR planning recruitment and placing), Developing Human Resources (Motivation, Training, Employee development and career management),Performance Management(Job Evaluation, Assessing work, performances appraisal, managing employee Benefit),Managing Internal and External Environment(Legal Environment and employee Relation, working condition, Health and safety)

ABM 5310: Marketing of Farm Products and Supply Chain Management (3:45+00)
Theories of consumer behavior, pricing techniques, Market chain analysis and efficiency, different marketing models, supply chain management and analysis

ABM 5311: Marketing Management (3:45+00)
Developing marketing strategies and plans, Analysis consumer markets and business markets, Identifying market segments and targets, Branding, Setting product strategies, Pricing strategies and programs, Designing and managing value network, Designing and managing integrated marketing communication, Introductive new market offering, Tapping into Global markets

2.6 Course Evaluation

Courses shall be evaluated on the basis of assignments, seminars, mid semester exam and end-semester examination.

Limitations of the marks for each component;

Criterion	Maximum	Minimum
End Semester Examination	80%	50%
Mid Semester Examination	25%	-----
Practical / field Work	25%	-----
Assignments / Seminars	25%	------
Oral Examinations (End Semester)	10%	------
Term papers / Review reports	20%	------

End semester examination is compulsory for each course and it should be conducted within last two weeks of the semester. Normally the semester shall be 17 weeks. In addition to the end semester examination evaluation of each course should contain at least one other component. The maximum number of components for a course (Except Directed Study) including end semester examination should be three.
Grades and Grade points shall be assigned for each course according to the following table.

Marks (%) (Out of 100)	Grade	Points
≥85	A+	4.0
80 – 84	A	4.0
75 – 79	A-	3.7
70 – 74	B+	3.3
65 – 69	B	3.0
60 – 64	B-	2.7
55 – 59	C+	2.3
50 – 54	C	2.0
45 – 49	C-	1.7
40 – 44	D+	1.3
35-39	D	1.0
40>	F	0

Overall Grade Point Average (GPA) is calculated using the formula;

$$\mathbf{GPA} = \sum \mathbf{C_i}\,\mathbf{G_i} / \sum \mathbf{C_i}$$

Where C_i is the number of credits for the i^{th} course
G_i is the grade point obtain for the i^{th} course

The student should maintain the GPA at the level of 2.5 or above. The student should repeat the courses which he/she got less than D grade at the next earliest opportunity and the students can obtain a maximum of B- grade. If the student has obtain C-, D+ or D grades for a course, the student has alternatives either to repeat the course and or to keep the grade as it is if the student can maintain the minimum GPA requirement.

For the directed study, an advisor will be appointed by the Board of the Study of the MAED programme at the end of the first semester. The directed study may be literature survey of particular area, study of current issue, analysis of relevant field using secondary of primary data, development of economic models, survey or any other assignment with the agreement of the supervisor. After completion of the directed study, the student should conduct a seminar and should be submitted a report. The directed study will be evaluated in following marking scheme.

Component	Marks
Proposal	10 % - 15 %
Supervisors' evaluation reports, (Laboratory / field evaluation. etc.)	25 % - 40 %
Final presentation / Oral examination	30 % - 40 %
Evaluation of final draft report	20 % - 30 %

Total	100 %

After completion of the required number of course credits subjected to requirements of core courses and optional courses the student can apply for comprehensive exam. Board of the study will arrange examination panel with three members out of the teaching panel for the comprehensive oral examination. Student should obtain a Satisfactory "S" grade to be eligible to award MAED.

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2.7 Does the programme have exit at postgraduate diploma level?

According to the guidelines of the Sri Lanka Qualification Framework, Ministry of Higher Education, (Page 23), there are three exit points.

i. Students who completed minimum of 20 credits including 15 credits from the compulsory core courses and maintained the OGPA of 2.0 can exit the programmme and the student will be awarded a postgraduate certificate of AE&D.
ii. Students who completed minimum of 30 credits including 15 credits from the compulsory core courses and maintained the OGPA of 2.0 can exit the programmme and the student will be awarded a postgraduate Diploma of AE&D.
iii. Students who completed minimum of 20 credits including 15 credits from the compulsory core courses and maintained the OGPA of more than 3.0 within first two semesters can transfer to the research degree programmes (MScAgERM & MABM) conducted by the Department of Agricultural Economics and Extension.

2.8 Collaboration with organizations outside universities.

Hector Kobbekaduwa Research and Training Institute

2.9 Tuition Fee

Rs. 75000.00 (can be paid in three installments, Rs. 40000.00, Rs. 20000.00, Rs. 15000.00)

2.10 Other fees

Application Fee Rs. 500.00, Registration Fee Rs. 1000.00, Library Deposit (Refundable)
Rs. 2000.00 and Library Fee Rs. 1000.00 per year. Examination Fee Rs. 5000.00

2.11 Teaching /learning methods

Lectures will be conducted both in Faculty of Agriculture and university of Ruhuna and HARTI Auditorium Colombo. Field visits, field surveys will be arranged for the selected courses. Directed study is a independent study of the students with the guidance of appointed advisors.

3.Master of Science (MSc) in Agricultural Economics and Resource Management

3.1 Introduction

The human recourses in higher education institutions and in other organizations in Sri Lanka are not properly utilized contrast to other countries to train the manpower for future generations especially in the fields of agricultural and social sciences. However, undergraduates who are working in different institutions are keen to find postgraduate opportunities for their career development. The main objective of this degree program is to cater the demand for postgraduate studies of the fields of agricultural and natural resource management especially in Southern Sri Lanka as well as in the country considering emerging fields in the present. Secondly, the available expertise human resources in University of Ruhuna and other government and non-governmental institutions can be utilized to train the man power needed to development process of Sri Lanka. Thirdly, it is believed that through research component of the degree program, the university can enhance its research activities to solve the problems especially in Southern Sri Lanka.

3.2 Target group

1. Graduates of following disciplines involved in development programs in different institutions (Preferably a special honors degree).
2. Unemployed graduates (at least lower second class honors) in following disciplines who are seeking postgraduate studies
   (*Agriculture, *Social Sciences, *Biological Sciences, *Physical Sciences and *Management)

With,

- Adequate English knowledge to follow the program (Placement Test or another proof)

and

- Ability to attend regular classes (Saturdays / Sundays)

3.3 Applications

By advertisement.
Following documents should be provided with the application:

1. A copy of the first degree
2. Two letters of recommendations
3. A copy of English proficiency test (if available)

4. Copies of any other documents to prove the ability to follow the course

Applicants should appear for following two papers in the selection test conducted by the Department of Agricultural Economics and Extension of University of Ruhuna.

1. General English
2. Basic Mathematics and General Economics

Applicants shall be selected in competitive basis. The results of the placement test, the results of the first degree, experience gained in relevant disciplines will be considered as selection criteria. Number of students per batch will be limited to 30 at the initial level considering the availability of resources and it will be revised later considering the resources available.
Based on the results of the placement test, selected applicants are advised to follow preliminary courses.

3.4 Duration of the course

Full time: Minimum four semesters (Two academic years)
Part time: Minimum six semesters (Three academic years)

MSc (Full time) four semesters (two calendar years). The MSc course shall normally be a full time program. Employed graduates will be considered as part time students by the Board of the study (Academic Committee) depending on the nature of the employment. Minimum time period for part time students shall be six semesters (three calendar years).

3.5 Structure of the study program

The degree program consists of course work and a research component. First two semesters are designed mainly for the course work to acquire the knowledge about the field of study, analytical tools and research designs and partly to develop the research design. Second two semesters are mainly for the research and partly for the course work to fulfill the need in analysis and policy issues.
Student should complete 25 credits for the course work and 25 credits for research in order to complete the preliminary requirements of the degree program.

- Course units (25) + Research (35) + Thesis

Restrictions in the course unit system

	Maximum	Minimum

Number of courses per semester (Full time)	05	------
Number of courses per semester (Part time)	03	-------
Number of course credit hours per semester (Full time)	18	--------
Number of course credit hours per semester (Part time)	08	--------
Number of research credits per semester(Full time)	15	02
Total number of credits per semester	18	08
Total number of courses per the program	----	10
Total number of credits for course work	----	25
Total number of research credits	----	25
Total number of core courses	----	04
Total number of elective courses	----	04
Total number of credits from elective courses	----	12
Total number of credits from core courses	----	12
Credits from seminars	***	01
Number of preliminary courses	***	

*** As recommended by the Board of Study

Note: One course unit is equivalent to 15 lecture hours or 30 hours of practical or 45 hours of field work or other equivalent combination of lectures, practical and field work.

For preliminary courses student should obtain pass marks (50%) but not considered as credit courses. However preliminary courses also will be considered for maximum number of courses per semester.

Course Units (04 core courses + 04 supporting courses + seminar is compulsory).
Maximum 05 courses per semester (18 credits)

Courses shall be evaluated on the basis of assignments, seminars, mid semester exam and end-semester examination.

Limitations of the marks for each component;

Criterion	Maximum	Minimum
End Semester Examination	80%	50%
Mid Semester Examination	25%	-----
Practical / field Work	25%	-----
Assignments / Seminars	25%	------
Oral Examinations (End Semester)	10%	------
Term papers / Review reports	20%	------

End semester examination is compulsory for each course and it should be conducted within last two weeks of the semester. Normally the semester shall be 17 weeks. In addition to the end semester examination evaluation of each course should contain at least one other component. The maximum number of components for a course (Except seminar) including end semester examination should be three.
Grades and Grade points shall be assigned for each course according to the following table.

Marks (%) (Out of 100)	Grade	Points
≥85	A+	4.0
80 – 84	A	4.0
75 – 79	A-	3.7
70 – 74	B+	3.3
65 – 69	B	3.0
60 – 64	B-	2.7
55 – 59	C+	2.3
50 – 54	C	2.0
45 – 49	C-	1.7
40 – 44	D	1.3
40>	F	0

For passing a course the student should obtain a minimum of C grade. Overall Grade Point Average (GPA) is calculated using the formula;

$$\mathbf{GPA} = \sum \mathbf{C_i}\,\mathbf{G_i} / \sum \mathbf{C_i}$$

Where C_i is the number of credits for the i^{th} course
G_i is the grade point obtain for the i^{th} course

The student should maintain the GPA at the level of 2.5 or above. The student should repeat the courses which he/she got less than D grade at the next earliest opportunity and he/she can obtain a maximum of B- grade. If the student has obtain C- or D grades for a course he / she has alternatives either to repeat the course and or to keep the grade as it is if he / she can maintain the minimum GPA requirement.

The student should submit the research proposal before the end of the second semester in order to register for third semester after approval of the relevant board. (After a presentation)

Students are advised to submit the research proposal within the first two semesters to avoid unnecessary delays of the program. Thesis / report of the study can be submitted after 9 months of the submission of the approved research proposal. The student should obtain “S” grade for the research component for each semester.

3.6 Examination of the thesis research

After completion of the research study, the student should conduct a research seminar at the department. The major supervisor should arrange the seminar with the assistance of other members of the department and should invite the experts in the discipline to have an adequate input to improve the thesis.
Before the submission of the thesis the student should present the results at the seminar organized by the department with the approval of the supervisors for the comments of the experts in the relevant field.

Thesis should submit to the registrar office with the signatures of all supervisors, and head of the department along with three names of potential external examinations of the discipline. The registrar shall send the thesis to the external examiner and (interested examiner) will be arranging the examination within a period of two months.

If there are minor modifications recommended by the external examiner, the student can submit the corrected thesis within a period of three months. If external examiner / board of examiners recommend to resubmit or to rewrite the thesis, the student should resubmit the thesis after six months period and should be registered for another semester.

3.7 Fees

As the program is designed to be a self financed project following fee structure is designed to cover the expenditure of the postgraduate program.

Application fee	Rs. 500 .00
Admission fee	Rs.1000.00
Tuitions fee	Rs.15000.00 per semester
Library fee	Rs.2000.00 refundable + Rs.500 per semester
Thesis submission fee	Rs.5000.00
Examination fee	Rs.5000.00

Non–refundable application fee should be paid at the time of obtaining the application form. Admission fee and refundable library fee should be paid at the time of registration. Tuition Fee for each semester should be paid at the beginning of the each semester. Financial matters will be handled according to the financial regulations of the university.

3.8. Courses for Master of Science in Agricultural Economics and Resource Management (MScAgERM)

Core Courses

AEC 5201: Economic theory (For non-economic fields) (2: 30+00)

Nature, definitions, scope and importance of economics. Economics as a science. Basic economic concepts, consumption, production and markets. Pricing of products and factors of production. Profit maximization and cost minimization. Introduction to theories of classical, Keynesian and Neo-classical theories of macro-economics.

AEC 5302: Advanced micro economics (3: 45+00)

Functions of the price system, Theories of consumer behavior, equilibrium under different market situations, Theory of imperfect competition, partial equilibrium quasi-equilibrium and general equilibrium, Modern theories with focused to risk and uncertainty, inter-temporal allocation of resources.

AEC 5303: Advanced macro economics (3: 45+00)

National income, static and dynamic analysis, equilibrium in dynamic system, classical, Keynesian and post-Keynesian theories of output and employment, theories of money and prices, business cycle theories, monetary and fiscal framework for economic stability and growth.

AEC 5304: Agricultural economics (3: 45+00)

Institutional setting, inter-sectoral forward and backward linkages, Political and economic factors and agriculture, models of agriculture development (Schultz, Jorgenson, FEI, Mellor, Todaro and Boserup), Development problems in Sri Lankan agriculture and South Asia, Agricultural finance, World agricultural trade and WTO.

AEC 5305: Quantitative methods (3: 45+00)

Properties of estimation, Sampling techniques and experimental designs, scales of measurements, descriptive statistics, correlation, regression, hypothesis testing, use of non-parametric techniques and time-series models, introduction to ANOVA.

AEC 5306: Theories of Agricultural Resource Management (3: 45+00)

Nature and scope of production relations, concepts of production functions, optimal product and input combinations, Market economic systems, market failure, concepts of welfare economic, property right, public goods and common property resources, Economics of renewable resources, fisheries, forest, water resources, non-renewable resources, land and labour management.

AEC 5307: Agricultural policy (2:30+00)

Importance of agricultural policies with special reference to Sri Lanka. Policies of price, research, land, credit, irrigation and insurance. Improving food and nutrition security, Increasing Competitiveness, Increasing Investments, Export

and Marketing development, and Institutional and Management Reform, Analytical tools for agricultural policies, New economic order, IPR and international trade policies.

AEC 5110: Seminar (1)

Students should submit a seminar report after a presentation related to current issue approved by the teacher concerned.

Elective Courses for MABM and MScAgERM

AEC 5311 Project planning and evaluation (3: 40+15)

Introduction to national economic policies, market orientation and demand forecasting, product planning and control, plant organization and lay out production scheduling, manpower planning, introduction and scheduling. Introduction to network analysis, Inventory preparation and control of raw materials, inputs and outputs, Project evaluation, marginal analysis, break-even analysis, capital budgeting techniques, economic and financial analysis, sensitivity analysis, Introduction to extended B/C analysis. (Practical)

AEC 5313: Mathematical programming techniques in agriculture (3: 30+30))

Concepts of linear and non linear programming. Integer, recursive, quadratic and risk programming techniques including game theory models. Multiple objective programming techniques and their application to agriculture, Use of computer software (LINDO, GULP) for programming. (practical)

AEC 5314 Extension management (3: 30+30)

Development of extension models, Current trends, extension application, adoption and diffusion, extension and development mix, institutional arrangements and linkages.

AEC 5215 Comparative studies of South Asian economies (2: 30+00)

Agriculture in different social political, social and economic systems, Land, labour and capital in agriculture in selected countries and in South Asia. Price determination, stabilizing and measures, Agricultural trade within the regional, Different trade models (gravity and CMS)

AEC 5316 Social and economic impact assessments of agricultural projects (3: 40+10))

Conventional project evaluation models, B/C, NPV, IRR, Pay-back period, sensitivity analysis. Incorporating social and environmental impacts of projects in project analytical tools, Different valuation techniques for social and environmental impacts.

AEC 5317 Information systems for business and research (3: 20+25)

Introduction to agri-business, Evolution of communication systems, Institutional framework and communicational set-up, Business communication, International trade and communication systems, e-business, Business networks, Chain-management in marketing, Limitations and constraints in use of advanced technologies in agri-business.

AEN 5318 Spatial Information Systems / GIS and IT (3)

Introduction to GIS and remote sensing, Use of GIS and remote sensing different activities in agriculture, Applicability and possibility to use GIS systems agricultural information systems. Agribusiness and Information Technology, Use of computer software related to knowledge systems.

AEC 5319 Energy and environmental economics (3: 45+00)

Overview of natural resource economics, optimization of inter-temporal energy resource use, Energy and economic development, pattern of energy use and energy analysis in agriculture, Energy productivity and efficiency, economic analysis of energy, Energy conservation and economic incentives, Energy pricing and OPEC, Alternative energy sources, Energy policies in different countries, Renewable energy sources and environmental interaction. Energy and sustainable development.

AEC 5320 Economics of water resources (3: 45+00)

Sectoral allocation of water, Principles of water resource allocation, Characteristics of demand and supply of water with special reference to agriculture, Pricing of water and management. Recent trends and threats of water use. Ground water and irrigation.

AEC 5321 Management of water resources and catchments (3: 45+00))

Hydrology, water retention structure, afforestation and deforestation of water sheds. Project formulation and management. Development of project proposal, Project Implementation Strategy, watershed management in Sri Lanka and South Asia.

AEC 5322 Economics of marine and inland fisheries (3: 45+00)

Characteristics of common property and open access fisheries resources, The concept of sustainable yield, Maximum sustainable yield, Maximum economic yield, Maximum social yield and open access equilibrium, Development-conservation dilemma in fisheries and importance of fisheries management, Role of institutions in fisheries sector development, The economics of aquaculture.

AEC 5223 Forest Management (2: 30+00)

Required standard, Environment Management Systems, Meeting the requirements, Tackling Social Issues, and Forest Management Certification

AEC 5324 Welfare economics (3: 45+00)

Scope of welfare economics, Utility maximization in perfectly competitive market, General equilibrium, economic efficiency, Pareto optimality and perfect competitive market economy, Incompleteness of Pareto principles, Social welfare function, Issues in applied welfare economics.

AEC 5325 Land and labour management in agriculture (3: 45+00)

Planning a farm as a unit, Land and labour laws in Sri Lankan and Asian context, Management of land and labour within the dynamic framework of risk and uncertainty.

AEC 5326 Global and regional trading systems and international food policies (3: 45+00)

Theories of international trade, evolution of international trading systems, Colonial era and new economic order, International monetary systems, International food policies, Economic Integration: custom unions and free trade areas, Regional trading systems and agricultural trade, ASIAN, EEC, COMICON, CAROCOM.., Analytical models.

AEC 5327 Agricultural marketing and price analysis (3: 45+00)

Agricultural Marketing Systems, Production, Price and Policy Context, Problems and Measures for Improving Agricultural Product Distribution and Markets, and Measures to Enhance the Efficiency of Agricultural Marketing Systems, Application of econometric methods to analyze price movements and price indices. Terms of trade and integrated price policy.

AEC 5328 Economic statistics (Time series, Indices, production functions) (3: 30+30)

Time series data sets, Decomposition of time series data, Forecasting methods, Periodogram analysis, Index numbers and their importance, Engle's low, Box - Jenkins approach.

AEC 5329 Resource Economics (3: 45+00)

Principles of resource economics, Market failure, Public goods and common property resources, External economies and diseconomies, Economics of environmental pollution, Solutions to resolve environmental pollution, Environmental certificates, Pigovian Tax, Valuation of environmental pollution, EIA and SEIA, Programming techniques.

AEC 5330 Multivariate and non-parametric statistical methods for social and biological sciences (3: 45+00)

Current tests of hypothesis when distribution is not specified, rank and permutation tests of one two and k samples. Applications in different non-parametric methods in biological and social research. Least square estimation, GLM, distribution theory and polynomial regression, use of orthogonal polynomials, Multivariate normal distribution and its properties. Wishart distribution, Hotelling T^2, D^2, discriminant functions, multivariate analysis of variance, canonical correlations, principle components, factor analysis.

AEC 5331 Agricultural Policy analysis (3: 45+00)

Conceptual Framework and Hypotheses, Economic Performance and Policies, Social Accounting Matrix and a Multiplier Analysis, General Equilibrium Model, and Effects of Policy Reforms

AEC 5332 Rural Sociology /Agricultural sociology (3: 45+00)

Fundamentals of rural sociology, concepts and recent approaches used in the study of rural society, Agrarian rural social structure, family household and inheritance, Peasant culture and dynamics of technology affecting agriculture and rural institutions.

AEC 5333 Programme Development and Management (3: 45+00)

Programme Planning Monitoring and Evaluation: Introduction of programme, Definition of programme, Need identification, Programme planning, Change Management, Group work and Leadership, Programme Monitoring, Programme Evaluation Programme Management and Administration: Introduction of management and administration, Definition of management and administration, Principles of management, Function of management (Planning, Organizing, Staffing, Directing and Controlling)

ANS 5234 Livestock and environmental management (2: 30+00)

Evolution of animal husbandry, Present situation in the world, Energy use in livestock industry, Emission of methane and ruminant physiology, Environmental problems associated with ruminants and non-ruminants, Aquatic systems and livestock industry.

4. Master of Agri-Business Management (MABM) and Diploma in Agri-Business Management (DABM)

4.1. Introduction

Agricultural sector in Sri Lanka still plays a vital role in the economy provide employment opportunities for about one third of the active labour force of the country and contributing about one fifth of the domestic production. However, during last two decades, development of the agricultural sector is negligible compared to industrial and service sector. Recent studies highlight that processing, marketing, agro-based industries and entrepreneurship development especially in non-plantation agricultural sector in Sri Lanka is not comparable with other countries in the Asian region.

Expertise human recourses in higher education institutions and in various other organizations in Sri Lanka are not properly utilized contrast to other countries to train the manpower for future generations especially in the fields of agricultural and social sciences. Employees who are working in different institutions are keen to find postgraduate opportunities for their career development. There is a big gap between demand for training and the supply of such opportunities in the country especially in the Southern Region. At present, in the Southern region, no institution is offering courses to improve the manpower in the field of agribusiness management by incorporating management tools with agribusiness, agriculture and agro-processing. It is important to fulfill the requirement by University of Ruhuna as the leading institution of manpower development in the region. This postgraduate program has been designed to utilize resources in the University of Ruhuna and other institutions to cater the emerging such demands in Southern Region of the country.

4.2. Objectives

The main objective of this degree program is to cater the demand for postgraduate studies of the fields of agricultural business management, entrepreneurship development and agro-based industries especially in Southern Sri Lanka as well as in the country considering emerging fields in the present. Secondly, the available expertise human resources in different departments in the University of Ruhuna and other government and non-governmental institutions can be utilized to train the man power needed to development process of Sri Lanka. Thirdly, it is believed that through research component of the degree program, the university can enhance its research activities to eradicate poverty especially in the agricultural sector and to solve the problems in Southern Sri Lanka.

4.3 Target Groups

4.3.1 Target Groups of the (MABM) Programme

6. Graduates with first class or second class honors in the special degree programs in Agriculture, Commerce, Management, Business Administration, Food Science and Technology, Economics or related fields from a recognized university.

7. Graduates in the above fields with a minimum of one year experience in a recognized institution in the field of Business Management, Entrepreneurship, Ago-based industries or Extension/Development activities.
8. Graduates in the fields of Biological Sciences, Economics, Management, Business, Agriculture, Food Science with Post Graduate Diploma in the fields of Management, Entrepreneurship, Agro-processing or related fields.
9. Graduates in any discipline from a recognized university with a minimum of three years post qualifying work experience in the managerial capacity in the fields of agri-business.
10. A professional qualification that will be considered on a case by case basis, by the board of study with the approval of the Director of Postgraduate studies of University of Ruhuna and a minimum of three years of post qualifying experience in Business Management or related fields.

And a good working knowledge in English

4. 3.2 Target Groups of the (DABM) Programme

1. Graduates in the fields of Agriculture, Management, Economics, Biological Sciences who are seeking professional qualifications in the field of Agribusiness management.
2. Employees in the field of agriculture, business, extension and development activities with a professional qualifications accepted by the Board of Study subjected to approval of Director of Postgraduate studies of University of Ruhuna.
   And a good working knowledge in English

4.4 Structure of the programme

2.4.1 Structure of the study program

The degree program consists of course work and a research component basically two year duration in the semester system. The course component provides a broad introduction to key aspects of business management, agricultural business opportunities, principles of agro-based enterprises, technical know-how of the agro-enterprises and agri-business to give an excellent preparation for a career in business management and agro-based enterprises. First two semesters are designed mainly for the course work to acquire the knowledge about the field of study, analytical tools and research designs and partly to develop the research design. Second two semesters are mainly for the research and partly for the course work to fulfill the requirement of the program.

Students should complete the following requirements to award the Degree / Diploma.

1. **For Master of Agri-Business Management (MABM)**:
   Minimum of 30 course credits subjected to the requirements of restrictions of examination guidelines (subjected to the restrictions of core courses, optional courses and supplementary courses), a dissertation after a research component of minimum of one year duration, two seminars (one for the research proposal and one for the research findings) and satisfactory grade for in the thesis defense examination. (30 credits of course work and a research component with 25 credits)

2. **For Diploma in Agri-Business Management (DABM):**
   Minimum of 30 course credits and satisfactory grade in the final comprehensive oral examination.

Courses and examinations will be conducted according to the semester course unit system adopted by the Faculty of Agriculture, University of Ruhuna, under the guidelines set by the Quality Assurance and Accreditation Council of the University Grant Commission.

4.4.2 Structure of the course unit system

One credit unit is defined as 15 hours of teaching, thirty hours of practical work or a combination of theory and practical subjected to the approval of faculty board of the Faculty of Agriculture and the Senate of the University of Ruhuna.

	Maximum	Minimum
Number of courses per semester	05	------
Number of course credit hours per semester	18	--------
Number of research credits per semester	15	--------
Total number of credits per semester	18	------
Total number of courses per the program	----	10
Total number of credits for course work	----	30
Total number of research credits	----	25
Total number of core courses	----	04
Total number of elective courses	----	04
Total number of credits from elective courses	----	10
Total number of credits from core courses	----	15
Credits from seminars	***	01
Number of preliminary courses	***	

*** As recommended by the Board of Study

Courses shall be evaluated on the basis of assignments, seminars, mid semester exam and end-semester examination.

Limitations of the marks for each component;

Criterion	Maximum	Minimum
End Semester Examination	80%	50%
Mid Semester Examination	25%	-----
Practical / field Work	25%	-----
Assignments / Seminars	25%	------
Oral Examinations (End Semester)	10%	------
Term papers / Review reports	20%	------

End semester examination is compulsory for each course and it should be conducted within last two weeks of the semester. Normally the semester shall be 17 weeks. In addition to the end semester examination evaluation of each course should contain at least one other component. The maximum number of components for a course (Except seminar) including end semester examination should be three.
Grades and Grade points shall be assigned for each course according to the following table.

Marks (%) (Out of 100)	Grade	Points
≥85	A+	4.0
80 – 84	A	4.0
75 – 79	A-	3.7
70 – 74	B+	3.3
65 – 69	B	3.0
60 – 64	B-	2.7
55 – 59	C+	2.3
50 – 54	C	2.0
45 – 49	C-	1.7
40 – 44	D	1.3
40>	F	0

For passing a course the student should obtain a minimum of C grade. Overall Grade Point Average (GPA) is calculated using the formula;

$$\mathbf{GPA} = \sum \mathbf{C_i}\,\mathbf{G_i} / \sum \mathbf{C_i}$$

Where C_i is the number of credits for the i^{th} course
G_i is the grade point obtain for the i^{th} course

The student should maintain the GPA at the level of 2.5 or above. The student should repeat the courses which he/she got less than D grade at the next earliest opportunity and

the students can obtain a maximum of B- grade. If the student has obtain C- or D grades for a course, the student has alternatives either to repeat the course and or to keep the grade as it is if the student can maintain the minimum GPA requirement.

The MABM student should submit the research proposal before the end of the second semester in order to register for third semester after approval of the relevant supervisory panel. (After a presentation)
Students are advised to submit the research proposal within the first two semesters to avoid unnecessary delays of the program. Thesis / report of the study can be submitted after 9 months of the submission of the approved research proposal.

The MABM students should obtain "S" grade for the research component for each semester after submission of research proposal.

4.5 Examination of the thesis research

4.5.1 Examination of the thesis research for MABM degree

After completion of the research study, the student should conduct a research seminar at the department. The major supervisor should arrange the seminar with the assistance of other members of the department and should invite the experts in the discipline to have an adequate input to improve the thesis. Before the submission of the thesis the student should present the results at the seminar organized by the department with the approval of the supervisors for the comments of the experts in the relevant field.

Thesis should submit to the registrar office with the signatures of all supervisors, and head of the department along with three names of potential external examinations of the discipline. The registrar shall send the thesis to the external examiner and will be arranged the thesis defense examination within a period of two months.

If there are minor modifications recommended by the external examiner, the student can submit the corrected thesis within a period of three months. If External examiner / board of examiners recommend to resubmit or to rewrite the thesis, the student should resubmit the thesis after six months period and should be registered for another semester.

4.5.2 Comprehensive Examination of DABM

After completion of the required number of course credits subjected to requirements of core courses and optional courses the student can apply for comprehensive exam. Board of the study will arrange examination panel with three members out of the teaching panel for the comprehensive oral examination. Student should obtain a Satisfactory "S" grade to be eligible to award the Diploma in Agribusiness Management.

4.6 Courses

Courses offered for the MABM and DABM programs have been divided into two groups in order to assure acquisition of adequate materials from the core courses. Hence, students should complete a minimum of 15 credits from the core courses and the rest can be covered either from core courses or optional courses. At least one seminar is compulsory for all students. Courses consist of class sessions, practical, field work, seminars, discussions, assignments and combinations of above components. One credit is equal to fifteen hours of theory classes or 30 hours of practical sessions or 45 hours of field work or any other equivalent combinations.

4.7 Advisory Committee of students

An advisory committee shall be appointed for each MABM student based on the intended research field of the student. The advisory committee consists of the Major advisor and two others from his supporting fields of study. Major advisor and one of the other supervisors should be from the teaching panel of the program. The third supervisor shall be either from the teaching panel or out side member who is a qualified person to supervise a post graduate student with the approval of academic committee of the Master program.

4.8 Fees

As the program is designed to be a self financed project following fee structure is designed to cover the expenditure of the postgraduate program.

Application fee	Rs.500 .00
Registration fee	Rs1000.00
Tuitions fee	Rs.15000.00 per semester
Library fee	Rs.2000.00 refundable + Rs.500.00 per semester
Thesis submission fee for MABM students	Rs.5000.00
Examination fee	Rs.5000.00

Non–refundable application fee should be paid at the time of obtaining the application form. Admission fee and refundable library fee should be paid at the time of registration. Tuition Fee for each semester should be paid at the beginning of the each semester. Financial matters will be handled according to the financial regulations of the university.

Examinations, Records, Certificates, Transcripts and other administrative procedures shall be according to the examination and administrative procedures of University of Ruhuna.

4.9 Courses

Courses consist of class sessions, practical, field work, seminars, discussions, assignments and different combinations. One credit is equal to fifteen hours of theory classes or 30 hours of practical sessions or 45 hours of field work or any other equivalent combinations.

Course Notations

Course notation consists of two or three letters at the beginning representing the relevant programme as follows,

ABM	Agribusiness Management	AEC	Agricultural Economics
AEN	Agricultural Engineering	ANS	Animal Science
CC	Common Course	CS	Crop Science

The four digit number represents the master level, number of credit hours and the course number for the programme respectively.

4.10 Courses offered for the MSc AgERM, MABM and DABM Programs

MABM student should complete a half of the total course credit requirement from the core courses of ABM while MSc AgERM students should complete a half of the total course credit requirement from the core courses of AEC. Remaining course credit requirement can be completed either from ABM courses or AEC courses or any other discipline according to the requirement of the student.

Core Courses for Master of Agribusiness management (MABM)

ABM 5301: Management Practices and Process (3:45+00)

Introduction to Management, Environment of Management: Environment and cooperate culture, Managing in global environment, Managerial ethics and cooperate social responsibility, Planning: Organizational planning and goal setting, Strategy formulation and implementation, Managerial decision making, Fundamentals of organizing, Leadership in organization, Importance of control, Operation and service management, Information technology and E-Business

ABM 5302: Management Information Systems (3: 45+ 00)

Introduction, Information System and Organizational Management, Information System in Organization, Managing Data Resources, Building Information Systems, Enhancing Management Decision Making, Computers, Internet and Telecommunication for Management Information System, Management Information System and Security

ABM 5303: Agribusiness sector in Sri Lankan Context (3: 45+ 00)

Introduction, Agricultural sector in Sri Lanka, Role of agriculture in economic development, Definitions of Agribusiness, Features of Agribusiness, Role of Agribusiness in Sri Lanka, Differences between agribusiness and industry, Contributions of industry to the development of agribusiness, Inter dependence of agribusiness and industry, Role of policy issues in developing the agribusiness (Price policy, Credit policy, Land reform, Farm organization, Agricultural extension and Marketing extension policies) Risk, Uncertainty and Instability of Agribusiness, Role of extension and marketing extension in developing agribusiness, Problems of Agribusiness in Sri Lanka

ABM 5304: Business Statistics (3: 45+00)

Need of statistics, Organizing statistical data: summarizing statistical data: Probability; introduction to Basic theory: Random variable and probability distribution: sampling and sampling distribution: Estimation: Hypothesis Testing: Decision theory: Analysis of variance, chi- square and Non parametric Tests of significance: linear Regression and correlation: Multiple Regression Analysis: Time Series: Index Numbers.

ABM 5405: Operational Research (4:60+00)

Introduction to Operational Research/Management science: Evaluating Models; evaluating models and Decision Trees , Utility Theory and subjective probability, Evaluative Models for Multiple criteria : predictive Models; forecasting the environment, Building Mathematical Models for prediction, computer Based corporate simulation models, Dynamic Structural Models, Predicting the effects of Risk- Markov chain, Queuing Theory, Monte Carlo :Optimizing models; Elementary optimizing Models for Inventory Management, linear optimizing Models, The simplex Models ,Network Models- Transportation and Transshipment, shortest path and Network, optimizing Models with integer variables, Optimizing models for sequential Decision, Dynamic Planning

ABM 5306: Marketing of Farm Products and Supply Chain Management (3:45+ 00)

Introduction, Definition and Scope, Role of Agricultural marketing in economic development, Marketing management, Marketing of farm products, Marketing research, Market structure, Conduct and Performance, Agricultural price analysis

ABM 5307: Farm Financial Management (3:45+00)

Financial statement analysis, Financial intermediation in agriculture, Management control system, Budgeting Techniques and General procedures, Measuring Risk and Returns, Cost Accounting, Cost analysis for management Decision, Cooperate Governance, Role and functioning of stock market, Financing the firm

ABM 5308: Organizational Behavior (3:45+00)

Introduction of Organizational Behavior: The fundamentals of Organizational Behavior, Models of Organizational Behavior, Managing communication, Social system and organization culture, Appraising and rewarding performances, Leadership and empowerment, Empowerment and participation: Individual and interpersonal behavior: Employee attitude and their effects, Issues between organization and individual, Interpersonal behavior, Informal and formal groups, Teams and team building, Change and its effects, Emerging aspects of organizational behavior, Stress management and counseling, Motivation

ABM 5309: Human Resources Management (3: 45+00)

Introduction to HRM: HRM function in Organization, Leadership, Management style and team work, Decision making, Conflict management Strategic HRM: Role of HRM function for strategic formulation, Competence of HR Manger, Acquiring Human Resources (HR planning recruitment and placing), Developing Human Resources (Motivation, Training, Employee development and career management), Performance Management(Job Evaluation, Assessing work, performances appraisal, managing employee Benefit), Managing Internal and External Environment (Legal Environment and employee Relation, working condition, Health and safety)

ABM 5310: Marketing Management (3+45+00)

Developing marketing strategies and plans, Analysis consumer markets and business markets, Identifying market segments and targets, Branding, Setting product strategies, Pricing strategies and programs, Designing and managing value network, Designing and managing integrated marketing communication, Introductive new market offering, Tapping into Global markets

ABM 5111: Seminar (1)

Students should submit a seminar report after a presentation related to current issue approved by the teacher concerned.