**Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore**
**Shri Vaishnav Institute of Agriculture**
**Ph.D. (Ag.) Agricultural Economics, I semester**

## A.1. Research Methodology (PHDA 101)

| Course code | Course Name | TEACHING & EVALUATION SCHEME | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | THEORY | | | PRACTICAL | | L | P | CREDITS |
| | | END SEM University Exam | Mid Term Exam | Teachers Assessment* | END SEM University Exam | Teacher's Assessment* | | | |
| PHDA 101 | Research Methodology | 60 | - | 40 | 0 | 0 | 3 | 0 | 3 |

**Legends: L -** Lecture**; P –** Practical;

*Teacher Assessment shall be based on following components: Quiz / Assignment / Project / Participation in Class.

## A1. Research Methodology (PHDA 101)

**Module 1:** Introduction to Research Methods: Role and objectives of research, types of research and various research design (exploratory, descriptive, experimental and diagnostic research), research process: Overview, Problems encountered by researcher. Experimental research design will comprise of Completely Randomized Design, Latin Square Design and Factorial Design. Limitations of RM: Ethics in Research, Philosophical issues in Research.

**Module 2**: Data and their Collection: Collection, Organization, Presentation, Analysis and Interrelation of Primary and Secondary Data. Measurement in research, measurement scales, sources of errors in measurement, Techniques of developing measurement tools, classification and testing (reliability, verification and validity) scales, Designing questionnaires and interviews Sampling , Sampling Methods, Sampling Plans, Sampling Error, Sampling Distributions : Theory and Design of Sample Survey, Census Vs Sample Enumerations, Objectives and Principles of Sampling, Types of Sampling, Sampling and Non-Sampling Errors.

**Module 3:** Numerical Methods and Statistical Analysis Curve fitting (least square), solution of polynomial equation, numerical integration (Trapezoidal rule, Simpson's rule, Gaussian quadrature), solution of ordinary differential equations (Euler's method, Runge-Kutta method, predictor-corrector method), matrix multiplication, inversion and diagonalization.

**References**


- Kumar, R.(2006).Research Methodology-A Step- By- Step Guide for Beginners, Delhi: Pearson Education.
- Montgomery, D. C. (2007).Design & Analysis of Experiments. India: Wiley.
- Kothari, C. R. (2004). Research Methodology: Methods and Techniques. New Delhi: New Age International.


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## A.2. Review of Literature (PHDA 102)

| Course code | Course Name | TEACHING & EVALUATION SCHEME | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | THEORY | | | PRACTICAL | | L | P | CREDITS |
| | | SEM END University Exam | Term Mid Exam | Teachers Assessment* | SEM END University Exam | Teacher's Assessment* | | | |
| PHDA 102 | Review of Literature | 60 | - | 40 | 0 | 0 | 2 | 0 | 2 |

**Legends: L -** Lecture**; P –** Practical

*Teacher Assessment shall be based on following components: Quiz / Assignment / Project / Participation in Class.

## A2. Review of Literature (PHDA102)

**Course Overview:** The objective of this course is to help the candidate to comprehend his/her broad field of research and be academically sound to carry out his research work. Understand the basic philosophical assumptions underlying research literature reviews for different purposes, including what, why, when, for whom, and how? Be able to manage the process of conducting a literature review, including reading, note taking strategies, coding/reference management, synthesizing and writing literature results. Be able to write a quality literature review with variations in references

**Course Content**

**Module 1:** Understanding Review of literature: Relevance, Approach and Applications; Developing an outline for the literature review; Formulate key questions for a review. Organizing a literature search: Identify which literature bases to search; Developing the theoretical basis for the Research Question; Searching for, locating and organizing relevant professional literature

**Module 2:** Conducting the Review: Abstract relevant information from appropriate studies in a systematic manner; critically reviewing the literature; Rate the scientific quality of each study and the level of evidence for each question.

**Module 3:** Synthesizing the Review: Create evidence tables and summary tables; interpret the pattern of evidence in terms of strength and consistency; Summarize the studies' findings. Writing the review: Writing a first draft; Writing references and citations; Obtaining, giving, and making productive use of feedback; the redrafting process; Professional formatting.

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## A.3. Computer Applications (PHDA 103)

| | | TEACHING & EVALUATION SCHEME | | | | |
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| | | THEORY | PRACTICAL | | | C R |

| Course code | Course Name | END SEM University Exam | Mid Term Exam | Teachers Assessment* | END SEM University Exam | Teacher's Assessment* | L | P | |
|---|---|---|---|---|---|---|---|---|---|
| PHDA 103 | Computer Applications | 60 | - | 40 | 0 | 0 | 2 | 0 | 2 |

**Legends: L -** Lecture**; P –** Practical

***Teacher Assessment shall be based on following components: Quiz / Assignment / Project / Participation in Class.

**Course Overview:** *The candidate should gain sufficient practical knowledge for use of computer and computer software for use in research work.*

### A.3. Computer Applications (PHDA 103)

**Module 1**: Basic knowledge of application softwares in MS- Office with focus on MS-Word- its features and applications related to presentation of text in decent format and saving the same for further use. The practical knowledge of this software should enable the candidate to type and prepare the thesis in a presentable format.MS-Excel- construction of worksheet and inserting data according to its characteristics, use of statistical tools and their presentation in the form of charts and graphs.

**Module 2:** Use of Internet for research work and exploring various websites and search engines for collecting quality literature review and secondary data etc. related to thesis work.

**Module 3**: MS- Power point – create power point presentation on a topic related to the theme of thesis and use of different presentation techniques. Use of SPSS – method of preparing data sheet and entering data according to its characteristics, use of various statistical tools on SPSS.

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### A.4. Research and Publication Ethics (PHDA 104)

| Course code | Course Name | TEACHING & EVALUATION SCHEME | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | THEORY | | | PRACTICAL | | L | P | CREDITS |
| | | END SEM University Exam | Mid Term Exam | Teachers Assessment* | END SEM University Exam | Teacher's Assessment* | | | |
| PHDA 104 | Research and Publication Ethics | 60 | - | 40 | 0 | 0 | 2 | 0 | 2 |

**1. Legends: L -** Lecture**; P –** Practical

**2. ***Teacher Assessment shall be based on following components: Quiz / Assignment / Project / Participation in Class.

## A.4.Research and Publication Ethics (PHDA 104)

**Module 1: Philosophy And Ethics-**Introduction to philosophy: definition, nature and scope, concept, branches. Ethics: definition, moral philosophy, nature of moral judgments and reactions.

**Scientific Conduct-** Ethics with respect to science and research. Intellectual honesty and research integrity. Scientific misconducts: Falsification, Fabrication, and Plagiarism (FFP).Redundant publications: duplicate and overlapping publications, salami slicing. Selective reporting and misrepresentation of data

**Module 2: Publication Ethics-**Publication ethics: Definition, introduction and importance.

Best practices / standards setting initiatives and guidelines: COPE, WAME, etc. Conflicts of interest. Publication misconduct: definition, concept, problems that lead to unethical behavior and vice versa, types. Violation of publication ethics, authorship and contributor ship. Identification of publication misconduct, complaints and appeals. Predatory publishers and journals.

**Open Access Publishing-** Open access publications and initiatives. SHERPA/RoMEO online resource to check publisher copyright & self-archiving policies. Software tool to identify predatory publications developed by SPPU. Journal finder / journal suggestion tools viz. JANE, Elsevier Journal Finder, Springer Journal Suggested, etc.

**Module 3: Publication Misconduct, Group Discussions-**Subject specific ethical issues, FFP, authorship. Conflicts of interest. Complaints and appeals: examples and fraud from India and abroad. Software tools- Use of plagiarism software like Tumitin, Urkund And Other Open Source Software Tools. Data Bases and Research Metrics, Databases- Indexing databases Citation databases: Web of Science, Scopus, etc. Research Metrics- Impact Factor of journal as per Journal Citation Report, SNIP, SIR, IPP, Cite Score. Metrics: h-index, g index, i10 index, altimetric.

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**PHDAEC 601: Advanced Microeconomic Analysis (1+1)**

| Course code | Course Name | TEACHING & EVALUATION SCHEME | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | THEORY | | | PRACTICAL | | L | P | CREDITS |
| | | END SEM University Exam | Mid Term Exam | Teachers Assessment* | END SEM University Exam | Teacher's Assessment* | | | |
| PHDAEC 601 | Advanced Microeconomic Analysis | 60 | 00 | 40 | 30 | 20 | 1 | 1 | 2 |

**Legends: L** - Lecture; **P** – Practical;

*Teacher Assessment shall be based on following components: Quiz / Assignment / Project / Participation in Class.

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**Objectives:**

The course aims at providing the knowledge and command over analysis of data collected to get the desired result. Train the student in use of econometric models.

**Theory:**

**UNIT I: Consumer Theory**

Theory of consumer behavior – Duality in consumer theory - eXpenditure function and indirect utility function - Measurement of Income Effect and Substitution Effect. Measurement of Changes in Consumers' Welfare – Consumer's Surplus, Compensating Variation and Equivalent Variation - Dynamic versions of demand functions – Integrability of demand functions. Demand Models – Linear EXpenditure System, Almost Ideal Demand System. Applications of consumer theory – Household model and time allocation – Labour supply decisions by households.

**UNIT II: Market**

Perfect competition – Monopoly, monopolistic competition and oligopoly. Oligopoly models – collusive and non-collusive models of oligopoly - Cournot model, Chamberlin model, Stackleberg solution.

**UNIT III: General Equilibrium**

General equilibrium theory – Conceptual overview - General equilibrium conditions with Production and Consumption. EXistence, Uniqueness and Stability of general competitive equilibrium. Walrasian general equilibrium – Mathematical derivation of conditions for general equilibrium.

**UNIT IV: Market failure**

Market failure - Incomplete markets - Asymmetric information – Principal-Agent problem, adverse selection and moral hazard. EXternalities – Network eXternalities, Public goods – Optimal provision of public goods.

**UNIT V: Welfare Economics**

Welfare Economics - Concepts, problems, approaches and limitations of Welfare Economics, Pareto conditions of maXimum welfare – Criteria for social welfare - Social Welfare functions, Social versus Private costs and benefits.

**Practical**

- Problems in consumer utility maXimization
- Estimation of income and substitution effects;
- Estimation and comparison of Consumer's surplus, equivalent variation and compensating variation.
- Estimation of demand models – Derivation and estimation of labour supply equations from household models comparative static analysis in consumption.
- Advanced problem solving in price determination under perfect competition, monopoly, oligopoly and monopolistic competition.
- Game theory models.
- Problems solving in General Equilibrium Theory and Welfare Economics.
- Problems in public goods provision.

**Suggested Reading:**


- Henderson JM and Quandt RE. *Microeconomic Theory: A Mathematical Approach* Tata McGraw Hill Publishing Co Ltd
- Koutsoyiannis A. *Modern Micro Economics.* Macmillan Press Ltd
- Ferguson and Gould. *Micro Economic Theory.* Richard D Erwin Inc USA

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**PHDAEC 603: Advanced Econometrics (2+1)**

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|---|---|---|---|---|---|---|---|---|---|
| | | THEORY | | | PRACTICAL | | L | P | CREDITS |
| | | END SEM University Exam | Mid Term Exam | Teachers Assessment* | END SEM University Exam | Teacher's Assessment* | | | |
| PHDAEC 603 | Advanced Econometrics | 60 | 00 | 40 | 30 | 20 | 2 | 1 | 3 |

**Legends: L** - Lecture; **P** – Practical;

*Teacher Assessment shall be based on following components: Quiz / Assignment / Project / Participation in Class etc.

**Objective**

To acquaint the students about the basics of dynamics of agricultural marketing.

**Theory:**

**UNIT I: Review**

Review of classical regression model – review of hypothesis testing – restrictions on parameters – single equation techniques.

**UNIT II: Concept of least squares**

Ordinary least squares – weighted least squares - generalized least squares –method of principal components – instrumental variables method – maximum likelihood method - errors in variables, non-linearity and specification tests – nonspherical error terms.

**UNIT III: Dummy Variable**

Dummy variables - Qualitative and truncated dependent variables - limited dependent variables –LPM, probit and logit models, their multinomial extensions.

**UNIT IV: Models and their extensions**

Autoregressive distributed lag models – panel data fixed and random effects models and their extensions.

**UNIT V: Simultaneous equation models**

Simultaneous equation methods –identification – estimation by indirect least squares 2SLS, PIML, SURE, 3SLS

**Practical**

- Estimation of multiple regression model
- GLS estimation methods - testing misspecification errors
- Testing and Managing multicollinearity, heteroscedasticity and autocorrelation
- Estimation of LPM, Logit and Probit models - comparing two regressions - Chow test
- Estimation of distributed lag models – panel data random and fixed effects models

- Indirect least squares 2SLS, SURE, 3SLS, estimation of simultaneous equation models.

**Suggested Reading:**

- Greene WH. 2002. *Econometric Analysis*. Pearson Education.
- Johnston J and Dinardo J. 2000. *Econometric Methods*. Mc Graw-Hill.
- Koutseyianis A. 1997. *Theory of Econometrics*. Barner & Noble

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