**Wollo University**

**College of Agriculture**

**Course Syllabus for MSc Program**

**2nd Semester, 2012 EC**

**Dessie, Ethiopia**

**Summary of departments and active MSc programs in the college of agriculture**

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| **N** | **Department** | **Program** | **Remark** |
| **1** | Agricultural Economics | Agricultural Economics |  |
| **2** | Animal Science | Animal Production |  |
| **3** | Plant Sciences | Plant Breeding |  |
| Agronomy |  |
| **4** | Rural Development and Agricultural Extension | Rural Development Management |  |
| **5** | Forestry | Forest Management and Climate Change |  |

1. **DEPARTMENT: AGRICULTURAL ECONOMICS**

**Program:** MSc in Agricultural Economics

**Course 1. Advanced Econometrics: Theory and Application**

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| **Course Title** | **Advanced Econometrics: Theory and Application** |
| **Course Code** | AGEC 541 |
| **Credit Hours** | 3 |
| **Classification** | Core |
| **Semester** | Year 1, Semester II |
| **Description** | This course intends to equip the students with the necessary theoretical econometric tools and statistical packages which would enable them to do applied researches.  Starting with the brief reviews of the classical linear models and the key classical assumptions, the course covers some advanced topics: probability models and limited dependent varible models; Generalized Method of moments (GMM), simultaneous equation models and their estimation methods; an introduction to the panel data econometrics and time series analysis.  The course will be extensively supported by practical sessions with the help of econometric and mathematical software like STATA & MATLAB. |
| **Objective** | The overall aim of the course is to expose students to basic econometric theory and provide them with sufficient knowledge and practical skill that enable them to competently use it in their research.  In addition, the unit will help students to understand and interpret empirical research that uses econometrics. By completing the unit students will acquire sufficient knowledge to apply multivariate analysis of the cross-section and time-series data to macro-and micro-economic problems of economic development.  Specifically at the end of the course the students are expected to:   * Gain a clear understanding of econometric methods for the analysis of quantitative data * Build the ability to read, understand and critically examine journal articles and other research outputs that use econometric analysis * Be competent in the use of and familiarity with modern statistical software * Develop and improve their ability to articulate and present empirical results in a report or research paper format |
| **Prerequisites** | Undergraduate Econometrics, calculus and linear algebra. |
| **Course content** | **Chapter 1: Introduction (6 Lecture hours)**  1.1. Definition of Econometrics  1.2. Uses of econometrics   * 1. The four elements of econometrics   1.4. Review of some important statistical terms  **Chapter 2: The Simple Regression Model (9 Lecture hours)**  2.1. Definition  2.2. Ordinary Least Squares (OLS) estimates  2.3. Properties of OLS and its estimators  2.4. Expected values and variances of OLS estimators  2.5. Units of measurements and functional forms  **Chapter 3: Multiple Regression Analysis (12 Lecture hours)**  3.1. Estimation  3.1.1. Mechanics and interpretation of the OLS  3.1.2. Expected value and variance of the OLS estimators  3.1.3. Efficiency of the OLS estimators  3.2. Inference  3.2.1. Sampling distribution of OLS estimators  3.2.2. Hypothesis testing  3.2.3. Confidence intervals  3.2.4. Testing multiple linear restrictions  3.2.5. Reporting regression results  3.3. Asymptotics  3.3.1. Consistency  3.3.2. Asymptotic normality and large sample properties  3.3.3. Asymptotic efficiency of OLS  **Chapter 4: Other Estimation Techniques (6 Lecture hours)**  4.1. Instrumental variables (IV) estimation  4.1.1. Omitted variables in a simple regression model  4.1.2. Estimation of multiple regression models  4.1.3. Two stages least squares (2SLS)  4.1.4. IV to errors-in-variables problems  4.1.5. Testing for endogeniety  4.2. The Maximum Likelihood Estimator (MLE)  4.3. The Generalized Least Squares and Method of Moments estimators (GLS and GMM)  **Chapter 5: Estimation Problems (9 Lecture hours)**  5.1. Specification and diagnostic tests  5.2. Multicollinearity  5.3. Functional forms  5.4. Proxy variables  5.5. Measurement errors and missing data  5.6. Autocorrelation  5.7. Hetroscedasticity  5.8. Simultaneity  **Chapter 6: Limited Dependent Variable Models (6 Lecture hours)**  6.1. Linear probability model  6.2. Logit and Probit models  6.3. The Tobit model |
| **Reading List** | Major readings/ texts **Text book-**Introductory Econometrics: A modern Approach, Wooldridge (2006), 3rd edition  Basic Econometrics, Gujarati (2003), 4th edition.  Introduction to Econometrics, Maddala (1992), 2nd edition.  Verbeek, M. (2004). *A Guide to Modern Econometrics* (2nd Ed.). John Wiley and Sons Ltd.  Wooldridge, J.M. (2002). *Econometric Analysis of Cross-section and Panel Data.* The MIT Press. Hayashi, F. (2000). Econometrics. Princeton University Press Greene, W. (2003). *Econometric Analysis*(5th Ed.). Pearson Education, Inc., Upper Saddle River, New Jersey, 07458.  ***Additional readings***  Johnston, J. (1986). *Econometric Methods.* (3rd Ed.). McGraw-Hill.  Baltagi, D. (2001). *Econometric Analysis of Panel Data* (2nd Ed.). Chichester Wiley.  Cameron, A.C., Trived, P.K. (2005*). Microeconometrics: Methods and Applications*. Cambridge University Press  Griffiths, J.E., Hill, R.C., Judge, G.G. (1993). *Learning and Practicing Econometrics.* John Wiley and Sons Inc.  Madalla, G. S., (1995). *Econometrics.* McGraw-Hill. |
| **Assessment method** | Continuous assessment 60% (Individual and group assignments and discussion, regression results report writing, task based discussions)Final Exam 40% |

**Course 2. Advanced Macroeconomics**

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| **Course Title** | **Advanced Macroeconomics** |
| **Course Code** | AGEC 512 |
| **Credit Hours** | 3 |
| **Classification** | Core |
| **Semester** | Year 1, Semester II |
| **Description** | The course provides basic understanding of the theoretical foundations of macroeconomics at advanced level. The course uses a consistent approach based on microeconomic foundations and the rationality of economic agents to address several issues in monetary policy, exchange-rate policy and fiscal policy. It discusses the details of aggregate demand and supply in both closed and open economy cases.  Topics to be covered include: aggregate supply and demand, aggregate consumption and savings, investment, money demand and supply, credit and banking, deficits and inflation, fix-price models, new growth theory, & short-run macroeconomic issues. |
| **Objective** | The main objectives of this course are:   * Equipping the students with detailed theoretical and applied knowledge of short run macroeconomic models * Familiarizing the students with dynamic macroeconomic and growth models * Building an underlying aggregate economy-wide knowledge that enables students to analyze theoretical and applied macroeconomic models and policy issues. |
| **Prerequisites** | Undergraduate macroeconomics. |
| **Course contents** | Chapter 1. Economic Growth – Solow Growth Model **(12 Lecture hours)**  1.1 The Accumulation of Capital  1.2.The Golden Rule Level of Capital  1.3. Population Growth  1.4 Technological Progress  1.5. *Beyond the Solow Model:* Endogenous Growth Theory  1.5.1.The Basic Model  1.5.2.A Two-Sector Model  1.6. Policies to Promote Growth  Chapter 2. Consumption Function **(6 Lecture hours)**  2.1 Consumption Function  2.2. Intertemporal Choice  2.3. Life-Cycle Hypothesis  2.4. Permanent-Income Hypothesis  Chapter 3. Investment **(5 Lecture hours)**  3.1. Introduction  3.2. Business fixed investment  3.3.Residential Investment  3.4. Inventory investment  Chapter 4. The Government and Foreign Trade Sectors **(4 Lecture hours)**  4.1. The Government sector  4.2.The Foreign Trade Sector  Chapter 5. The Demand and Supply for Money **(9 Lecture hours)**  5.1. The Demand for Money  5.1.1**.** The Classical Quantity Theory  5.1.2. Keynes’s Theory of Demand for Money  5.1.3. Later Developments of the Keynesian theory of the demand for money  5.1.4. Modern Quantity theory of the Demand for money  5.2.The supply of Money  5.2.1.The High powered money multiplier Approach  5.2.2.Flow of Funds Analysis and the Credit Counterpart Approach  Chapter 6. The Labor Market and Unemployment **(6 Lecture hours)**  6.1.The classical Labor Market  6.2. The Keynesian – neoclassical debate  6.3. The Keynesian Labor Market  Chapter 7. Inflation **(6 Lecture hours)**  7.1. Excess-Demand Inflation  **7**.2. Inflation and Phillips Curves  7.3. Expectation-Augmented Phillips Curve  7.4. Adaptive and rational Expectation  7.5. Cost – Push Inflation |
| **Reading List** | *Major reading/text*  Romer, D. (2001). *Advanced Macroeconomics.* Boston: McGraw-Hill  Cobham D., 1998. Macroeconomic Analysis; An Intermediate text, 2nd Edition.  Mankiw N. G., 1997. Macroeconomics, 3ed Edition? (5th Ed. Soft copy).  *Other references*  Mankiw, N. G. (2007). *Macroeconomics.* (6th Ed.). New York  Blanchard, O. (2006). *Macroeconomics* (4th Ed.) Upper Saddle River, NJ, Prentice Hall.  Sørensen, P.B., Whitta Jacobsen, H.J., (2005). *Introducing Advanced Macroeconomics: Growth and Business Cycles*. McGraw Hill Education  Maurice, O., and Kenneth S. Rogoff (1996). *Foundations of International Macroeconomics*.The MIT Press  Gärtner, M. (2006). *Macroeconomics*. (2nd Ed.). Harlow, England, Prentice Hall.  De Long, J. B. & Olney, M. (2006). *Macroeconomics* **(**2nd Ed.) Boston, McGraw-Hill Irwin. |
| **Assessment method** | **Continues assessment** 60% (Individual and group Assignments , task based discussions, term paper related to macroeconomic issues)  **Final exam** 40% |

**Course 3. Environmental and Natural Resource Economics**

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| **Course Title** | **Environmental and Resource Economics** |
| **Course Code** | AGEC 582 |
| **Credit Hours** | 3 |
| **Classification** | Elective |
| **Semester** | Year 1, Semester II |
| **Description** | The course will begin by exploring the various approaches to The relationships between the environment and the economy. Typical environmental problems facing developing countries. Sustainable development. Economic analysis of environmental problems. The management of non-renewable and renewable resources. The economics of resource scarcity. Policy approaches accounting for the environment. Elements of a responsible environmental policy. |
| **Objective** | The main target of this course is to provide students with solid understanding of both the theoretical perspectives and concepts that have underpinned the field of **Environmental and Resource Economics**; and to enable students to understand the link between agriculture and **Environmental and Resource Economics**.  Furthermore, the course will:   * Introduce the intellectual origins of Policy approaches accounting for the environment * Provide a broad understanding of both the theoretical perspectives and concepts that have underpinned the field of **Environmental and Resource Economics** * Familiarize the students with theories central to **Environmental and Resource Economics** |
| **Prerequisites** |  |
| **Course content** | **Chapter 1: Introduction (3 Lecture hours)**   * 1. Definitions and Concepts of basic terms   2. The emergence of resource and environmental economics   3. Fundamental issues in economic approach to resources   **Chapter 2: Concept of sustainability (9 Lecture hours)**   * 1. The origin of the sustainability problem   2. Economy environment interdependence   3. Ethics economics and the environment   4. Economists on sustainability   5. Ecologists on sustainability   6. The institutional conception   7. Sustainable development   8. Sustainability and policy   **Chapter 3: Welfare Economics and the Environment (9 Lecture hours)**   * 1. Efficiency and optimality      1. Economic efficiency      2. An efficient allocation is not unique      3. The social welfare function and optimality      4. Allocation in a market economy      5. Efficiency given ideal conditions   2. Partial equilibrium analysis of market efficiency   3. Market failure, public policy and the government      1. The existence of market for environmental services      2. Public goods      3. Externalities      4. Imperfect information      5. Government failure   **Chapter four: Environmental valuation (6 Lecture hours)**   * 1. The need to value the environmental services   2. Types of economics values   3. Valuation techniques   4. Benefits of valuating the environment   **Chapter Five: Economics of pollution control (6 Lecture hours)**  5.1. Pollution control targets  5.2. Pollution control instruments  5.3. Pollution policy with imperfect information  **Chapter six**: **The efficient and optimal use of natural resources (6 Lecture hours)**  6.1. A simple optimal resource  6.1.1. The economy and its production function  6.1.2. Is the natural resource essential?  6.1.3. What is the elasticity of substitution b/n R&K?  6.1.4. Resource substitutability and the problem of increasing resource scarcity  6.2. Extending the model to incorporate extraction costs and renewable resources  **Chapter seven**: **The theory of resource extraction: non-renewable resources (6 Lecture hours)**  7.1. Non- renewable resource extraction in perfectly competitive markets  7.2. non – renewable resource extraction in monopolistic market  **Chapter eight : Renewable resources (3 Lecture hours)**  8.1. An open access fishery  8.2. The dynamics of renewable resource harvesting  8.3. Private property fishery  8.4. Forest resources |
| **Reading List** | **Perman, Roger, Yue Ma, James McGilvray and Michael Common: Natural Resource & Environmental Economics. 3rd Edition. Person Education Ltd.: Harow, Essex, 2003.**  Common, Michael and Sigrid Stagl: Ecological Economics. An Introduction. Cambridge: Cambridge University Press, 2003.  Neher, P. H.: Natural Resources Economics: Conservation and Exploitation. Cambridge: Cambridge University Press, 1990  Pearce, D., Pearce, C. and Palmer, C.: Valuing the Environment in the Developing Countries: Case Studies. Cheltenham: Edward Elgar, 2002.  Tietenburg, T.: Environmental and Natural Resource Economics. Boston: Pearson-Addison Wesley, 2006.  Roger Perman, Yue Ma, James Mcgilvery and Michael Common **(2003). Natural Resource and Environmental Economics.** 3rd  ed., Addison-Wesley  **Tom Tietenberg, (2003). Environmental and Natural Resource Economics**. 6th ed., Addison Wesley  Internet can also be used; any economics books can also be used as supplementary materials |
| **Assessment** | **Continuous assessment:** 60 % (active participation in discussion of case based tasks, term papers, presentation based on group work)  Final exam: 40% |

**Course 4. Agricultural Project Planning and Analysis**

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| **Course Title** | **Agricultural Project Planning and Analysis** |
| **Course Code** | AGEC 522 |
| **Credit Hours** | 3 |
| **Classification** | Core |
| **Semester** | Year 1, Semester II |
| **Description** | This course provides an introduction to the context, theory, process, and practice of local economic project planning.  Topics covered include: differing theoretical and conceptual explanations of the processes of economic development; aspects of project analysis, project assessment criteria, quantitative planning models, programming approach to planning, SAM and CGE approaches to planning; international, national, and regional factors affecting local economic development; federal, state, and local roles; contrasting economic development approaches and methods; equity, participation, conflict, and cooperation in economic development; and economic development practice and policy. |
| **Objective** | The course aims at assessing the benefits and the costs of undertaking a project leading to the selection of the most promising project. It helps explore the optimum allocation of scarce resources so that the benefits to the economy and the society are maximized.  The purpose of the course is to outline and present the general framework and the basic methodology for project planning and analysis across different sectors. The basic theoretical tool of project analysis will be discussed and attempt will be made to explain how to apply quantitative analysis of costs and benefits to evaluate these projects from multiple perspectives, i.e., from the point of view of the private sector, the public sector, and the country as a whole.  The course is intended for students who want to know how to formulate and analyze development projects and very much focuses on the theories underlying project analysis. |
| **Prerequisites** | Microeconomics |
| **Corse content** | 1. INTRODUCTION (4 Lecture hours)  1.2. Project Definition  1.3. Approaches to Project Planning  1.4. Traditional and New Approach to Project Appraisal  1.6. The linkage between projects and programs  1.7. Project Analysis  1.8. The Project Format: Advantages and Limitations  2. THE PROJECT CYCLE (6 Lecture hours)  2.1. Identification  2.2. Project Preparation and Analysis Phase  2.3. Appraisal  2.4. Implementation  2.5 Follow-up, Monitoring and Evaluation  3. ASPECTS OF PROJECT PREPARATION AND ANALYSIS (5 Lecture hours)  3.1. Technical Aspect  3.2. Commercial (Market) /Demand and Supply/ Aspect  3.3. Institutional-Organizational, Managerial and Manpower Aspect  3.4. Financial Aspect  3.5. Economic Aspect  3.6. Social Aspect  3.7. Environmental Aspect  4. IDENTIFYING PROJECT COSTS AND BENEFITS (6 Lecture hours)  4.1. Objectives, Costs and Benefits  4.2. Costs & Benefits in Financial and Economic Analysis  4.3. Categories of Costs and Benefits  4.4. Tangible Benefits of a Project  4.5. Externalities  4.6. With and Without Project Comparison  4.7. Separable Components  5. FINANCIAL ANALYSIS (9 Lecture hours)  5.1. Objectives of Financial Analysis  5.2. Pricing Project Costs and Benefits  5.3. Financial Ratios  5.3.1. Efficiency ratios  5.3.2. Income ratios  5.3.3. Creditworthiness ratios  6. ECONOMIC AND SOCIAL ANALYSIS (12 Lecture hours)  6.1. Purpose of Economic Analysis  6.2. Numéraire  6.3. Valuation and shadow prices  6.4. Economic and Social Cost Benefit Analyses  6.5. Two Approaches of Measuring Economic Costs & Benefits of a Project  6.6. Economic Export and Import Parity Price  6.7. Valuation of Non-traded Goods  6.8. Valuing Output Using Market Prices  6.9. Valuing Non-traded Inputs  6.10. Tradable but Non-traded Items  6.11. Valuing Externalities  6.12. Shadow Prices for Factors of Production  6.13. Social Appraisal  7. MEASURES OF PROJECT WORTH (6 Lecture hours)  7.1. Undiscounted Measures of Project Worth  7.2. Discounted Measure of Project Worth  7.3. Comparisons among Discounted Measures  7.4. Capital Rationing |
| **Reading List** | Bellas, A. and Zerbe, R. O., 2000. *A primer for Cost benefit Analysis.* Harper Collins*, NY.*  Belli, P., 1996. *Hand Book on Economic Analysis of Investment Projects*. World Bank, Operations Policy Department.  Chandra, P., 1980. *Projects****:*** *Preparation, Appraisal and Impetration****.*** Tata McGraw-Hill publishing company Limited, New Dahi.  Federal Democratic Republic of Ethiopia (FDRE), 2006. *Guidelines for the preparation of public sector projects.* Ministry of Finance and Economic Development (MoFED) printing service, Addis Ababa, Ethiopia, pp.259.  FDRE, MoFED, 2008. *National Economic Parameters and Conversion Factors for Ethiopia*. 3rd edition, Bole Printing Enterprise, Addis Ababa, Ethiopia, pp.212.  Gittinger, J.P., 1982. *Economic Analysis of Agricultural Projects*, The Johns Hopkins University Press, 2nd edition, Baltimore and London. pp504.  Irvin, G., 1978. *Modern Cost-Benefit Methods.* *An Introduction to Financial, Economic and Social Appraisal of Development Projects.* The MacMillan Press Ltd. London and Bastngstoke. pp257.  Kanshahu A.I., 1996. *Planning and Implementing Sustainable Projects in Developing Countries: theory, practice and economics*. AgBe Publishing, Holland.  Little, I.M.D. and Mirrless, J.A., 1974. *Project Appraisal and Planning for Developing countries.* Basic Books, Inc., Publishers, New York. pp388.  Square, L. and van der Tak, H.G., 1975. *Economic Analysis of Projects.* A World Bank Research Publication, The Johns Hopkins University Press, Baltimore and Maryland, USA. pp153.  Thirlwall, A. P., 2003. *Economic Growth and Development: With Special Reference to Developing Economies. 7th ed., Macmillan.*  United Nations Industrial Development Organization (UNIDO), 1972. Guidelines for Project Evaluation. Prepared by Partha Dasgupta and others. New York, UN.  Ward, W.A. and Deren B.J., 1991.*The Economics of Project Analysis. A Practitioner’s Guide.* Economic Development Institute of the World Bank Technical Materials, Washington D.C., U.S.A. pp319. |
| **Assessment method:** | **Continuous assessment:** 60 % (active participation in discussion of case based tasks, assignments related to feasibility analysis, presentation based on group work)  Final exam: 40% |

**Course 5. Research Methods in Agricultural Economics**

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| **Course Title** | **Research Methods in Socio-Economics** |
| **Course Code** | AGEC 556 |
| **Credit Hours** | 2 |
| **Classification** | Core |
| **Semester** | Year 1, Semester II |
| **Description** | The course provides students with some advanced research techniques in economics. It emphasizes the application of econometrics, mathematics and statistics to economic research.  The course will cover areas of setting hypothesis and constructing economic model; data collection method, Estimation and the application of economic models. |
| **Objective** | The main aim of the course is to enable students:   * To be familiar with the research techniques in economics * To be able to frame hypothesis and construct an economic model * To acquire skills required in collecting, summarising and analyzing data * To be familiar with data handling and some computer programming for economic research |
| **Prerequisites** | Advanced Econometrics: Theory and Application. |
| **Course contents** | 1. INTRODUCTION TO RESEARCH METHODOLOGY **(5 Lecture hours)**  1.1. Meaning and Scope of Research  1.2. The Research Process  1.3. Defining and Formulating a Research Problem  1.4. Research Questions and Objectives  1.5. Layout of a Scientific Research Proposal  2. REVIEW OF LITERATURE **(4 Lecture hours)**  2.1. The Importance of Literature Review  2.2. Purpose of a Literature Review  2.3. Types of Literature Review  2.4. Sources of Literature  3. DATA COLLECTION, MEASUREMENT OF VARIABLES AND HYPOTHESIS **(6 Lecture hours)**  3.1. Methods of Collecting Primary Data  3.2. Collection of Secondary Data  3.3. Selection of Appropriate Method for Data Collection  3.4. Definition and Measurement of Variables  3.5. Levels of Measurement  3.6. Research Hypothesis  4. SAMPLE SURVEY AND SAMPLING DESIGNS **(7 Lecture hours)**  4.1. Sample Survey  4.2. Probability and Non-probability Sampling  4.3. Simple Random Sampling  4.4. Complex Random Sampling Designs  5. METHODS OF DESCRIBING DATA **(4 Lecture hours)**  5.1. Basics  5.2. Descriptive Methods  5.3. Graphic Methods  6. REPORTING RESEARCH FINDINGS **(6 Lecture hours)**  6.1. Meaning and the Need for Interpretation  6.2. Technique of Interpretation  6.3. Precautions in Interpretation  6.4. Issues in Interpretation  6.5. Writing Research Reports  6.6. Oral Presentations |
| **Reading List** | ***Major readings/texts***  Goode, William J., and Paul K. Hatt (1981). *Methods in Social Research.* International Students Edition. Auckland: McGraw-Hill Book Company.  Verschuren, Piet, and Hans Doorewaard (1999). *Designing a Research Project*. Utrecht: LEMMA  Angus Deaton (1998). *The Analysis of Household Surveys: A Micro-econometric Approach to Development Policy*. Baltimore: The Johns Hopkins University Press. (Chapters 1 and 2).  Brewerton, Paul and Lynne Millward (2001 ). *Organizational Research Methods A Guide for Students and Researchers.* London: Sage Publishers.  Malmfors, Birgitta, Phil Garnsworthy and Michael Grossman (2004). *Writing and Presenting Scientific Paper*. (2nd Ed.). Nottingham University Press  ***Additional readings***  Alreck, P.L., Settle R. B. (2004). *The Survey Research Handbook.* Irwin Hill. Third Edition.  Sophie Laws (2003).*Research for Rural Development: A Practical Guide.* Sage Publications.  Babbies, E. (1989). *The Practice of Social Research*. New York: Wadsworth Publishing Company.  Casley, D.J., Lury, D. A., (1993). *Data Collection in Developing Countries.* Oxford: Oxford University Press.  Dennis J. Casley, Krishma Kumar (1988). *Collection, Analysis and Use of Monitoring and Evaluation Data*. Baltimore: John Hopkins University Press.  Dey, I. (1993). *Qualitative Data Analysis. A User Friendly Guide for Social Scientists*.  Ethridge, D. (1995**).** *Research Methodology in Applied Economics: Organizing, Planning and Conducting Economic Research.* Ames: Iowa State University Press.  Raune, Janet. (2005). *Essentials of Research Methods: A Guide to Social Science Research.* Oxford: Blackwell Publishing. |
| **Assessment method:** | **Continuous assessment:** 60 % (active participation in discussion of case based tasks, assignments, proposal writing and presentation)  Final exam: 40% |

**Course 6. Seminar in Agricultural Economics**

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| **Course Title** | **Seminar in Agricultural Economics** | | | | |
| **Course Code** | **AGEC 552** | | | | |
| **Credit Hours** | 1 | | | | |
| **Classification** | Core | | | | |
| **Semester** | Year 2, Semester I-II | | | | |
| **Description** | This part of enrolment is fully allocated to a seminar research project. A candidate is required to submit a report with 2,000-3,000 words long, not more than 20 pages. The completed seminar has to be submitted within the announced deadline date.  After submitting the report, students have to present their work in the presence of at least two academic staff. | | | | |
| **Course content** | **Topic** | **Chapter objectives** | | **Student’s activity** | **Assessment** |
| 1. Introduction    1. Concepts of Seminar  * Why we study the course? * What is the procedure to perform the course? * Outline of the current topics (1-2) | * Explain the concept and types of seminars. * Describe the objective of the course | | *In class*   * Actively listing * Taking notes * Asking questions and responding for questions * Reflecting on the overall lesson   *Outside class*  Referring in library on what they learnt in the class | Asking questions  Taking suggestions  Observation of the participation level of students during group work |
| 1. Selection of current topics (2-3) | Select a current topic to write a seminar | | * Students will read different literature that would help them to choose current topics | The level of the current that raises the current issue and its relevance |
| 1. Submitting the title of current topic to the respective advisor(s) (3) | * Communicate with the advisor on the current topic | | * Making Discussion with the advisor to take comment | Self and peer evaluation |
| 1. Preparation of the first draft of seminar (4-12) | Prepare seminar on the current topic(s) | | * Reading different literature * Making group discussion | Self and peer evaluation |
| 1. Submitting the first seminar draft to the respective adviser(s)(12-15) | Understand how to make a sound discussion to write a sound a seminar. | | * Making Discussion with the advisor to take comment | The status of the first draft and student’s capability to defense and incorporate the comments |
| 1. Preparation of the final draft of Seminar(16) | Competent/summarize and/or comprehend in how to prepare a seminar. | | * Incorporating the comments given by the advisor before submitting the report | seminar evaluation |
| 1. Submitting and Presentation the final seminar report (16) | * prepare power point   present and defend a seminar | | * Presenting the total work | Seminar presentation evaluation |
| **Reading List** | *Gustavii, B. (2003).* ***How to write and illustrate a scientific paper****. Cambridge University, UK: The Cambridge Press.*  Various | | | | |
| Summary of Assessment | Type of assessment | | Weight (percent) per assessment | | |
| Project Report evaluation by advisor | | 50 | | |
| Project Report presentation and defense | | 50 | | |
| Total | | 100 | | |

1. **DEPARTMENT: ANIMAL SCIENCE**

**Program: Animal Production**

**Course 1. Advanced Animal Breeding**

**Course code: ANPR 530**

**Credit hour: 3 (3+0)**

**Course Description**

Constraints in livestock breeding in tropics in relation to -Environment, Production Systems and Socio-economic condition. Reproduction, fertility, sterility and their genetic basis. Growth, milk, eggs and meet production and their genetic basis. Field and modern recording systems for growth, egg, milk, meat production and their application. Native breeds performance, scope and methods of improvement. Introduction of improved exotic breeds- choice of breed, selection criteria, interpretation of performance records of different countries. Precautions and procedure of importation. Breeding plans for tropics- production environment, objective, traits, structure, organisation, peoples participation and constraints. Village breeding schemes. Group breeding program. Nucleus herd breeding. New breed formation. Hereditary defects. Breeding for disease resistance, heat tolerance and adaptation.

**Course 2. Meat Production**

**Course code: ANPR 522**

**Credit hour: 3 (2+1)**

**Course Description**

Diversity of meat sources and consumption; description and evaluation of various meat production systems. Constraints for improvement of meat production in tropics. Improvement through range, feedlot, nutrition, management and breeding of cattle, camel, sheep and goat. Physical evaluation of slaughter animals. Carcass and meat characteristics and quality evaluation. Meat as a product and factors affecting meat. Live animals, meat and meat product trade and marketing.

**Course 3. Dairy Production**

**Course code: ANPR 524**

**Credit hour: 3 (2+1)**

**Course Description:**

International situation. Role of cattle, camel, goat and sheep in milk production. Milk production systems in the tropics. Recent practices of optimization immune-competency of young stock, growth rate and puberty. Pre and post parturition practices to maximize reproduction and milk production. Principles of replacement and culling. Housing, equipment and management in warm climates. Modern milking management- milking methods, milk quality, handling and marketing. Maintenance of herd health and productivity. Small- and large-scale commercial dairying ­project proposal, establishment and expansion. Administration- technical and financial records. Efficiency utilization of land, labor, feed and fodder. Technical and financial evaluation of dairy enterprise.

**Course 4. Poultry Production**

**Course code: ANPR 526**

**Credit hour: 3 (2+1)**

**Course Description**

Current issues and prospects of commercial layer and broiler poultry farms in tropics. Physiology of egg formation and oviposition. Hatching eggs and hatchability. Hatchery equipment, operation, incubation and hatchery management. Commercial scale management of chicks, replacement pullets, layers and broilers. Environment, housing, equipment and waste management. Components of poultry feed, nutrient requirement and monitoring of feed. Health management - control of poultry diseases and parasites. Poultry breeding, record keeping, production of parental stock and hybrids, Chick sexing and grading. Egg as a product- quality, grading processing and marketing. Broiler birds - marketing live and processed birds. Economics of egg and broiler meat production.

**References**

1. POULTRY PRODUCTION IN HOT CLIMATES, Second Edition

Edited by Nuhad J. Daghir-Faculty of Agricultural and Food Sciences,

American University of Beirut, Lebanon. CABI Publishing, 2008

1. Poultry Genetics, Breeding and Biotechnology

*Edited by* W.M. Muir *Department of Animal Sciences, Purdue University,West Lafayette, Indiana, USA and* S.E. Aggrey-*Department of Poultry Science, University of Georgia, Athens, Georgia,USA.* CABI Publishing, 2003

1. COMMERCIAL POULTRY NUTRITION, THIRD EDITION

*By* STEVEN LEESON, Ph.D. *Professor of Animal Nutrition and* JOHN D. SUMMERS, Ph.D. *Professor Emeritus.* Department of Animal and Poultry ScienceUniversity of Guelph Guelph, Ontario, Canada. Digitally reprinted in 2008

1. NUTRITION AND FEEDING OF ORGANIC POULTRY

Robert Blair-*Faculty of Land and Food Systems. The University of British Columbia Vancouver, British Columbia, Canada.* CAB International 2008

1. Commercial Chicken Meat and Egg Production

Fifth Edition. Edited by DONALD D. BELL (emeritus)-*Poultry Specialist*

*University* of *California Riverside, California.* OriginaIly published by Kluwer Academic Publishers in 2002

1. Poultry Products Processing

Shai Barbut, PhD-Department of Animal and Poultry Science. University of Guelph, 2002

1. *Sturkie’s* Avian Physiology, 5th Edition-1998
2. Anatomy and Physiology of Domestic Animals, Second Edition

R. Michael Akers and D. Michael Denbow. published 2013 © 2013 by John Wiley & Sons, Inc.

1. Diseases of Poultry, 13th Edition

*Editor in Chief:* David E. Swayne

*Associate Editors:* John R. Glisson, Larry R. McDougald, Lisa K. Nolan, David L. Suarez, and Venugopal Nair. published 2013 © 2013 by John Wiley & Sons, Inc.

1. *HANDBOOK ON* POULTRY DISEASES

Published by: American Soybean Association

Simon M. Shane-FRCVS, PhD, MBL, ACPV

Adjunct Professor

North Carolina State University

Professor Emeritus, School of Veterinary Medicine-Louisiana State University

USA Copyright©2005 by American Soybean Association

1. Avian Influenza

Volume Editors-H.-D. Klenk Marburg, M.N. Matrosovich Marburg, J. Stech Greifswald

Copyright 2008 by S. Karger AG, P.O. Box, CH–4009 Basel (Switzerland)

**Course 5. Course Processing of Animal Products**

**Course code: ANPR 520**

**Credit hour: 2(2+0)**

**Course Description**

Poultry products technology; dairy technology; meat processing, processing hides and skins; fish technology, storage and processing; methods of preservation, canning, drying and chemical application; quality parameters of raw and processed products.

**Course 6. Current Topics in Animal Production**

**Course code: ANPR 542**

**Credit hour: 1 (1+0)**

**Course Description**

Supervised study on advanced topics of current importance in Animal Production or related topics that are not discussed in the program and which must be approved by the DGC. Students present seminars based on library research so that students will be exposed to the methodology of the preparation and presentation of scientific papers.

**Mode of Assessment**

Evaluation of learning outcomes would be made following different method of assessment depending on the nature of the course, which may include term papers; chapters/book review; lab activity; field work; seminar presentations, mid semester and final written examination. Graduate student progress is assessed regularly and formally through the following methods:

Coursework

* Assignments, seminars, quizzes/tests, written exam (mid semester examination, final semester examination), term papers.

Practical courses

* Practical and laboratory skills, Laboratory reports/field reports/excursions; written examination of laboratory practices, Thesis, seminars and reports presentation, quality of paper presented, way of presentation, defending material presented

1. **DEPARTMENT: PLANT SCIENCES**

**Program 1:** Plant Breeding

**Course 1:** Advanced Plant Breeding

**Course Code:** PLPB 520

**Credit hour:**  3+0

**Course Description**

**Course Content**

**Course title: Advanced Plant Breeding**

**Course Code: PLPB 520**

**Credit Hours: 2 +1**

**Course Content**

Introduction to plant breeding-history, objectives, achievements in the pre-Mendelian era, post-Mendelian era, plant breeding - potential and opportunities. Introduction, domestication and acclimatization. Patterns of evolution in crop plants, Centre of origin, gene pool concept - primary, secondary and tertiary gene pool, and gene introgression. Plant genetic resources: Importance of plant genetic resources and diversity in plant breeding, collection, evaluation and conservation of germplasm. Modes of reproduction in plants - asexual & sexual reproduction, self and-cross-pollination mechanisms, male-sterility and self incompatibility. Genetic bases of plant breeding: ,- genetic & phenotypic assortative and disassortative matings and their genetic consequences; Qualitative & quantitative traits and their genetic behavior in segregating populations; Components of variation, single gene and multiple gene concepts, epistasis and gene interactions; Heritability and genetic advance; Selection - responses to selection, selection differential, intensity and realized advance; Heterosis - concept and theories, inbreeding depression. Methods of breeding self-pollinated, cross-pollinated and asexually propagated crops; Land races, pure line selection and mass selection; Pedigree selection, bulk selection method and its modification; Hybrid breeding, populations and population improvement, intra and inter population improvement; Clonal selection. Mutation breeding, use of polyploidy and distant hybridization in plant breeding.

CHAPTER 1: INTRODUCTION

**Content**: History and role of plant breeding, Goals of plant breeding, [Plant breeding past (pre-Mendelian),](#_Toc35585707) [Plant breeding present (post-Mendelian),](#_Toc35585708) [Achievements of modern plant breeders and](#_Toc35585709) [Future of plant breeding in society](#_Toc35585710)

**CHAPTER 2:**  [Plant reproductive systems](#_Toc35585711)

**Content**: Purpose and expected outcomes, Importance of mode of reproduction to plant breeding, Types of reproduction , Sexual reproduction, General reproductive morphology, Pollination and fertilization , [Self-pollination,](#_Toc35585719) [Genetic and breeding implications of self-pollination,](#_Toc35585720) Cross-pollinating species, Asexual reproduction, Apomixis, Self-incompatibility, plant breeding implications of self-incompatibility, determination of the mode of pollination, determination of the amount of cross polllnation, relevance of mode of reproduction, Genetic Constitution

CHAPTER 3: BIOMETRICAL TECHNIQUES IN PLANT BREEDING

CHAPTER 4: BREEDING SELF-POLLINATED CROPS

Method of Hybridization, What is a Cultivar, Genetic Significance of Pollination Method, Self-Pollinated Species, Breeding Methods in Self-Pollinated Crops: Selection, MASS SELECTION, PURE-LINE SELECTION, Selection Procedures Following Hybridization, Pedigree-Selection, Bulk-Population, Single-Seed-Descent, Doubled-Haploid, Backcross Breeding

**CHAPTER 5: Pedigree Selection**

Merits and demerits of pedigree method

**CHAPTER 6: POPULATION IMPROVEMENT**

Outcrossing Species, Methods Of Population Improvement, Mass Selection, Recurrent Selection, Synthetic Varieties , Effectiveness Of Progeny Selection Schemes

[**CHAPTER 7 HYBRID AND SYNTHETIC VARIETIES**](#_Toc35585774)

Hybrid Varieties, Development Of Inbreds, Evaluation Of Inbreds, Production Of Hybrid Seed

**CHAPTER 8. BREEDING CROSS-POLLINATED AND CLONALLY PROPAGATED CROPS**

Breeding Seed-Propagated Cross-Pollinated Crops, The Recurrent-Selection Principle, Mass Selection, Half-Sib Selection with Progeny Test, Half-Sib Selection with Testcross, [Full-Sib Selection,](#_Toc35585787)  Selection from S1 Progeny Test , Reciprocal Recurrent Selection Synthetic Cultivar, Improving The Characteristics Of Inbred Lines, Pedigree Selection , Backcross Method, Convergent Improvement , Gamete Selection, Somatic Hybridization, Genetic Engineering

**Suggested Reading**

1. Allard, R.W. 1960. Principles of Plant Breeding. John Wiley & Sons,

New York.

2. NewBury, H.J. 2003. Plant Molecular Breeding. Blackwell publishing Ltd. UK.

3. Singh, B.D. 2010. Plant Breeding - Principles and Methods. Kalyani Publishers, New Delhi.

**Course 2: Advanced Quantitative Genetics**

**Course Code: PLPB 522**

**Credit Hours: 2 +1**

**Course Content**

Historical background on quantitative inheritance. Qualitative and quantitative means and variance, fixed and random effect models, Mendelian principles, - Gene and genotypic frequency. Single gene and multiple gene models - estimation of genetic parameters and scaling tests. Linkage, Epistasis, components of epistasis and their estimation, covariance between relatives. Inbreeding and heterosis - simple model extension to polygenic situations. Mating designs - diallel, North Carolina, line x tester designs and triple test cross. Concept of combining ability – specific and general combining ability, and relevance to gene action. Heritability, selection differential and response to selection, correlated response, genotype x environment interaction, and stability analysis. Selection indices, path coefficient, genetic divergence, principal component and discriminate function analysis. QTL mapping- biparental and natural population based. Basic models for QTLs analysis.

**Assessment**

Students will be evaluated using written examinations, journal review and presentation, term papers, assignments, laboratory and field reports. The performances of students after being assessed on the above evaluation methods will be converted into letter grades.

**Suggested Reading**

1. Falconer, D.S. and Mackay, J. 1996. *Introduction to Quantitative Genetics, Longman Group* Ltd., London.

2. Mather, K. and Jinks, J.L. 1971. *Biometrical Genetics*. Chapman and Hall, London. 13

3. Singh, R.K. and Chaudhary, B.D. 1999. Biometrical methods in quantitative genetic analysis, Kaliyani publisher, New Delhi.

**Course 3: Breeding for Biotic and Abiotic Stresses**

**Course Code: PLPB 524**

**Credit Hours: 2 + 0**

**Course Content**

Nomenclature and classification of stresses. Nature and importance of viral, bacterial, fungal and other diseases. Insect pests. Genetic, physiological and molecular mechanisms of disease and insect pest resistance. Host-parasite interaction - variation in pathogen and host, factors affecting host reactions, Gene-for-gene concept, implications and significance in plant breeding. Identification of resistance genes. Breeding for tolerance to abiotic stresses: moisture, salinity, alkalinity, water logging, temperature etc. Morphological, physiological and genetic basis of abiotic stresses. Creation of artificial epiphytotics. Screening techniques for breeding materials. Sources of resistance, shuttle breeding, stability of resistance, gene deployment over time and space - Mechanism of durable resistance, breeding methods for disease resistance. Concepts of varietal blends, mixtures and multi-lines for stress resistance. Use of molecular markers in mapping genes for stress resistance. Molecular markers assisted selection. Introgression of genes from the wild relatives of crop plants. Pyramiding of resistance genes. Transgenics in management of biotic and abiotic stresses. Use of Bt toxins, protease inhibitors, lectins, chitinases and glucanases for insect pest management.

**Assessment**

Students will be evaluated using written examinations, journal review and presentation, term papers, assignments, laboratory and field reports. The performances of students after being assessed on the above evaluation methods will be converted into letter grades.

**Suggested Readings**

1. Blum, A. 1988. Plant Breeding for Stress Environments. CRC Press, Florida.

2. Luttge U., Beck E. & Bartels, D. 2011. Plant Desiccation Tolerance. Springer. Germany.

**Course 4: Biotechnology for Crop Improvement**

**Course Code: PLPB 526**

**Credit Hours: 2 + 1**

**Course Content**

**Course title: Biotechnology for Crop Improvement**

**Course Code: PLPB 526**

**Credit Hours: 2 + 1**

**Course Content**

Basic Techniques and Principles; overview of facilities and techniques;

Tissue culture media-composition and preparation; preparation of specimen for microscopy; stages of micro propagation; callus and organ culture; cell culture; protoplast culture.Applications of plant tissue culture techniques to plant breeding; somatic hybridization, somaclonal variation, transgenics, embryo culture, haploid productions through anther culture. Historical development and types of molecular marker, application of molecular markers for crop improvement, genetic engineering and its application potential hazards and importance in plant breeding.

**Practical**: Demonstration of DNA extraction, marker data generation and tissue and cell culturing will take place in the lab. In addition to this, field trip will be done to Holleta research center or other place to visit tissue culture laboratory.

**Chapter One: Introduction**

**Chapter Two: Tissue Culture the Basic Fundamental**

**Chapter 2.1: Nutrient Media Constituents and Preparation, Explants and Culture Growth**

**Chapter 2.2: Culture environment**

**Chapter 2.3:Types of Culture**

**Chapter 3: Molecular Procedures and Techniques**

**Chapter 4: Plant Genetic Engineering**

**Chapter 4.1: Gene transfer strategies**

**Chapter 4.2: Selection and Regeneration of transgenic plants**

**Chapter 4.3: Genetic Engineering for Important Crop Characteristics**

**Chapter 4.4: Gene Silencing and its Applications in Crop Improvement and Functional Genomics**

**Chapter 4.5: Food and Environmental Safety Issues Associated with the Genetic Modification in Plants**

**Chapter 5: Marker Assisted Selection**

**Practical**: Demonstration of DNA extraction, marker data generation and tissue and cell culturing will take place in the lab. In addition to this, field trip will be done to Holleta research center or other place to visit tissue culture laboratory.

**Assessment**

Students will be evaluated using written examinations, journal review and presentation, term papers, assignments, laboratory and field reports. The performances of students after being assessed on the above evaluation methods will be converted into letter grades.

**Suggested Readings**

**1.** Allison, L.A. 2007. Fundamental molecular biology, Blackwell publishing. USA.

**2.** Singh, B.D. 2002. Biotechnology, Kaliyani publisher, New Delhi.

**3.** Srivastava, P.S., Narula, A and Srivastava, S. 2004. Plant biotechnology and molecular markers, Kluwer Acadamic pub

**Course 5: Seed Science and Technology**

**Course Code: PLST 550**

**Credit Hours: 2 + 0**

**Course Content**

Principle of seed science, Formation of the seed, seed filling and seed maturity. Environmental conditions necessary for the production of high quality seed. Optimum storage conditions to keep seed quality and packing. Seed dormancy and seed germination. Tetrazolium test, seed vigor test, Seed quality control: field inspection, germination test, purity and health analysis. Recalcitrant and orthodox seed and its concept. Seed deterioration, Seed certification. Establishing a successful seed production and marketing mechanisms. Production of Breeder, basic, and certified seeds. Practical: laboratory exercise.

**Assessment**

Students will be evaluated using written examinations, journal review and presentation, term papers, assignments, laboratory and field reports. The performances of students after being assessed on the above evaluation methods will be converted into letter grades.

**Suggested Readings**

1. Agrawal R.L. 2005. Seed technology, 2nd ed. Oxford and IBH publisher, New Delhi.

2. Anon, 1997. Seed Technology in Tropics. ISTA, Zurich.

3. Black, M., Bradford, K.J. and Vasquez-Ramos, J. 1999. Seed Biology: Advances and Applications. Proceedings of the sixth International workshop on Seeds, Merida, Mexico.

**Course 6**: **Current Topics in Plant Breeding**

**Course Code**: PLPB 528

**Credit Hours**: 1 + 0

**Course Content**

Contemporary and current scenario in plant breeding techniques will be covered. Current topics and techniques, advanced works will be reviewed. Select and write a paper on one of the current plant breeding topics and present paper which can give new ideas and findings on plant breeding.

**Assessment**

Students will be evaluated using journal review and presentation. The performances of students after being assessed on the above evaluation methods will be converted into letter grades.

**Course 7**: **Graduate Seminar in Plant Breeding**

**Course Code: PLPB536**

**Credit hours**: 1+ 0

Practical experience in the presentation of scientific reports, preparation and delivery of effective visuals including overheads, slides, posters, and computer generated presentations. Students develop a poster session and presentation of seminar on selected topics of current progress and developments in Plant Breeding; tools and techniques of selection in plant breeding.

Students will be evaluated using journal review and presentation on selected topics. The performances of students after being assessed on the above evaluation methods will be converted into letter grades.

**Program 2: Agronomy**

**Course 1: Crop Pests Management**

**Course Code: PLCP541**

**Credit hour:**  3+0

**Course Description**

Major crop pests (weeds, diseases, insect pests) and their economic importance; survey of economically important weeds, diseases and insect pests in Ethiopia; preventive and curative control measures including physical, chemical and biological control measures against important pests; integrated pest management. Special emphasis should be given on weed science and management.

**Assessment**

Students will be evaluated using written examinations, journal review and presentation, term papers, assignments, laboratory and field reports. The performances of students after being assessed on the above evaluation methods will be converted into letter grades.

**Course 2: Crop Physiology**

**Course Code: PLAG 512**

**Credit hour:**  3+0

**Course Description**

Leaf canopy and root system; growth and development; phases of growth; measurement of growth; carbon-dioxide assimilation; growth and maintenance respiration; photo-respiration; dry matter production by interception and conversion of solar radiation; radiation and heat balance; transpiration and dry matter production; source-sink relations; translocation and partitioning of assimilates; phenology of crops; yield components of crops; photo-period effects; growth regulators; crop growth limited by water; crop growth limited by nutrients; crop response to environmental stress (drought, flooding, freezing, heat, salinity, radiation).

**Assessment**

Students will be evaluated using written examinations, term papers, assignments, laboratory and field reports... The performances of students after being assessed on the above evaluation methods will be converted into letter grades.

**Course 3: Crop Ecology and Cropping Systems**

**Course Code: PLAG 502**

**Credit hour:**  2+0

**Course Description**

Soil, climatic and biological factors as they influence the growth, production and geographical distribution of crops; relations of ecological factors and climatic classifications to agro-ecosystems; crop seasons with emphasis to Ethiopian condition; introduction to ecological agriculture. Plant population and planting geometry; crop sequence and association; cropping pattern and cropping systems; multiple cropping; assessment of competition and yield advantages.

**Assessment**

Students will be evaluated using written examinations, journal review and presentation, term papers, assignments, field reports. The performances of students after being assessed on the above evaluation methods will be converted into letter grades.

**References**

Vandermeer JH. 1989. The ecology of intercropping. Cambridge Univ. Press. Cambridge, UK.

Huxley P, 1999. Tropical Agroforestry. Blackwell Science, UK.

Ong CK, Huxley P, 1996. Tree-crop interactions – A physiological approach. CAB International,

Wallingford, UK.

**Course 4: Crop Modeling and Simulation**

**Course Code: PLAG 532**

**Credit hour:**  2+0

**Course Description**

Climatic factors in crop production; micro-climatology such as radiation interception, energy balance and transpiration; Philosophy and terminologies in simulation; basic elements of dynamic simulation; analysis of simple systems; developing simulation models for such systems; models of crop growth; quantitative calculations of the processes involved in crop growth and implementing them into a simple model; crop/weather models; utilization of weather data in crop growth simulation; running and studying existing crop growth models.

**Assessment**

Students will be evaluated using written examinations, journal review and presentation, term papers, assignments, Computer laboratory and field report. The performances of students after being assessed on the above evaluation methods will be converted into letter grades.

**Course 5: Advanced Soil and Plant Nutrition**

**Course Code: SOSC 522**

**Credit hour:**  3+0

**Course Description**

The soil solution and colloid chemistry, soil-water relationships, soil microbiology and microbial reactions, plant physiology and metabolism as applied to rhizosphere chemistry and the processes of soil nutrient recycling, nutrient uptake and availability, and plant growth and productivity. History, technology and use of fertilizers and their reactions, alteration and maintenance of soil fertility by the use of inorganic and organic fertilizers and amendments.

**Assessment**

Students will be evaluated using written examinations, journal review and presentation, term papers, assignments, and field report. The performances of students after being assessed on the above evaluation methods will be converted into letter grades.

**References**

Havlin, J.L., J.D. Beaton, S.L. Tisdale, and W.L. Nelson. 2005. *Soil Fertility and Fertilizers: An Introduction to Nutrient Management.* 8th edition. Prentice Hall. Upper Saddle River, New Jersey. 515 p.

Brady, N.C., and R.R. Weil. 2002. *The Nature and Properties of Soils*. 13th ed. Pearson Education, Upper Saddle River, NJ.

USDA-NRCS (U.S. Department of Agriculture, Natural Resources Conservation Service). 2011. *National Soil Survey Handbook*, title 430-VI. <*http://soils.usda.gov/technical/handbook/*>. Accessed November 11, 2011.

Soil fertility and crop production. **Ed. By K.R. Krishna** (2002) Science Publisher, Inc. UK.

**Course 6: Soil, Water and Plant Analysis**

**Credit hour:**  0+2

**Course Description**

Sampling and sample preparation, and principles and practices of laboratory techniques and methods of chemical analysis of soils, water and biological materials with emphasis on properties of agricultural and environmental significance; analytical data processing, interpretation and reporting.

**Methods of Assessment**

Students will be evaluated using written examinations and laboratory report. The performances of students after being assessed on the above evaluation methods will be converted into letter grades.

**References**

Soil sampling and methods for analysis. **Ed. by M.R. Carter** (1993). Lewis Publishers.

**Motsara, M.R. and R.N.Roy** 2008. Guide to laboratory establishment for plant nutrient analysis. FAO Fertilizer and Plant Nutrition Bulletin No. 19.

**Course 7: Advanced Seed Science and Technology**

**Course Code: SOSC 552**

**Credit hour:**  2+0

**Course Description**

Seed as a basic input for agricultural production; procedures of seed production and testing of different crops; standards for maintaining seed quality; deterioration of varieties; factors determining ideal areas of seed production; pollination and reproduction in relation to seed production and varietal maintenance; release and notification of varieties; concepts in seed physiology and seed health; principles, procedures and rules of sampling, purity tests, germination and viability tests; concepts and objectives of seed certification; seed dormancy, its causes and breakage.

**Methods of Assessment**

Students will be evaluated using written examinations and laboratory report. The performances of students after being assessed on the above evaluation methods will be converted into letter grades.

**References**

1. Agrawal R.L. 2005. Seed technology, 2nd ed. Oxford and IBH publisher, New Delhi.

2. Anon, 1997. Seed Technology in Tropics. ISTA, Zurich.

3. Black, M., Bradford, K.J. and Vasquez-Ramos, J. 1999. Seed Biology: Advances and Applications. Proceedings of the sixth International workshop on Seeds, Merida, Mexico.

**4. DEPARTMENT: RURAL DEVELOPMENT AND AGRICULTURAL EXTENSION**

**Program:** Rural DevelopmentManagement

**Part 1: Regular Program**

**Course 1.** Development Project Management & Fundraising

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Course Title** | **Development Project Management & Fundraising** | | | | |
| **Course Code** | Rdmt 6031 | | | | |
| **M.Sc. Program** | Rural Development Management | | | | |
| **Module Name** | Development Management | | | | |
| **Module No.** | 03 | | | | |
| **Cr. Hr.** | **4** | | | | |
| **Workload** | **Lecture** | **Project Assignment** | **Tutorial** | **Home Study** | **CP** |
| **48** | **-** | **22** | **146** | **8** |
| **Lecture days, Hours & Room:** |  | | | | |
| **Tutorial/Lab days & Hours** |  | | | | |
| **Target Group:** | M.Sc. in Rural Development Management (First Year) | | | | |
| **Year /Semester** | Year 1 & Semester 2 | | | | |
| **Pre-requisites** |  | | | | |
| **Status of the course** | Compulsory | | | | |

**COURSE DESCRIPTION**

Development intervention in project and Program mode is very common in most developing countries, including Ethiopia. As countries world-over are increasingly adopting the principles of democracy, the competition seeking international-aid from donor nations for developmental purposes is on the increase. Well-designed development proposals tend to attract funding. Being able to write proposals that win funding requires a lot of awareness on donors and the nuances of identifying community problems in right perspective and writing proposals. This course aims at teaching and training the learners to acquire the necessary knowledge and skills required to write good development proposals; also methods and strategies of fund-raising.

***Upon Successful completion of this course, students will be able to:***

* Prepare strategic planning and operational planning in the context of an organization as well as in a village-setting.
* Describe the different stages of project / Program cycle (such as assessment, planning, implementation, monitoring and evaluation).
* Explain analytical techniques for planning local development and write it up in the form of development project proposals
* Discuss the knowledge and skills required to write good development proposals; also methods and strategies of fund-raising.

**Course Outline, and Suggested Readings**

|  |  |
| --- | --- |
| **Outline** | **Reference** |
| **Unit – 1: Project Identification:** Historical and current developments – Background; Development Intervention – Induced development - Project / Program – by governments and NGOs/INGOs. Types of NGOs, Identity and ideologies. Profile of NGO operations in different countries and sectors ofactivity; Need and the purpose. Main characteristics of development Projects; Strategic Planning & Operational Planning. Comprehensive Development Framework. | IFRC, 2010. Project/Program Planning: Guidance Manual, International Federation of Red Cross and Red Crescent Societies (available at: [www.ifrd.org](http://www.ifrd.org)), Geneva.  Narayanasamy N, 2009. *Participatory Rural Appraisal: Principles, Methods andApplications*, Sage Publications, New Delhi.  BrithaMikkelsen, 2005. *Methods for Development Work and Research: A Guide forPractitioners*, Sage Publications, New Delhi.  Audace I. kanshahu, 2000. *Planning and Implementing Sustainable Projects inDeveloping Countries*, AgBe Publishing, Singapore. |
| **Unit – 2: Analytical Techniques for Planning Local Development:** Concept and Principles of Participatory Rural Appraisal, Popular Methods and Tools in PRA; Appraisal tools, Semi-structured Interviews, Focus Group Discussions, Planning tools, Assessing Community Needs and Priorities, Assessing Local resources and skills, Participatory Process. | IFRC, 2010. Project/Program Planning: Guidance Manual, International Federation of Red Cross and Red Crescent Societies (available at: [www.ifrd.org](http://www.ifrd.org)), Geneva.  Narayanasamy N, 2009. *Participatory Rural Appraisal: Principles, Methods andApplications*, Sage Publications, New Delhi.  BrithaMikkelsen, 2005. *Methods for Development Work and Research: A Guide forPractitioners*, Sage Publications, New Delhi.  Audace I. kanshahu, 2000. *Planning and Implementing Sustainable Projects inDeveloping Countries*, AgBe Publishing, Singapore. |
| **Unit – 3: Proposal Development:** Identifying the need for development intervention; Vision development; Development objectives and short-term objectives; Project life cycle analysis; Components and Activity definition. Sources of information for proposal development; Project proposal – models and design. Scale, scope – main components, strategies and approaches. | IFRC, 2010. Project/Program Planning: Guidance Manual, International Federation of Red Cross and Red Crescent Societies (available at: [www.ifrd.org](http://www.ifrd.org)), Geneva.  Narayanasamy N, 2009. *Participatory Rural Appraisal: Principles, Methods andApplications*, Sage Publications, New Delhi. |
| **Unit – 4: Project Organization & Implementation:** Organizational Structure of Projects; Project Cycle Management;Project Management process; Program management; BudgetManagement; Project Time Management; ImplementationManagement; Implementation dashboard for progress monitoring;Risk response planning & mitigation management. Softwares andIT tools for Development Project Management; HR Planning,Skill-sets &responsibility matrix. Continuous Improvement.Movement Building - Remedial – Developmental;Empowerment, capacity building, Self-help and Self-reliance,Income Generation, Community Development, Advocacy,Campaign & Collusion building. | IFRC, 2010. Project/Program Planning: Guidance Manual, International Federation of Red Cross and Red Crescent Societies (available at: [www.ifrd.org](http://www.ifrd.org)), Geneva.  Narayanasamy N, 2009. *Participatory Rural Appraisal: Principles, Methods andApplications*, Sage Publications, New Delhi.  BrithaMikkelsen, 2005. *Methods for Development Work and Research: A Guide forPractitioners*, Sage Publications, New Delhi. |
| **Unit – 5: Conceptual Frameworks for Monitoring and Evaluation (M&E):** Project Management Cycle; Developmentmonitoring and evaluation; Rationale and purpose of monitoringand evaluation; Accountability; Principles of planning,Understanding the inter-linkages and dependencies betweenplanning, monitoring and evaluation. Evaluating Effectivenessand Efficiency; Evaluation Strategies: Classification based onmethod of evaluation, and classification based on purpose. Typesof evaluation: Formative Evaluation, Summative Evaluation; Self-evaluation; Independent Evaluation / External Evaluation; Participatory Evaluation; Joint Evaluation; Mid-term Evaluation; Thematic / Sector evaluation. | ILO, 2012. *ILO Policy Guidelines for results based Evaluation*, ILO Geneva.  UNDP, 2010. *Results Based Management – Handbook*, Strengthening RBM harmonization for improved development results  UNDP, 2002. *Handbook on Monitoring and Evaluating for Results*, UNDP Evaluation Office  NORAD, 2008. *Results Management in Norwegian Development Cooperation – A* |
| **Unit -6: Operational Frameworks for Monitoring and Evaluation:** Evaluation Policy: Principles, norms and standards and methodology for evaluation; Understanding Indicators; Identifying indicators; Results Chain; what is a result? – Output/deliverables, outcome and Impact; Measuring performance through monitoring and evaluation. Basic data analysis to generate performance information; Designing an M & E System; Documentation management system; Designing Reporting Protocols. | ILO, 2012. *ILO Policy Guidelines for results based Evaluation*, ILO Geneva.  UNDP, 2010. *Results Based Management – Handbook*, Strengthening RBM harmonization for improved development results  UNDP, 2002. *Handbook on Monitoring and Evaluating for Results*, UNDP Evaluation Office  NORAD, 2008. *Results Management in Norwegian Development Cooperation – A* |
| **Unit-7: Tools and Frameworks for Monitoring and Evaluation:** Use of Base-line Surveys; LFA – Logical Frameworks; The 4 x 4 LFA Matrix; Concepts in LFA; The Analysis Stage – Stakeholder Analysis; Problem Analysis; Analysis of Objectives; Analysis of Strategies: The matrix format – terminology – intervention logic – vertical logic – horizontal logic; Assumptions and Risks; Indicators and means of verification: Evaluation criteria and their link to the logframe; Result Based Monitoring (RBM); Scientific method, Project Management-oriented method (PERT/CPM), Qualitative Method; Project Performance reporting; Staff Performance Reporting; Financial performance indicators; Community-based Monitoring system; | ILO, 2012. *ILO Policy Guidelines for results based Evaluation*, ILO Geneva.  UNDP, 2010. *Results Based Management – Handbook*, Strengthening RBM harmonization for improved development results  UNDP, 2002. *Handbook on Monitoring and Evaluating for Results*, UNDP Evaluation Office  NORAD, 2008. *Results Management in Norwegian Development Cooperation – A*  Jody ZallKusek and Ray C. Rist, *Ten Steps to a Result based Monitoring andEvaluation System*, World Bank |
| **Unit – 8: Fund-raising:** Fund-raising; Project Appraisal – donor appraisal of projects for possible funding. Government financing for rural development; multilateral and bi-lateral agencies involved in funding development activities; Corporate Social Responsibility (CSR) funds; Local resource mobilization; User participation in financing development’ Financial performance indicators; donor reporting. | IFRC, 2010. Project/Program Planning: Guidance Manual, International Federation of Red Cross and Red Crescent Societies (available at: [www.ifrd.org](http://www.ifrd.org)), Geneva.  Narayanasamy N, 2009. *Participatory Rural Appraisal: Principles, Methods andApplications*, Sage Publications, New Delhi.  BrithaMikkelsen, 2005. *Methods for Development Work and Research: A Guide forPractitioners*, Sage Publications, New Delhi.  Audace I. Kanshahu, 2000. *Planning and Implementing Sustainable Projects inDeveloping Countries*, AgBe Publishing, Singapore. |

**Further Readings**

Andrew Shepherd, 1998. *Sustainable Rural Development,* Palgrave McMillan Publications, New York.

Edward J Blakely and Ted K Bradshaw, 2003.*Planning Local Economic Development: Theory and Practice,* Vistaar Publications, New Delhi

Simon Bell and Stephen Morse, 2003.*Measuring Sustainability,* Earth Scan Publications, London.

**Mode of Delivery**

The mode of the delivery of the course combines lectures, discussion, questioning and answering, readings, assignments, individual and /or group works and presentation.

**ASSESSMENT METHODS**

* Evaluation will be carried out based on continuous assessment which comprises:
* Individual presentation
* Group presentation
* Term paper
* Final exam

**Course 2.** Econometrics for Development Professionals

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Course Title** | **Econometrics for Development Professionals** | | | | |
| **Course Code** | Rdmt 6041 | | | | |
| **M.Sc. Program** | Rural Development Management | | | | |
| **Module Name** | Research Methods & Tools | | | | |
| **Module No.** | 04 | | | | |
| **Cr. Hr.** | **4** | | | | |
| **Workload** | **Lecture** | **Project Assignment** | **Tutorial** | **Home Study** | **CP** |
| **35** | **0** | **26** | **101** | **4** |
| **Target Group:** | M.Sc. in Rural Development Management (First Year) | | | | |
| **Year /Semester** | Year 1 & Semester 1 | | | | |
| **Pre-requisites** |  | | | | |
| **Status of the course** | **Compulsory** | | | | |

**COURSE DESCRIPTION**

This course aims at developing amongst students the necessary skills needed for empirical research using modern econometrics techniques in addressing development issues. It covers the problems of regression analysis and the treatment of categorical variables, which typically feature in the analysis of data from developing countries. Illustrations of the concepts covered in the course are taken from development sectors. The aim of this course is to equip the students with the necessary skills, including both the acquisition of habits of thought and knowledge of the techniques of modern econometrics, required for applied research in development studies. The course is application oriented. Accordingly, the emphasis will be on application of techniques for development policy analysis and will not be overly concerned with mathematical proofs. The course also aims to provide students with the ability to use STATA in an effective manner.

***Upon Successful completion of this course, students will be able to:***

* Show their knowledge and understanding of material needed for empirical quantitative analysis of micro and macro data relevant to development issue
* Explain the theory and put into practice modern econometrics emphasizing application;
* Develop the habits of thought, knowledge and understanding to be able to carry out good quality applied econometric research with confidence;
* Exhibit critical insight to appraise econometric results obtained by other researchers.

**Course Outline, and Suggested Readings**

|  |  |
| --- | --- |
| **Outline** | **Reference** |
| **Unit – 1: What is econometrics?** Meaning of Econometric models; Econometric tools; Aims and methodology of econometrics. Data sources and data types; Single entities and group entities; Functional forms and stochastic structure of variables. | G.S. Maddala, 1992. *Introduction to Econometrics*, Macmillan Publishing Company Inc. New York.  Green W.H…… *Econometric Analysis*, Pearson Education  Gujarati, D., 1988. *Basic Econometrics*, McGrawHill, New Delhi. |
| **Unit -2: Statistical Background:** Probability; Random variables and Probability Distributions; The Normal Probability Distributions and Related Distributions; Classical Statistical Inferences; Properties of Estimators; Sampling Distributions for Samples from a Normal Population; Testing of Hypotheses; Relationship between Confidence Interval Procedures and Tests of Hypotheses. | G.S. Maddala, 1992. *Introduction to Econometrics*, Macmillan Publishing Company Inc. New York.  Green W.H…… *Econometric Analysis*, Pearson Education  Gujarati, D., 1988. *Basic Econometrics*, McGrawHill, New Delhi. |
| **Units -3: Simple Regression:** Introduction; Specification of the Relationships; Statistical Inference in the Linear Regression Model; Analysis of Variance for the Simple Regression Model; Prediction with the Simple Regression Model; Alternative Functional Forms for Regression Equations; The Regression Fallacy. | G.S. Maddala, 1992. *Introduction to Econometrics*, Macmillan Publishing Company Inc. New York.  Green W.H…… *Econometric Analysis*, Pearson Education  Gujarati, D., 1988. *Basic Econometrics*, McGrawHill, New Delhi. |
| **Unit-4: Multiple Regression:** Introduction: A Model with two Explanatory Variables; Statistical Inferences in the Multiple Regression Model; Interpretation of the Regression Coefficients; Partial Correlation and Multiple Correlation; Relationships among Simple, partial, and Multiple Correlation Coefficients; prediction in the Multiple Regression Model; Analysis of Variance and Tests of Hypotheses; Degrees of Freedom; Tests for Stability. | G.S. Maddala, 1992. *Introduction to Econometrics*, Macmillan Publishing Company Inc. New York.  Green W.H…… *Econometric Analysis*, Pearson Education  Gujarati, D., 1988. *Basic Econometrics*, McGrawHill, New Delhi. |
| **Unit-5: Introduction to Time Series Analysis:** Introduction; Two Methods of Time-Series Analysis:Frequency Domain and Time Domain; Stationary andNon-stationary Time Series; Some useful Model for TimeSeries. | G.S. Maddala, 1992. *Introduction to Econometrics*, Macmillan Publishing Company Inc. New York.  Green W.H…… *Econometric Analysis*, Pearson Education  Gujarati, D., 1988. *Basic Econometrics*, McGrawHill, New Delhi. |

**Further Readings**

Verbeek, M. 2008. *A Guide to Modern Econometrics*, Third Edition, John Wiley &Sons, Ltd.

Hill R. Carter, William E. Griffiths & George G Judge, 2001.*Undergraduate fs,* John Wiley & Sons, New York**.**

**Mode of Delivery**

The mode of the delivery of the course combines lectures, discussion, questioning and answering, readings, assignments, individual and /or group works and presentation.

**ASSESSMENT METHODS**

Evaluation will be carried out based on continuous assessment which comprises:

* Individual presentation
* Group presentation
* Term paper
* Final exam

**Course 3.** Research Methods and Statistical Software application

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| --- | --- | --- | --- | --- | --- |
| **Course Title** | **Research Methods and Statistical Software application** | | | | |
| **Course Code** | Rdmt6013 | | | | |
| **M.Sc. Program** | Rural Development Management | | | | |
| **Module Name** | Development Research | | | | |
| **Module No.** | 04 | | | | |
| **Cr. Hr.** | **4** | | | | |
| **Workload** | **Lecture** | **Project Assignment** | **Tutorial** | **Home Study** | **CP** |
| **36** | **0** | **12** | **114** | **8** |
| **Target Group:** | M.Sc. in Rural Development Management (First Year) | | | | |
| **Year /Semester** | Year 1 & Semester 2 | | | | |
| **Pre-requisites** |  | | | | |
| **Status of the course** | **Compulsory** | | | | |

**COURSE DESCRIPTION**

Research can be instrumental part of problem resolution through informed decision-making. In this regard, this course can help understand issues, find workable solutions, and evaluate success particularly for those working closely with rural community, it mostly depends on qualitative methods of research, although it does not disregard the need for roping in quantifications where necessary. This course aims at describing research techniques such as research problem formulation, data collection and analytical methods and interpretation of results. This will be followed by scientific writing of research results, where the learners shall get clarity on citation, intellectual ownership, plagiarism, descriptive and analytical writing, and accountability of researchers. Lastly application of statistical software with the help of SPSS will be introduced for learners.

***Upon Successful completion of this course, students will be able to:***

* Understand the basics of research methods & and the processes involved
* Explain various types of research, and develop the nuances of scientific writing
* Apply computer software packages such as SPSS and STATA for their own research purposes, and
* Make data entry and do actual analysis of data, and interpret results
* List statistical tests and measurement techniques available for development professionals

**Course Outline, and Suggested Readings**

|  |  |
| --- | --- |
| **Outline** | **Reference** |
| **Unit – 1: Understanding Research and Research Problem:** The Concept of Development Research. Scientific Method in Research; Conditions for Development Research; Overview of the Research Process; Types of Development Research; Key Principles of Development Research; The Research Problem; Identifying and formulating a research problem; Hypothesis and their formulation: Operationalizing hypothesis; Alternatives to hypothesis. Sources of information; Literature review. Conventional versus Development Research approaches. | Britha Mikkelsen.2005. *Methods for Development Work and Research: A New Guide forPratitioners,* Sage Publications, New Delhi.  Narayanasamy N, 2009. *Participatory Rural Appraisal: Principles methods, andApplications,* Sage Publications, New Delhi.  Vandana Desai & Robert B Potter, 2009. *Doing Development Research*, Sage Publications, New Delhi.  David L Morgan, 1997. *Focus Groups as Qualitative Research,* Sage Publications, New Delhi.  Zina O’Leary, 2010. *The Essential Guide to Doing Your Research Project,* Sage Publications, New Delhi  Paul Oliver, *Writing Your Thesis,* Sage Publications |
| **Unit – 2: Types of Research:** Concepts and Theories: Concept, Theory, Model; Types – Historical, Comparative, Descriptive, correlation, experimental, evaluation, action. Nature and use of arguments: Deductive and inductive arguments; logic and fallacies in arguments, classification and analogy in argument, The nature of knowledge; Approaches to research based knowledge – positivist approach; interpretivist approach; the reconciliatory approach; Feminist research. | Britha Mikkelsen.2005. *Methods for Development Work and Research: A New Guide forPratitioners,* Sage Publications, New Delhi.  Narayanasamy N, 2009. *Participatory Rural Appraisal: Principles methods, andApplications,* Sage Publications, New Delhi.  Vandana Desai & Robert B Potter, 2009. *Doing Development Research*, Sage Publications, New Delhi.  David L Morgan, 1997. *Focus Groups as Qualitative Research,* Sage Publications, New Delhi.  Zina O’Leary, 2010. *The Essential Guide to Doing Your Research Project,* Sage Publications, New Delhi  Paul Oliver, *Writing Your Thesis,* Sage Publications |
| **Unit – 3: Features in Social Science Research:** Quantitative and qualitative data. Combining qualitative and quantitative methods in social inquiry. Drawing and verifying conclusions in qualitative analysis – tactics for generating meaning; tactics for testing or confirming findings,  Data Processing and Analysis;Basic statistical concepts; Elements and types of data analysis; Statistics in Research; Measures of Central Tendency; Measures of Dispersion; Measures of Asymmetry (Skewness) | Britha Mikkelsen.2005. *Methods for Development Work and Research: A New Guide forPratitioners,* Sage Publications, New Delhi.  Narayanasamy N, 2009. *Participatory Rural Appraisal: Principles methods, andApplications,* Sage Publications, New Delhi.  Vandana Desai & Robert B Potter, 2009. *Doing Development Research*, Sage Publications, New Delhi.  David L Morgan, 1997. *Focus Groups as Qualitative Research,* Sage Publications, New Delhi.  Zina O’Leary, 2010. *The Essential Guide to Doing Your Research Project,* Sage Publications, New Delhi  Paul Oliver, *Writing Your Thesis,* Sage Publications |
| **Unit – 4: Developing a scientific research:** Background. The quantitative tradition, qualitative research writing – the analytical mix. Research Documents: Proposals, Examples of proposals, Abstracts and titles, dissertations (and projects); writing to report versus writing to learn: writing as analysis, writing choices, ethical issues – Intellectual ownership and plagiarism; citation and acknowledgement; responsibility and accountability of the researcher, communicating research professionally. | Britha Mikkelsen.2005. *Methods for Development Work and Research: A New Guide forPratitioners,* Sage Publications, New Delhi.  Narayanasamy N, 2009. *Participatory Rural Appraisal: Principles methods, andApplications,* Sage Publications, New Delhi.  Vandana Desai & Robert B Potter, 2009. *Doing Development Research*, Sage Publications, New Delhi.  David L Morgan, 1997. *Focus Groups as Qualitative Research,* Sage Publications, New Delhi.  Zina O’Leary, 2010. *The Essential Guide to Doing Your Research Project,* Sage Publications, New Delhi  Paul Oliver, *Writing Your Thesis,* Sage Publications |
| **Unit – 5: Application of Statistical Software in research:**  Starting SPSS; SPSS main menus; working with data editor; importing and exporting data; Correlation and Regression Analysis; Testing of Hypotheses; Chi-square Test; Analysis of Variance and Covariance; Multivariate Analysis techniques. | Britha Mikkelsen.2005. *Methods for Development Work and Research: A New Guide forPratitioners,* Sage Publications, New Delhi.  Narayanasamy N, 2009. *Participatory Rural Appraisal: Principles methods, andApplications,* Sage Publications, New Delhi.  Vandana Desai & Robert B Potter, 2009. *Doing Development Research*, Sage Publications, New Delhi.  David L Morgan, 1997. *Focus Groups as Qualitative Research,* Sage Publications, New Delhi.  Zina O’Leary, 2010. *The Essential Guide to Doing Your Research Project,* Sage Publications, New Delhi  Paul Oliver, *Writing Your Thesis,* Sage Publications |

**Further Readings**

Gordon Taylor,2010, *The Student’s Writing Guide: For the arts and social sciences*, Cambridge University Press, UK.

Sharon M Ravitch and Matthew Rigan.*Reason & Rigor: How Conceptual Frameworks Guide Research,* Sage Publications, New Delhi.

Christine L Alfano& Alyssa J.O’Brien.*Envision: Persuasive Writing in a Visual World,* Pearson Longman, New York.

Niall Ó. Dochartaigh, *Internet Research Skills*, Sage Publications, New Delhi.

Jacqueline Aldridge, *The Research Funding Toolkit: How to Plan and Write Successful Grant Application,* Sage Publications, New Delhi.

**Mode of Delivery**

The mode of the delivery of the course combines lectures, discussion, questioning and answering, readings, assignments, individual and /or group works and presentation.

**ASSESSMENT METHODS**

Evaluation will be carried out based on continuous assessment which comprises:

* Individual presentation
* Group presentation
* Term paper
* Final exam

**Course 4.** Food Security and Nutrition

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| --- | --- | --- | --- | --- | --- |
| **Course Title** | **Food Security and Nutrition** | | | | |
| **Course Code** | Rdmt 6021 | | | | |
| **M.Sc. Program** | Rural Development Management | | | | |
| **Module Name** | Research Methods & Tools | | | | |
| **Module No.** | 04 | | | | |
| **Cr. Hr.** | **3** | | | | |
| **Workload** | **Lecture** | **Project Assignment** | **Tutorial** | **Home Study** | **CP** |
| **35** | **0** | **26** | **101** | **8** |
| **Target Group:** | M.Sc. in Rural Development Management (First Year) | | | | |
| **Year /Semester** | Year 1 & Semester 1 | | | | |
| **Pre-requisites** |  | | | | |
| **Status of the course** | **Compulsory** | | | | |

**COURSE DESCRIPTION**

This course provides an overview of fundamental knowledge in food and nutrition. The course covers dietary guidelines and healthy eating; concept of food security, the major roles and functions of the principal nutrients, concepts of energy balance; assessment of diet quality and the impact of diet on nutritional status and food security. Students will be introduced to the principles of food security and nutrition policy and the translation of nutrition research and policy into nutrient recommendations, dietary guidelines and recommended daily food patterns. The course will help student to develop a sound knowledge of food security, an understanding of the fundamental concepts of nutrition and the links between food, nutrition and development. The course is believed to encourage evidence-driven analysis of effective policy responses to food security and nutrition challenges in low-income countries, particularly for Ethiopia.

***Upon Successful completion of this course, students will be able to:***

* Understand the range of policy levers that are used to enact national food security and nutrition policies in developing countries;
* Describe evidence of the effectiveness of these policies and programs in improving food security, poverty, and nutrition in different contexts;
* Analyze information from nutrition, food and socio-economic data to understand and inform policy-relevant decisions; and
* Produce plausible and critical writing to influence critical policy debates.

**Course Outline, and Suggested Readings**

|  |  |
| --- | --- |
| **Outline** | **Reference** |
| **Unit – 1: Introduction to the fundamentals of Food and Nutrition Security:**  Concept of food security, nutrition, nutrition security, conceptual developments of food security and type of food insecurity | E Whitney, SR Rolfes, Crowe T, Cameron-Smith D, Walsh A Understanding Nutrition: Australian and New Zealand Edition, 2nd Ed.: Australia: Cengage Learning Australia, 2014  Maxwell S., and Frankenberger T.,(1992). Household Food Security: Concepts, Indicators, Measurements, IFAD and UNICEF, Rome, Italy.  J Germov& Williams (eds) A Sociology of Food and Nutrition: The social appetite. Oxford: Oxford University Press, 1999.  Alberto Valde’s (1981). Food Security for Developing Countries. Westview Pres. Boulder.  FAO, (2010). Nutrition and food security: Indicators that link food, food security and nutrition; Dietary Diversity questionnaire: DDS and Household Food Insecurity Access Scale (HFIAS). Nutrition and Consumer Protection Division, Dietary requirements and assessment unit. |
| **Unit – 2: Food Systems and Food Safety**  Constituents of food system; food, culture and human needs; key actors from farm to mouth, food safety measures and controls. | Nestle Marion (2013). Food Politics: How the Food Industry Influences Nutrition and Health. Los Angeles. California, University of California Press.  Hinrichs Clare (2000). Embeddedness and Local Food Systems: Notes on two types of direct agricultural markets.  Geoff Tansey, (1995). The Food System: A guide. City University London. |
| **Unit – 3: Analysis of Food Production Systems**  Understanding food production issues, Characteristics of Agriculture Production Functions, Farm households as both producers and consumers, Food Production Analysis. | Alberto Valde’s (1981). Food Security for Developing Countries. Westview Pres. Boulder.  Nelson (1981). Food aid and Development. Agricultural Development Council, New York.  J Germov& Williams (eds) A Sociology of Food and Nutrition: The social appetite. Oxford: Oxford University Press, 1999. |
| **Unit – 4: Analysis of nutrition, food markets and Macro Food Policy**  Global challenges to nutrition and public health, measurement of nutrition (Dietary Diversity questionnaire: DDS and Household Food Insecurity Access Scale (HFIAS), food market analysis, Macro food policy perspective: international context and domestic food price policy | Leidy H. J., (2011). The effect of eating frequency on appetite control and food intake: brief synopsis of controlled feeding studies. *The Journal of Nutrition, 141:154–7.* jn.109.114389.  IFPRI, (2012). Improving the Measurement of Food Security. Sustainable solutions to end hunger and poverty. Poverty, Health, and Nutrition Division, Development Strategy and Governance Division.  Alberto Valde’s (1981). Food Security for Developing Countries. Westview Pres. Boulder.  FAO, (2010). Nutrition and food security: Indicators that link food, food security and nutrition; Dietary Diversity questionnaire: DDS and Household Food Insecurity Access Scale (HFIAS). Nutrition and Consumer Protection Division, Dietary requirements and assessment unit. |
| **Unit – 5: Sustainable Agriculture and food security policies in Ethiopian context**  Agricultural and Food security policies in Ethiopia: past and current | Frankenberger T. R., et. al. (2007). Ethiopia: The Path to Self-Reliance, Volume I: Final Report, Addis Ababa Ethiopia.  Kifle L. and Yosef G. (1999). The Food Security Situation in Ethiopia. Concept, Status and Trends. Proceedings of the First National Workshop of NOVIN Partners. Forum on Sustainable land Use. NOVIN, Addis Ababa,Ethiopia.  FAO, (2011). Improving Statistics for Food Security, Sustainable Agriculture, and Rural Development: An Action Plan for Africa 2011-2015 |

**Further Readings**

Abdulai A., Christopher B., Barrett Hoddinott J. (2005). Does food aid really have disincentive effects; New evidence from sub-Saharan Africa, IFPRI, Washington, DC, USA

ACF, (2011).Food Security and Livelihood Assessments, A practical guide for Field workers.Technical Department of Food Security and Livelihoods.Joseph Ferruzi Printing Associates, Inc, Uganda.

Boussard J. and Benoit D. *et al*. (2005). Food Security and Agricultural Development in Sub Saharan Africa; Building a Case for More Support. Background Document for FAO, Rome.

**Mode of Delivery**

The mode of the delivery of the course combines lectures, discussion, questioning and answering, readings, assignments, individual and /or group works and presentation.

**ASSESSMENT METHODS**

Evaluation will be carried out based on continuous assessment which comprises:

* Individual presentation
* Group presentation
* Term paper
* Final exam

**Part 2: Extension Program**

**Course 1.** Rural Microfinance

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| --- | --- | --- | --- | --- | --- |
| **Course Title** | **Rural Microfinance** | | | | |
| **Course Code** | Rdmt 6022 | | | | |
| **M.Sc. Program** | Rural Development Management | | | | |
| **Module Name** | Development Strategies | | | | |
| **Module No.** | 02 | | | | |
| **Cr. Hr.** | **2** | | | | |
| **Workload** | **Lecture** | **Project Assignment** | **Tutorial** | **Home Study** | **CP** |
| **28** | **-** | **12** | **95** | **4** |
| **Target Group:** | M.Sc. in Rural Development Management (First Year) | | | | |
| **Year /Semester** | Year 1 & Semester 1 | | | | |
| **Pre-requisites** |  | | | | |
| **Status of the course** | Compulsory | | | | |

**COURSE DESCRIPTION**

Expanding financial access to everyone is an interesting development idea, particularly in the context of reaching the world's poorest families in the remote areas in a more effective way. Pinning faith on this concept, there has been a surge of interest in microfinance in the recent past. Ethiopia is reported to have 1 bank branch per 100,000 people. In the absence of bank branches, often, it is Micro Finance Institutions (MFIs) or local savings and loan groups that serve as source of finance for all. Considering the potential of micro-finance in generating self-employment, and to lift women and poor families out of poverty, rural finance institutions have found centre-stage in development discourse (and practice) today. Rural finance today is extensively becoming a good source of employment for rural development graduates.

***Upon Successful completion of this course, students will be able to:***

* Outline what rural finance programs are and what they seek to accomplish.
* Clarify the concepts of credit and debt, small business opportunities and microfinance.
* Explain why and how rural finance operations grow to provide financial services to poor and low-income people on a sustainable basis.
* Describe rural finance operations with specific reference to lending and loan operations

**Course Outline, and Suggested Readings**

|  |  |
| --- | --- |
| **Outline** | **Reference** |
| **Unit – 1: Basic concepts of Rural Finance:** The concept of group lending, Saving mobilization process & Credit; basic principles & tenets, Government support, Latin American Model; Grameen Bank model; Individual lending; solidarity lending; Community-Managed Loan Funds (CMLFs); Revolving Loan Funds; Village Banking; Savings and Loan Associations (SLAs); Comparison of models and lending methodologies. Approaches to (or Methodology of) group lending, Approach as a success strategy in micro-credit. | Ledgerwood, Joanna, *Microfinance handbook: an institutional and financial perspective*, (Washington, D.C.: The World Bank, 1998).  Waterfield, Charles, and Ann Duval, *CARE Savings and Credit Sourcebook,* (CARE,1996).  United Nations Capital Development Fund, *Special* Unit for Microfinance, *Microfinance Distance Learning Course*. New York: UNCDF, 2002. |
| **Unit – 2: Financial Institutions, Products and Services:** rural finance in Ethiopia; Formation of MFIs - Policies and procedures in Ethiopia. Portfolio management, micro-credit, micro-finance, micro-insurance, micro-enterprise, business development services. | Ledgerwood, Joanna, *Microfinance handbook: an institutional and financial perspective*, (Washington, D.C.: The World Bank, 1998).  Waterfield, Charles, and Ann Duval, *CARE Savings and Credit Sourcebook,* (CARE,1996).  United Nations Capital Development Fund, *Special* Unit for Microfinance, *Microfinance Distance Learning Course*. New York: UNCDF, 2002. |
| **Unit – 3: Loan and Lending Process Management:** Strategic Business Planning, Client Identification, Client Contact; Rotating access to credit; Various types of loans; Saving mobilization; Loan Appraisal and disbursement; Post-disbursement contacts; Visitation Schedule; Operating cycle, Risk and Delinquency Management. | Ledgerwood, Joanna, *Microfinance handbook: an institutional and financial perspective*, (Washington, D.C.: The World Bank, 1998).  Waterfield, Charles, and Ann Duval, *CARE Savings and Credit Sourcebook,* (CARE,1996). |
| **Unit – 4: Key Financial Factors:** Determinants of income; Portfolio size, Interest Rate, Commission Rate, Grants and Loans (subsidized and unsubsidized). Setting Interest rates and service charges; Methods of calculating interest payments; Maximizing outreach and profitability. Standards for micro finance impact assessment. | Ledgerwood, Joanna, *Microfinance handbook: an institutional and financial perspective*, (Washington, D.C.: The World Bank, 1998).  United Nations Capital Development Fund, *Special* Unit for Microfinance, *Microfinance Distance Learning Course*. New York: UNCDF, 2002. |
| **Unit – 5: Basic Accounting Principles for MFIs**: Financial Statements used in rural finance; Balance Sheet; Income statement; Cash flow statement; Accounting Cycle; Portfolio report. | Ledgerwood, Joanna, *Microfinance handbook: an institutional and financial perspective*, (Washington, D.C.: The World Bank, 1998).  Waterfield, Charles, and Ann Duval, *CARE Savings and Credit Sourcebook,* (CARE,1996).  United Nations Capital Development Fund, *Special* Unit for Microfinance, *Microfinance Distance Learning Course*. New York: UNCDF, 2002. |

**Further Readings**

IFC, International Finance Corporation: Small and Medium Enterprise Development www.ifc.org/sme

Morduch, Jonathan, “The Microfinance Promise.” *Journal of Economic Literature*, Vol. 37 (December 1999), pp. 1569-1614.

Rhyne. Elisabeth, “The Yin and Yang of Microfinance: Reaching the Poor and Sustainability”, MicroBanking Bulletin, No. 2 (July 1998), pp. 6-9.

Rosenberg, Richard, *Microcredit Interest Rates, CGAP Occasional Paper No. 1* (Washington, D.C.: World Bank, Consultative Group to Assistthe Poorest).

**Mode of Delivery**

The mode of the delivery of the course combines lectures, discussion, questioning and answering, readings, assignments, individual and /orgroup works and presentation.

**ASSESSMENT METHODS**

Evaluation will be carried out based on continuous assessment which comprises:

* Individual presentation
* Group presentation
* Mid exam
* Final exam

**Course 2.** Development Project Management & Fundraising

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| --- | --- | --- | --- | --- | --- |
| **Course Title** | **Development Project Management & Fundraising** | | | | |
| **Course Code** | Rdmt 6031 | | | | |
| **M.Sc. Program** | Rural Development Management | | | | |
| **Module Name** | Development Management | | | | |
| **Module No.** | 03 | | | | |
| **Cr. Hr.** | **4** | | | | |
| **Workload** | **Lecture** | **Project Assignment** | **Tutorial** | **Home Study** | **CP** |
| **48** | **-** | **22** | **146** | **8** |
| **Target Group:** | M.Sc. in Rural Development Management (First Year) | | | | |
| **Year /Semester** | Year 1 & Semester 2 | | | | |
| **Pre-requisites** |  | | | | |
| **Status of the course** | Compulsory | | | | |

**COURSE DESCRIPTION**

Development intervention in project and Program mode is very common in most developing countries, including Ethiopia. As countries world-over are increasingly adopting the principles of democracy, the competition seeking international-aid from donor nations for developmental purposes is on the increase. Well-designed development proposals tend to attract funding. Being able to write proposals that win funding requires a lot of awareness on donors and the nuances of identifying community problems in right perspective and writing proposals. This course aims at teaching and training the learners to acquire the necessary knowledge and skills required to write good development proposals; also methods and strategies of fund-raising.

***Upon Successful completion of this course, students will be able to:***

* Prepare strategic planning and operational planning in the context of an organization as well as in a village-setting.
* Describe the different stages of project / Program cycle (such as assessment, planning, implementation, monitoring and evaluation).
* Explain analytical techniques for planning local development and write it up in the form of development project proposals
* Discuss the knowledge and skills required to write good development proposals; also methods and strategies of fund-raising.

**Course Outline, and Suggested Readings**

|  |  |
| --- | --- |
| **Outline** | **Reference** |
| **Unit – 1: Project Identification:** Historical and current developments – Background; Development Intervention – Induced development - Project / Program – by governments and NGOs/INGOs. Types of NGOs, Identity and ideologies. Profile of NGO operations in different countries and sectors ofactivity; Need and the purpose. Main characteristics of development Projects; Strategic Planning & Operational Planning. Comprehensive Development Framework. | IFRC, 2010. Project/Program Planning: Guidance Manual, International Federation of Red Cross and Red Crescent Societies (available at: [www.ifrd.org](http://www.ifrd.org)), Geneva.  Narayanasamy N, 2009. *Participatory Rural Appraisal: Principles, Methods andApplications*, Sage Publications, New Delhi.  BrithaMikkelsen, 2005. *Methods for Development Work and Research: A Guide forPractitioners*, Sage Publications, New Delhi.  Audace I. kanshahu, 2000. *Planning and Implementing Sustainable Projects inDeveloping Countries*, AgBe Publishing, Singapore. |
| **Unit – 2: Analytical Techniques for Planning Local Development:** Concept and Principles of Participatory Rural Appraisal, Popular Methods and Tools in PRA; Appraisal tools, Semi-structured Interviews, Focus Group Discussions, Planning tools, Assessing Community Needs and Priorities, Assessing Local resources and skills, Participatory Process. | IFRC, 2010. Project/Program Planning: Guidance Manual, International Federation of Red Cross and Red Crescent Societies (available at: [www.ifrd.org](http://www.ifrd.org)), Geneva.  Narayanasamy N, 2009. *Participatory Rural Appraisal: Principles, Methods andApplications*, Sage Publications, New Delhi.  BrithaMikkelsen, 2005. *Methods for Development Work and Research: A Guide forPractitioners*, Sage Publications, New Delhi.  Audace I. kanshahu, 2000. *Planning and Implementing Sustainable Projects inDeveloping Countries*, AgBe Publishing, Singapore. |
| **Unit – 3: Proposal Development:** Identifying the need for development intervention; Vision development; Development objectives and short-term objectives; Project life cycle analysis; Components and Activity definition. Sources of information for proposal development; Project proposal – models and design. Scale, scope – main components, strategies and approaches. | IFRC, 2010. Project/Program Planning: Guidance Manual, International Federation of Red Cross and Red Crescent Societies (available at: [www.ifrd.org](http://www.ifrd.org)), Geneva.  Narayanasamy N, 2009. *Participatory Rural Appraisal: Principles, Methods andApplications*, Sage Publications, New Delhi. |
| **Unit – 4: Project Organization & Implementation:** Organizational Structure of Projects; Project Cycle Management;Project Management process; Program management; BudgetManagement; Project Time Management; ImplementationManagement; Implementation dashboard for progress monitoring;Risk response planning & mitigation management. Softwares andIT tools for Development Project Management; HR Planning,Skill-sets &responsibility matrix. Continuous Improvement.Movement Building - Remedial – Developmental;Empowerment, capacity building, Self-help and Self-reliance,Income Generation, Community Development, Advocacy,Campaign & Collusion building. | IFRC, 2010. Project/Program Planning: Guidance Manual, International Federation of Red Cross and Red Crescent Societies (available at: [www.ifrd.org](http://www.ifrd.org)), Geneva.  Narayanasamy N, 2009. *Participatory Rural Appraisal: Principles, Methods andApplications*, Sage Publications, New Delhi.  BrithaMikkelsen, 2005. *Methods for Development Work and Research: A Guide forPractitioners*, Sage Publications, New Delhi. |
| **Unit – 5: Conceptual Frameworks for Monitoring and Evaluation (M&E):** Project Management Cycle; Developmentmonitoring and evaluation; Rationale and purpose of monitoringand evaluation; Accountability; Principles of planning,Understanding the inter-linkages and dependencies betweenplanning, monitoring and evaluation. Evaluating Effectivenessand Efficiency; Evaluation Strategies: Classification based onmethod of evaluation, and classification based on purpose. Typesof evaluation: Formative Evaluation, Summative Evaluation; Self-evaluation; Independent Evaluation / External Evaluation; Participatory Evaluation; Joint Evaluation; Mid-term Evaluation; Thematic / Sector evaluation. | ILO, 2012. *ILO Policy Guidelines for results based Evaluation*, ILO Geneva.  UNDP, 2010. *Results Based Management – Handbook*, Strengthening RBM harmonization for improved development results  UNDP, 2002. *Handbook on Monitoring and Evaluating for Results*, UNDP Evaluation Office  NORAD, 2008. *Results Management in Norwegian Development Cooperation – A* |
| **Unit -6: Operational Frameworks for Monitoring and Evaluation:** Evaluation Policy: Principles, norms and standards and methodology for evaluation; Understanding Indicators; Identifying indicators; Results Chain; what is a result? – Output/deliverables, outcome and Impact; Measuring performance through monitoring and evaluation. Basic data analysis to generate performance information; Designing an M & E System; Documentation management system; Designing Reporting Protocols. | ILO, 2012. *ILO Policy Guidelines for results based Evaluation*, ILO Geneva.  UNDP, 2010. *Results Based Management – Handbook*, Strengthening RBM harmonization for improved development results  UNDP, 2002. *Handbook on Monitoring and Evaluating for Results*, UNDP Evaluation Office  NORAD, 2008. *Results Management in Norwegian Development Cooperation – A* |
| **Unit-7: Tools and Frameworks for Monitoring and Evaluation:** Use of Base-line Surveys; LFA – Logical Frameworks; The 4 x 4 LFA Matrix; Concepts in LFA; The Analysis Stage – Stakeholder Analysis; Problem Analysis; Analysis of Objectives; Analysis of Strategies: The matrix format – terminology – intervention logic – vertical logic – horizontal logic; Assumptions and Risks; Indicators and means of verification: Evaluation criteria and their link to the logframe; Result Based Monitoring (RBM); Scientific method, Project Management-oriented method (PERT/CPM), Qualitative Method; Project Performance reporting; Staff Performance Reporting; Financial performance indicators; Community-based Monitoring system; | ILO, 2012. *ILO Policy Guidelines for results based Evaluation*, ILO Geneva.  UNDP, 2010. *Results Based Management – Handbook*, Strengthening RBM harmonization for improved development results  UNDP, 2002. *Handbook on Monitoring and Evaluating for Results*, UNDP Evaluation Office  NORAD, 2008. *Results Management in Norwegian Development Cooperation – A*  Jody ZallKusek and Ray C. Rist, *Ten Steps to a Result based Monitoring andEvaluation System*, World Bank |
| **Unit – 8: Fund-raising:** Fund-raising; Project Appraisal – donor appraisal of projects for possible funding. Government financing for rural development; multilateral and bi-lateral agencies involved in funding development activities; Corporate Social Responsibility (CSR) funds; Local resource mobilization; User participation in financing development’ Financial performance indicators; donor reporting. | IFRC, 2010. Project/Program Planning: Guidance Manual, International Federation of Red Cross and Red Crescent Societies (available at: [www.ifrd.org](http://www.ifrd.org)), Geneva.  Narayanasamy N, 2009. *Participatory Rural Appraisal: Principles, Methods andApplications*, Sage Publications, New Delhi.  BrithaMikkelsen, 2005. *Methods for Development Work and Research: A Guide forPractitioners*, Sage Publications, New Delhi.  Audace I. Kanshahu, 2000. *Planning and Implementing Sustainable Projects inDeveloping Countries*, AgBe Publishing, Singapore. |

**Further Readings**

Andrew Shepherd, 1998. *Sustainable Rural Development,* Palgrave McMillan Publications, New York.

Edward J Blakely and Ted K Bradshaw, 2003.*Planning Local Economic Development: Theory and Practice,* Vistaar Publications, New Delhi

Simon Bell and Stephen Morse, 2003.*Measuring Sustainability,* Earth Scan Publications, London.

**Mode of Delivery**

The mode of the delivery of the course combines lectures, discussion, questioning and answering, readings, assignments, individual and /or group works and presentation.

**ASSESSMENT METHODS**

* Evaluation will be carried out based on continuous assessment which comprises:
* Individual presentation
* Group presentation
* Term paper
* Final exam

**Course 3.** Gender and Development

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Course Title** | **Gender and Development** | | | | |
| **Course Code** | Rdmt 6032 | | | | |
| **M.Sc. Program** | Rural Development Management | | | | |
| **Module Name** | Development Management | | | | |
| **Module No.** | 03 | | | | |
| **Cr. Hr.** | **3** | | | | |
| **Workload** | **Lecture** | **Project Assignment** | **Tutorial** | **Home Study** | **CP** |
| **28** | **0** | **8** | **99** | **6** |
| **Lecture days, Hours & Room:** |  | | | | |
| **Tutorial/Lab days & Hours** |  | | | | |
| **Target Group:** | M.Sc. in Rural Development Management (First Year) | | | | |
| **Year /Semester** | Year 1 & Semester 1 | | | | |
| **Pre-requisites** |  | | | | |
| **Status of the course** | **Elective** | | | | |

**COURSE DESCRIPTION**

This course is a kind of hands-on experience to issues relating to Gender and Development and it was incorporated with the view that gender equality is central to economic and human development. It provides development managers with sound analytical tools that can be applied to assess issues that revolve around gender and development efforts. The learners of this course, upon completion, shall be able to thoroughly understand why gender perspective is important and contribute to shaping gender mainstreaming in development initiatives. It is also intended to provide this course in not-so-technical fashion with not-so-complicated systems of gender based economic analysis.

***Upon Successful completion of this course, students will be able to:***

* Understand why gender perspective is important in development initiatives
* Recognize the variety of Development perspectives that address gender issues

**Course Outline, and Suggested Readings**

|  |  |
| --- | --- |
| **Outline** | **Reference** |
| **Unit – 1: The Concept of Gender and Development.**  Introduction and Overview; Why worry about gender issues in development: instrumental versus intrinsic concerns; Gender differences across the developing world: an overview; Aspects of gender inequality, Regional differences in gender inequality; Trends in gender inequality | World Bank (2001): Engendering Development, ch. 1, 5  UNDP (1995): Human Development Report 1995, ch. 2  Sen (1998): Development as Freedom, ch. 8  UN (2000): The World’s Women database  World Bank (2011): World Development Report, Overview |
| **Unit -2: Measuring gender differences. G**ender-disaggregated vs. gender-sensitive indicators; Household versus individual indicators, UNDPs gender-related indices, Women and poverty in developing countries | UNDP “Measuring gender inequality” (Chapter 3) in *Human Development Report*, UNDP, New York, 1995  Klasen, S. 2004. Gender-Related Indicators of Well-Being. In McGillivray, M. (Ed.) Human Well-Being: Concept and Measurement. London: Palgrave (2007), 167-192.\*  Dreze, J. and Srinivasan (1997): Widowhood and Poverty in India. Journal of Development Economics\*  Marcoux, A. 1998. The Feminization of Poverty. Population and Development Review.  World Bank, “Is economic development good for gender equality?” (Chapter 5) in *Engendering Development*, Oxford University Press, New York, 2001.  Klasen, S. “UNDP’s Gender-Related Measures: Some Conceptual Problems and Possible Solutions.” *Journal of Human Development* 7(2): 243-274 (2006). |
| **Units -3: Theories of Gender and Development.** Theoretical Frameworks on Gender and Development | Jacquette J. S. Summerfield G., Fortmann L. and Staudt K., (2006), *Women, Gender Equity in Development Theory and Practice: Institutions, Resources and Mobilisation*  Mayoux, Linda (1997, 2004, 2005) “Women’s empowerment through sustainable microfinance economic growth”  Monsen J., (2003), *Gender and Development,* Routledge  Moser, Caroline (1993) *Gender Planning and Development: Theory, Planning and Training*. London: Routledge |
| **Unit-4: Valuing Women’s Work.**  Market and non-market production; Biases in income accounting; Approaches to measuring non-market work; Time use issues | UNDP, “Valuing women’s work” (Chapter 4) in *Human Development Report*, UNDP, New York, 1995.\*  Campillo F, “Unpaid household labor: a conceptual approach” (Chapter 6) in M Gutiérrez (ed) *Macro-Economics: Making Gender Matter*, Zed Books, London, 2003.\*  Sikoska T, “Measurement and valuation of unpaid household production: a methodological contribution” (Chapter 7) in M Gutiérrez (ed) *Macro-Economics: Making Gender Matter*, Zed Books, London, 2003.\*  Benería L, “Paid and unpaid labor: meaning and debates” (Chapter 5) in *Gender, Development and Globalization*, Routledge, London, 2003.  OECD. 1995. Household Production in OECD Countries.\* |
| **Unit-5: Modelling household decision making and the consequences of gender bias;**  Household as an economic unit; Approaches to modelling household decisions: unitary versus bargaining approaches; Fertility decisions; Investment models versus bargaining models; Time allocation decisions; Causes of the sexual division of labor**;** Optimality of sexual division of labor? Distortion imposed by gender bias in education and employment; Externalities of gender gaps: fertility, health, education, and spending decisions | Becker, G (1990) Treatise on the Family, ch. 2\*, 5, 8  Sen, A. 1990. Gender and Cooperative Conflicts in Tinker I. (ed.) Persistent Inequalities\*  Galor and Weil (1996): The Gender Gap, Fertility, and Growth. American Economic Review  Lagerlöf, NP: Gender Equality and Long-Run Growth *Journal of Economic Growth 8*, 2003, pp. 403-426.\*  Klasen S, “Low schooling for girls, slower growth for all? Cross-country evidence on the effect of gender inequality in education on economic development”, *The World Bank Economic Review* 2002, 16, 345-373.\* |

**Further Readings**

Mayoux, Linda (1997, 2004, 2005) “Women’s empowerment through sustainable microfinance economic growth”

Monsen J., (2003), *Gender and Development,* Routledge

Moser, Caroline (1993) *Gender Planning and Development: Theory, Planning and Training*. London: Routledge (available).

**Mode of Delivery**

The mode of the delivery of the course combines lectures, discussion, questioning and answering, readings, assignments, individual and /or group works and presentation.

**ASSESSMENT METHODS**

Evaluation will be carried out based on continuous assessment which comprises:

* Individual presentation
* Group presentation
* Term paper
* Final exam

**Course 4.** Value Chain Analysis & Management

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Course Title** | **Value Chain Analysis & Management** | | | | |
| **Course Code** | Rdmt 6033 | | | | |
| **M.Sc. Program** | Rural Development Management | | | | |
| **Module Name** | Development Management | | | | |
| **Module No.** | 03 | | | | |
| **Cr. Hr.** | **2** | | | | |
| **Workload** | **Lecture** | **Project Assignment** | **Tutorial** | **Home Study** | **CP** |
| **28** | **0** | **8** | **99** | **4** |
| **Target Group:** | M.Sc. in Rural Development Management (First Year) | | | | |
| **Year /Semester** | Year 1 & Semester 1 | | | | |
| **Pre-requisites** |  | | | | |
| **Status of the course** | **Elective** | | | | |

**COURSE DESCRIPTION**

This course shows how the smallholder farmers can earn more from their crops and livestock by taking control of the value chain they are part of – chains that link them with consumers in towns and cities in the vicinity, as well as in other parts of the country. The course describes two basic strategies that group of farmers can use to improve their incomes: vertical and horizontal integration. Vertical integration means taking on additional activities in the value chain: processing or grading produce, for example. Horizontal integration means becoming more involved in managing the value chain itself – by farmers’ improving their access to and management of information, their knowledge of the market, their control over contracts, or their cooperation with other actors in the chain.

***Upon Successful completion of this course, students will be able to:***

* Describe essential value chain concepts and provide methodologies for chain analysis;
* Differentiate value chain from supply chain and demand chain
* Assess the scope for the chain to act collaboratively to create competitive advantage through both product and process innovation and improved environmental management.
* Evaluate the preparedness of chain to create, realize and distribute value effectively

**Course Outline, and Suggested Readings**

|  |  |
| --- | --- |
| **Outline** | **Reference** |
| **Unit – 1: Introduction:** Market Liberalization and integration; The rise of processors and retailers; Declining government involvement in agriculture and rural areas; The challenge of smallholder producers; Principles of empowering smallholders. | KIT, Faida, IIRR, 2006. *Chain Empowerment: Supporting African Farmers to DevelopMarkets*, Royal Tropical Institute (KIT), Faida Market Link Company Ltd, International Institute of Rural Reconstruction, Nairobi. (This book shows other useful resources, and websites on value chain).  Kaplinksky, R., and M. Morris, 2000. *A handbook for value chain research,* International Development Research Centre, Ottawa. ([www.ids.ac.uk/ids/global/pdfs/VchNov01.pdf](http://www.ids.ac.uk/ids/global/pdfs/VchNov01.pdf))  Agricultural and Food Council of Alberta, 2002. *Value chain handbook: New Strategies tocreate more rewarding positions in the marketplace,* AFCA, Edmonton.www1.agric.gov.ab.ca/vchandbook.pdf.  Agricultural and Food Council of Alberta. 2004. *Value Chain Guidebook: A Process forValue Chain Development.* AFCA, Edmonton (valuechain.pdf)  Humphrey, J. 2005. *Shaping Value chains for development: Global value chain fordevelopment:* Global values chains in agribusiness. |
| **Unit – 2: Concepts and Definitions:** Stages of the value chain; Cost components; Value benefits and costs; and Value chain indicators; Supply Chains; Supply Chain Vs Value Chains; The basic model of Porters Value Chain; | KIT, Faida, IIRR, 2006. *Chain Empowerment: Supporting African Farmers to DevelopMarkets*, Royal Tropical Institute (KIT), Faida Market Link Company Ltd, International Institute of Rural Reconstruction, Nairobi. (This book shows other useful resources, and websites on value chain).  Kaplinksky, R., and M. Morris, 2000. *A handbook for value chain research,* International Development Research Centre, Ottawa. ([www.ids.ac.uk/ids/global/pdfs/VchNov01.pdf](http://www.ids.ac.uk/ids/global/pdfs/VchNov01.pdf))  Agricultural and Food Council of Alberta, 2002. *Value chain handbook: New Strategies tocreate more rewarding positions in the marketplace,* AFCA, Edmonton.www1.agric.gov.ab.ca/vchandbook.pdf.  Agricultural and Food Council of Alberta. 2004. *Value Chain Guidebook: A Process forValue Chain Development.* AFCA, Edmonton (valuechain.pdf)  Humphrey, J. 2005. *Shaping Value chains for development: Global value chain fordevelopment:* Global values chains in agribusiness. |
| **Unit – 3: Pro-poor value chain development:** Strategies for chain development with small-scale farmers; Components of chain interventions; Intervention Strategies. Product-oriented and market-oriented enterprises | KIT, Faida, IIRR, 2006. *Chain Empowerment: Supporting African Farmers to DevelopMarkets*, Royal Tropical Institute (KIT), Faida Market Link Company Ltd, International Institute of Rural Reconstruction, Nairobi. (This book shows other useful resources, and websites on value chain).  Kaplinksky, R., and M. Morris, 2000. *A handbook for value chain research,* International Development Research Centre, Ottawa. ([www.ids.ac.uk/ids/global/pdfs/VchNov01.pdf](http://www.ids.ac.uk/ids/global/pdfs/VchNov01.pdf))  Agricultural and Food Council of Alberta, 2002. *Value chain handbook: New Strategies tocreate more rewarding positions in the marketplace,* AFCA, Edmonton.www1.agric.gov.ab.ca/vchandbook.pdf.  Agricultural and Food Council of Alberta. 2004. *Value Chain Guidebook: A Process forValue Chain Development.* AFCA, Edmonton (valuechain.pdf)  Humphrey, J. 2005. *Shaping Value chains for development: Global value chain fordevelopment:* Global values chains in agribusiness. |
| **Unit – 4: Chain actors:** Chain partners; Chain activity integrators; Chain co-owners; Strategies for chain empowerment: Upgrading as a chain actor; Developing chain partnerships; Adding value through vertical integration; Developing co-ownership over the chain. | KIT, Faida, IIRR, 2006. *Chain Empowerment: Supporting African Farmers to DevelopMarkets*, Royal Tropical Institute (KIT), Faida Market Link Company Ltd, International Institute of Rural Reconstruction, Nairobi. (This book shows other useful resources, and websites on value chain).  Kaplinksky, R., and M. Morris, 2000. *A handbook for value chain research,* International Development Research Centre, Ottawa. ([www.ids.ac.uk/ids/global/pdfs/VchNov01.pdf](http://www.ids.ac.uk/ids/global/pdfs/VchNov01.pdf)) |
| **Unit – 5: Facilitating Chain Development:** Chain mapping and assessment; Chain engagement; Chain development; Chain monitoring & evaluation; Chain learning & innovation. | KIT, Faida, IIRR, 2006. *Chain Empowerment: Supporting African Farmers to DevelopMarkets*, Royal Tropical Institute (KIT), Faida Market Link Company Ltd, International Institute of Rural Reconstruction, Nairobi. (This book shows other useful resources, and websites on value chain).  Kaplinksky, R., and M. Morris, 2000. *A handbook for value chain research,* International Development Research Centre, Ottawa. ([www.ids.ac.uk/ids/global/pdfs/VchNov01.pdf](http://www.ids.ac.uk/ids/global/pdfs/VchNov01.pdf))  Agricultural and Food Council of Alberta. 2004. *Value Chain Guidebook: A Process forValue Chain Development.* AFCA, Edmonton (valuechain.pdf)  Humphrey, J. 2005. *Shaping Value chains for development: Global value chain fordevelopment:* Global values chains in agribusiness. |

**Further Readings**

Albu, M., and A. Scott.2001.*Understanding livelihoods that involve micro –enterprises: Markets and technological capacities in the SL framework.* ITDG, Bourton, Warwickshire, UK. (Micro-Enterprise-Livelihoods.pdf)

Bijman, W.J.J. 2002.*Essays on agricultural co-operatives: Governance structure in fruit and vegetable chains,* PhD thesis, Rotterdam School ofManagement, Erasmus University Rotterdam.

Blowfield, M. 2001. *Value Chains.*Resource Centre for the Social Dimensions of Business Practice / Business Poverty Database pdf.

Charter, M A. Kielkiewicz-Young, A. Young, and A. Hughes. 2001. Supply Chain Strategy and evaluation: Case Studies, Centre for SustainableDesign, Farbham, Surrey, UK. ([www.projectsigma.com/RnDStreams/RD\_supply\_chain\_case.pdf](http://www.projectsigma.com/RnDStreams/RD_supply_chain_case.pdf).)

Gereffi, G., and R Kaplinsky (eds.) 2001.*The value of value chains: Spreading the gains from globalization.* IDS Bulletin 32(3).

Ostertag Galvez, C.F. 1999. Identifying and assessing market opportunities for small-scale rural producers. Tools\_for decision\_making.pdf.

IFAMA, International Food and Agribusiness Management Association ([www.ifama.org](http://www.ifama.org))

Woods, E.J. 2005. Supply Chain management: Understanding the concept and its implications in developing countries. ([www.linkfarmerswithmarkets.net/fridge/WoodsSCM.pdf](http://www.linkfarmerswithmarkets.net/fridge/WoodsSCM.pdf))

**Mode of Delivery**

The mode of the delivery of the course combines lectures, discussion, questioning and answering, readings, assignments, individual and /or group works and presentation.

**ASSESSMENT METHODS**

Evaluation will be carried out based on continuous assessment which comprises:

* Individual presentation
* Group presentation
* Term paper
* Final exam

1. **DEPARTMENT: FORESTRY**

**Program:** Forest Management and Climate Change

## Course 1: Applied Remote Sensing and GIS

**Course Code: FMCC512**

**Credit Hours: 3**

**Course Description: Introduction to remote sensing**: definition, fundamental considerations of electromagnetic radiation; Sensors: satellite characteristics, land observation satellites and image access, Obtaining satellite Imagery; **Introduction to GIS** (Concepts, Methodologies, Tools, and Applications); Geographic data: geographic feature types, data types (spatial and non-spatial), data formats (raster, vector), geographic data source, uncertainties of data; Spatial referencing and satellite based positioning: coordinate systems, coordinate transformation, GPS (principle, setting datum and reference systems, considerations in use of GPS); **Data collection using GPS**, mobile phones using (ODK), Integrating GPS data into GIS, GIS Data sources and types for forestry, Geo database creation and maintenance for forest resources, Satellite Image processing and calibration for forest resource management, unsupervised and supervised classification of forest cover classification, accuracy assessment and ground truthing technique, forest Land use change detection maps, **Mapping Forest inventory** (Inventory of forest Land, mapping habitat and species, forest recreation sites, forest vegetation type, plantations and zonal mapping, forest water resources, Carbon mapping techniques, endangered species management), Using RS and GIS in developing forest management plans, planning and scheduling of harvesting and tree planting, determinations of forest stand conditions and forest health, estimation of biomass and productivity, environment impact assessment, Identifying sites for eco-restoration, damage assessment (fire, disease), Vegetation index analysis, Monitoring emergencies), **Application of RS/GIS for forest information systems** (forest geospatial information: information related to forest resources, uses of forest information, organizational involvement in collection and dissemination of forestry information, assessing the current users; evaluating existing national / regional / project level forest related information/data; The process of developing a sustainable GIS (with emphasis to forestry application); GIS partnerships in forestry (local and national levels): importance of sharing geospatial data, concepts and components for data sharing; Spatial Data Infrastructure (SDI): different concepts of SDI (experiences of other countries), contextualization of SDI to Ethiopian conditions (as applied in forestry), geospatial data discovery and access, SDI Standards; Geospatial partnership - policy and planning: policies and practices, opportunities, agreements to implement the SDI, Geospatial data and national security; Practical: analysis of the forest information situation in Ethiopia and design of FIS, application of SDI.

**Exam:** Continuous assessment, practical works, written examination, oral presentations, group or individual works of term papers, assignments and lab reports.

## 

## Course 2: Forest Carbon Inventory and Monitoring

**Course Code: FMCC522**

**Credit Hours: 2**

**Course Description:** The concepts of carbon sequestration, biological carbon sinks, dissolved organic matter (DOM), dissolved organic carbon (DOC), labile and recalcitrant carbon, factors affecting forest carbon, Aboveground Carbon Pools, Aboveground Carbon Fluxes, Belowground Carbon Pools and Fluxes, and supplemental variables for carbon cycle modeling, integrating field measurements with remote sensing data and flux measurements, Measuring Aboveground Carbon Pools (Estimating aboveground carbon in live and standing dead trees, estimating the carbon in coarse woody debris), Measuring Aboveground Carbon Fluxes (Measuring Litterfall, methods for estimating litter decomposition and measuring decomposition of deadwood), Measuring Belowground Carbon Pools and Fluxes (Measuring forest floor, mineral soil and root carbon stocks, measurement of DOC and quantifying soil respiration), potential methods of measuring root distributions, lengths, biomass and soil nutrient dynamics, challenges in root measurement and root carbon estimation. Using and developing allometric equations to estimate biomass and carbon content.

**Exam:** Continuous assessment, practical works, written examination, oral presentations, group or individual works of term papers, field and laboratory reports.

## Course 3: Sustainable Forest Protection, Management and Ecosystem Services

**Course Code: FMCC526**

**Credit Hours: 3**

**Course Description:** Concepts of sustainable forest management (SFM), national forest programs (NFP) and sustainable forest management, NFP framework (policies and strategies, legislations, institutional framework, enabling factors (information, communication and research, capacity and financial arrangements); The characteristics, functions, values and attributes of natural capital, Economic, ecological, and social perspectives of SFM; Principles/components of SFM; Criteria and indicators of SFM; Strategies for sustainable forest management (governance-based, ecosystem approaches, silvicultural approaches); Stakeholders/actors of sustainable forest management; Challenges of SFM, Forest Entomology and pathology in a changing climate (the role and impacts of insects and diseases in forest ecosystems, maintenance of forest ecosystem health and vitality; the effects of environmental stress on forest insects and diseases and developing long-term strategies to control forest pests in SFM), management of forest fire, Forest Ecosystem goods and services, Assessment of Forest Ecosystem services.

**Exam:** Continuous assessment, practical works, written examination, oral presentations, group or individual works of term papers and field reports or assignments.

## 

## Course 4: Agroforestry, Forestry innovations and Extension

**Course Code: FMCC528**

**Credit Hours: 2**

**Course Description: Concepts in Agroforestry**, Silvicultural systems in Agroforestry and their Management, Nutrient Dynamics in Agroforestry systems, Soil and water management in Agroforestry; Hydrology & Water use in Agroforestry, Agroforestry and climate smart agriculture, Role of Agroforestry to climate change mitigation and adaptation, Ecological and Physiological aspects of Agroforestry; high value fruit trees in Agroforestry; Fodder and Pasture Development in Agroforestry, Environment and Productivity in Agroforestry Systems, **Principles of** Agroforestry research (exploratory/diagnostic studies, agroforestry research from screening to scaling); Systems understanding/ diagnosis and prioritization of issues at d/t scale, Characterization of Agroforestry practices, Empirical research in Agroforestry, Action research in Agroforestry, Approaches to scaling/extension of Agroforestry innovations, Documentation of processes, successes and failures of Agroforestry practices/ technologies, Production of various communication tools/materials/guides, Challenges for Agroforestry research and development, review of current forestry/ agroforestry extension approaches- drawbacks and strengths, Functions of Forestry/Agroforestry extension; Planning Forestry/ agroforestry Extension Program, Adoption of Appropriate Extension Strategy, Approaches of forestry/agroforestry extension program (top-down, Bottom-up approach or Participatory Approach);**Program Planning Process (Policy and resource analysis, Assessment of needs/analyze clientele behavior, Formulation of objectives, Designing of program/project plan, Implementation of program and Evaluation of results/outcomes); Enhancing Institutional Capacity; Development Support Communication, issues in forestry extension (Institutional, Technical and policy, Capacity building and Financial and economic issues); Audio-Visual AIDS, individual and group extension methods; mass extension methods, extension campaign.**

**Exam:** Continuous assessment, practical works, written examination, oral presentations, group or individual works of term papers, field reports and assignments.

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## Course 5: Forest Landscape planning

**Course Code: FMCC532**

**Credit Hours: 2**

**Course Description:** Ecological Planning Method, Steps in landscape planning,inventory and analysis of the biophysical environment, landscape plans, landscape plan and design implementation of a landscape,administration of Planning programs,Landscape Ecology and Forest Management, Managing Forest Landscapes under Global Change Scenarios, Landscape Ecology Contributions to Forestry and Forest Management lessons from different countries, Research needs for forest landscape management, Modeling Disturbance and Succession in Forest Landscapes, Practicing Sustainable Forest Landscape Management.

**Exam:** Continuous assessment, written examination, oral presentations, group or individual works of term papers, field reports, GIS lab works, Practicing the restoration opportunity assessment methodology (ROAM) by IUCN and the World Resource Institute’s Landscape Restoration Diagnostic and assignments.