M. Sc. Ag. (Hort.) Fruit Science Course Structure

Course code	Type	Course title	Min credits	CIA	ESE	Max. Marks
IST YEAR / IST SEM						
FSC 501	Core	Tropical Fruit Production	2+1	50	50	100
FSC 502	Core	Sub-Tropical and Temperate Fruit Production	2+1	50	50	100
VSC 501	Minor	Production of Cool Season Vegetable Crops	2+1	50	50	100
SAC 502	Supporting	Soil Fertility and Fertilizer Use	2+1	50	50	100
PGS 501	Compulsory Non-Credit	Library and Information Services (MOOC)	0+1	50	50	100
PGS 502	Compulsory Non-Credit	Technical Writing and Communication Skills (MOOC)	0+1	50	50	100
TOTAL			**14**			**600**
IST YEAR / IIND SEM						
FSC 503	Core	Propagation and Nursery Management of Fruit Crops	2+1	50	50	100
FSC 504	Core	Breeding of Fruit Crops	2+1	50	50	100
PPTH 507	Minor	Principles of Plant Disease Management	2+1	50	50	100
STAT 511	Supporting	Experimental Designs	2+1	50	50	100
PGS 503	Compulsory Non-Credit	Intellectual Property and Its Management in Agriculture (MOOC)	1+0	50	50	100
PGS 504	Compulsory Non-Credit	Basic Concepts in Laboratory Techniques (MOOC)	0+1	50	50	100
TOTAL			**14**			**600**
IIND YEAR / IIIRD SEM						
FSC 506	Core	Canopy Management in Fruit Crops	1+1	50	50	100
FSC 508	Core	Nutrition of Fruit Crops	2+1	50	50	100
FSC 513	Core	Minor Fruit Production	2+1	50	50	100
FLS 512	Minor	Seed Production in Flower Crops	1+1	50	50	100
PGS 505	Compulsory Non-Credit	Agricultural Research, Research Ethics and Rural Development Programmes	1+0	50	50	100
FST 560	Research	Master's Research (Thesis/Dissertation)	10	-	-	S
TOTAL			**21**			**500**
IIND YEAR / IVTH SEM						
FSC 550	Seminar	Master's Course Seminar	0+1	-	-	100
FST 560	Research	Master's Research (Thesis/Dissertation) Thesis Report Viva-Voce Examination	20+0			
TOTAL			**21**			**S**
GRAND TOTAL			**70**			**1800**

14.07.23 14/07/2023 14/07/23 14/7/23

First Semester

M. Sc. Ag. (Hort.) Fruit Science Course Structure

FSC 501: TROPICAL FRUIT PRODUCTION **3(2+1)**

THEORY

Block 1: Introduction: Importance and Background: Importance, origin and distribution, major species, rootstocks and commercial varieties of regional, national and international importance, eco-physiological requirements.

Block 2: Agro-Techniques: Propagation, Planting and Orchard Floor Management: Asexual and sexual methods of propagation, planting systems and planting densities, training and pruning methods, rejuvenation, intercropping, nutrient management, water management, fertigation, use of biofertilizers, role of bio-regulators, abiotic factors limiting fruit production.

Block 3: Crop Management: Flowering, Fruit-Set and Harvesting: Physiology of flowering, pollination management, fruit set and development, physiological disorders - causes and remedies, crop regulation, quality improvement by management practices; maturity indices, harvesting, grading, packing, storage and ripening techniques; insect and disease management.

CROPS: Mango, Banana, Guava, Pineapple, Papaya, Avocado, Jackfruit, Annonas, Aonla and Ber

PRACTICALS

1. Distinguished features of tropical fruit species, cultivars and rootstocks
2. Demonstration of planting systems, training and pruning
3. Hands on practices on pollination and crop regulation
4. Leaf sampling and nutrient analysis
5. Physiological disorders-malady diagnosis
6. Physico-chemical analysis of fruit quality attributes
7. Field/Exposure visits to tropical orchards
8. Project preparation for establishing commercial orchards

FSC 502: SUBTROPICAL AND TEMPERATE FRUIT PRODUCTION **3(2+1)**

THEORY

Block 1: Introduction: Importance and Background: Origin, distribution and importance, major species, rootstocks and commercial varieties of regional, national and international importance, eco-physiological requirements.

Block 2: Agro-Techniques: Propagation, Planting and Orchard Floor Management: Propagation, planting systems and densities, training and pruning, rejuvenation and replanting, intercropping, nutrient management, water management, fertigation, use of bio-fertilizers, role of bio-regulators, abiotic factors limiting fruit production.

Block 3: Crop Management: Flowering, Fruit-Set and Harvesting: Physiology of flowering, pollination management, fruit set and development, physiological disorders- causes and remedies, crop regulation, quality improvement by management practices; maturity indices, harvesting, grading, packing, storage and ripening techniques; insect and disease management.

CROPS Citrus, Grapes, Litchi, Pomegranate, Apple, Pear, Peach, Plum, Apricot, Cherries, Berries, Persimmon, Kiwifruit, Nuts- Walnut, Almond and Pecan

PRACTICALS

1. Distinguished features of fruit species, cultivars and rootstocks
2. Demonstration of planting systems, training and pruning
3. Hands on practices on pollination and crop regulation
4. Leaf sampling and nutrient analysis
5. Physiological disorders-malady diagnosis
6. Physico-chemical analysis of fruit quality attributes
7. Field/Exposure visits to subtropical and temperate orchards
8. Project preparation for establishing commercial orchards

VSC 501: PRODUCTION OF COOL SEASON VEGETABLE CROPS (2+1)

THEORY

Introduction, commercial and nutritional importance, origin and distribution, botany and taxonomy, area, production, productivity and constraints, soil requirements, climatic factors for yield and quality, commercial

varieties/hybrids, seed rate and seed treatment, raising of nursery, sowing/planting time and methods, hydroponics and aeroponics, precision farming, cropping system, nutritional including micronutrients and irrigation requirements, intercultural operations, special horticultural practices, weed control, mulching, role of plant growth regulators, physiological disorders, maturity indices, harvesting, yield, post-harvest management (grading, packaging and marketing), pest and disease management and production economics of crops.

Unit I: Bulb and tuber crops- Onion, garlic and potato

Unit II: Cole crops- Cabbage, cauliflower, kohlrabi, broccoli, Brussels sprouts and kale

Unit III: Root crops- Carrot, radish, turnip and beetroot

Unit IV: Peas and beans- Garden peas and broad bean

Unit V: Leafy vegetables- beet leaf, fenugreek, coriander and lettuce.

PRACTICAL

1. Scientific raising of nursery and seed treatment
2. Sowing and transplanting
3. Description of commercial varieties and hybrids
4. Demonstration on methods of irrigation, fertilizers and micronutrients application
5. Mulching practices, weed management
6. Use of plant growth substances in cool season vegetable crops
7. Study of nutritional and physiological disorders
8. Studies on hydroponics, aeroponics and other soilless culture
9. Identification of important pest and diseases and their control
10. Preparation of cropping scheme for commercial farms
11. Visit to commercial farm, greenhouse/polyhouses
12. Visit to vegetable market
13. Analysis of benefit to cost ratio

SAC 502: SOIL FERTILITY AND FERTILIZER USE (3+1)

THEORY

UNIT I: Soil fertility and soil productivity; fertility status of major soils group of India; nutrient sources–fertilizers and manures; Criteria of essentiality, classification, law of minimum and maximum, essential plant nutrients - functions and deficiency symptoms, Nutrient uptake, nutrient interactions in soils and plants; long-term effect of manures and fertilizers on soil fertility and crop productivity;

UNIT II: Soil and fertilizer nitrogen-sources, forms, immobilization and mineralization, nitrification, denitrification; biological nitrogen fixation -types, mechanism, microorganisms and factors affecting; nitrogenous fertilizers and their fate in soils; management of fertilizer nitrogen in lowland and upland conditions for high fertilizer use efficiency.

UNIT III: Soil and fertilizer phosphorus-forms, immobilization, mineralization, reactionsin acid and alkali soils; factors affecting phosphorus availability in soils; phosphatic fertilizers - behaviour in soils and management under field conditions. Potassium - forms, equilibrium in soils and its agricultural significance; mechanism of potassium fixation; management of potassium fertilizers under field conditions.

UNIT V: Sulphur - source, forms, fertilizers and their behaviour in soils; role in crops and human health; calcium and magnesium– factors affecting theiravailability in soils; management of sulphur, calcium and magnesium fertilizers.

UNIT VI: Micronutrients: critical limits in soils and plants; factors affecting their availability and correction of their deficiencies in plants; role of chelates in nutrient availability.

UNIT VII: Common soil test methods for fertilizer recommendations; quantity–intensity relationships; soil test crop response correlations and response functions.

UNIT VIII: Fertilizer use efficiency; site-specific nutrient management; plant need basednutrient management; integrated nutrient management; speciality fertilizers concept, need and category. Current status of specialty fertilizers uses in soils and crops of India.

UNIT IX: Soil fertility evaluation - biological methods, soil, plant and tissue tests;soil quality in relation to sustainable agriculture, Determination of critical limit, DRIS.

UNIT X: Definition and concepts of soil health and soil quality; Long term effects of fertilizers and soil quality.

PRACTICALS

1. Soil and plant sampling and processing for chemical analysis
2. Determination of soil pH, total and organic carbon in soil
3. Chemical analysis of soil for total and available nutrients (major and micro)
4. Analysis of plants for essential elements (major and micro)

PGS 501 LIBRARY AND INFORMATION SERVICES **1(0+1)**

PRACTICAL

Introduction to library and its services; Role of libraries in education, research and technology transfer; Classification systems and organization of library; Sources of information- Primary Sources, Secondary Sources and Tertiary Sources; Intricacies of abstracting and indexing services (Science Citation Index, Biological Abstracts, Chemical Abstracts, CABI Abstracts, etc.); Tracing information from reference sources; Literature survey; Citation techniques/Preparation of bibliography; Use of CD-ROM Databases, Online Public Access

Catalogue and other computerized library services; Use of Internet including search engines andits resources; e-resources access methods.

PGS 502 TECHNICAL WRITING AND COMMUNICATIONS SKILLS (0+1)

PRACTICAL

Technical Writing-Various forms of scientific writings- theses, technical papers, reviews, manuals, etc; Various parts of thesis and research communications (title page, authorship contents page, preface, introduction, review of literature, material and methods, experimental results and discussion); Writing of abstracts, summaries, précis, citations etc.; commonly used abbreviations in the thesesand research communications; illustrations, photographs and drawings with suitable captions; pagination, numbering of tables and illustrations; Writing of numbers and dates in scientific write-ups; Editing and proof-reading; Writing of a review article. Communication Skills - Grammar (Tenses, parts of speech, clauses, punctuation marks); Error analysis (Common errors); Concord; Collocation; Phonetic symbols and transcription; Accentual pattern: Weak forms in connected speech: Participation in group discussion: Facing an interview; presentation of scientific papers.

Second Semester

FSC 503: PROPAGATION AND NURSERY MANAGEMENT OF FRUIT CROPS (2+1)

THEORY

Block 1: Introduction: General Concepts and Phenomena: Introduction, understanding cellular basis for propagation, sexual and asexual propagation, apomixis, polyembryony, chimeras. Factors influencing seed germination of fruit crops, dormancy, hormonal regulation of seedgermination and seedling growth. Seed quality, treatment, packing, storage, certification and testing.

Block 2: Propagation: UNIT I: Conventional Asexual Propagation: Cutting– methods, rooting of soft and hardwood cuttings under mist and hotbeds. Use of PGR in propagation, Physiological, anatomical and biochemical aspects of root induction in cuttings. Layering – principle and methods. Budding and grafting – principles and methods, establishment and management of bud wood bank. Stock, scion and inter stock relationship - graft incompatibility, physiology of rootstock and top working.

UNIT II: Micropropagation: Micro-propagation – principles and concepts, commercial exploitation in horticultural crops. Techniques - *in vitro* clonal propagation, direct organogenesis, embryogenesis, micrografting, meristem culture, genetic fidelity testing. Hardening, packaging and transport of micro-propagules.

Block 3: Nursery

UNIT I: Management Practices and Regulation: Nursery – types, structures, components, planning and layout. Nursery management practices for healthy propagule production. Nursery Act, nursery accreditation, import and

export of seeds and planting material andquarantine.

PRACTICALS

1. Hands on practices on rooting of dormant and summer cuttings
2. Anatomical studies in rooting of cutting and graft union
3. Hands on practices on various methods of budding and grafting
4. Propagation by layering and stooling
5. Micropropagation- explant preparation, media preparation, culturing – meristem tipculture, axillary bud culture, micro-grafting, hardening
6. Visit to commercial tissue culture laboratories and accredited nurseries

FSC 504: BREEDING OF FRUIT CROPS **3(2+1)**

THEORY

UNIT-I-Fruit crop breeding: History, importance of fruit breeding, centers of diversity, distribution, domestication and adaptation of commercially important fruits.

UNIT-II-Issues in fruit crop breeding: Heterozygosity, polyploidy, polyembryony,parthenocarpy and seed lessness, incompatibility & sterility systems.

UNIT-III Apomixis - merits & demerits, types, variability for economic traits, role of genetic engineering and biotechnology in improvement of fruit crops.

UNIT IV: Crop improvement in Mango, Banana, Citrus, Grapes, Papaya, Sapota and Pomegranate, Pine apple & Guava, Apple and other Rosaceous crops and region-specific fruit crops.

PRACTICALS

1. Germplasm documentation; Floral biology of mango, guava, citrus, grape, pomegranate, pollen viability in major fruit crops;

2. Pollen germination to study time of anthesis and stigma receptivity;

3. Hybridization technique in important fruit crops, hybrid seed collection andraising;

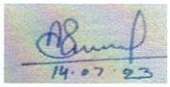
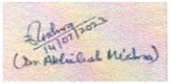
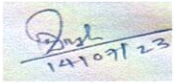
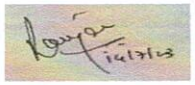
4. Colchicine treatment for induction of polyploidy;

5. Exposure to resistance breeding & screening techniques;

6. Mutation breeding practices raising and evaluation of segregating populations;

7. Use of mutagens to induce mutations and polyploidy,

8. Visit to Biotechnology Lab & study of in– vitro breeding techniques

PL PATH 507 PRINCIPLES OF PLANT DISEASE MANAGEMENT (2+1)

THEORY

UNIT I: Principles of plant disease management by cultural, physical, biological, chemical, organic amendments and botanicals methods of plant disease control, integrated control measures of plant diseases. Disease resistance and molecular approach for disease management.

UNIT II: History of fungicides, bactericides, antibiotics, concepts of pathogen, immobilization, chemical protection and chemotherapy, nature, properties and mode of action of antifungal, antibacterial and antiviral chemicals. Label claim of fungicides.

UNIT III: Application of chemicals on foliage, seed and soil, role of stickers, spreaders and other adjuvants, health *vis-a-vis* environmental hazards, residual effects and safety measures

PRACTICAL

Phytopathometry. Methods of *in-vitro* evaluation of chemicals, antibiotics, bio agents against plant pathogens. Field evaluation of chemicals, antibiotics, bio agents against plant pathogens. Soil solarisation, methods of soil fumigation under protected cultivation. Methods of application of chemicals and bio control agents. ED and MIC values, study of structural details of sprayers and dusters. Artificial epiphytotic and screening of resistance.

STAT511 EXPERIMENTAL DESIGNS **3(2+1)**

THEORY

UNIT I: Need for designing of experiments, characteristics of a good design. Basic principles of designs-randomization, replication and local control.

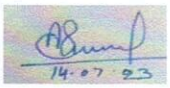
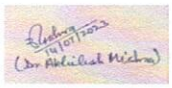
UNIT II: Uniformity trials, size and shape of plots and blocks, Analysis of variance, completely randomized design, randomized block design and Latin square design.

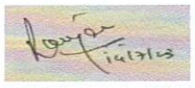
UNIT III: Factorial experiments, (symmetrical as well as asymmetrical). orthogonality and partitioning of degrees of freedom. Concept of confounding.

UNIT IV: Split plot and strip plot designs, analysis of covariance and missing plot techniques in randomized block and Latin square designs;Transformations, Balanced Incomplete Block Design, resolvable designs and their applications, Lattice design, alpha design - concepts, randomization procedure, analysis and interpretation of results. Response surfaces. Combined analysis.

PRACTICAL

Uniformity trial data analysis, formation of plots and blocks, Fairfield Smith Law, Analysis of data obtained from CRD, RBD, LSD, Analysis of factorial experiments; Analysis with missing data; Split plot and strip plot designs.




PGS 503 INTELLECTUAL PROPERTY AND ITS MANAGEMENT IN AGRICULTURE
1(1+0)

THEORY

Historical perspectives and need for the introduction of Intellectual Property Right regime; TRIPs and various provisions in TRIPS Agreement; Intellectual Property and Intellectual Property Rights (IPR), benefits of securing IPRs; Indian Legislations for the protection of various types of Intellectual Properties; Fundamentals of patents, copyrights, geographical indications, designs and layout, trade secrets and traditional knowledge, trademarks, protectionof plant varieties and farmers' rights and biodiversity protection; Protectable subject matters, protection in biotechnology, protection of other biological materials, ownership and period of protection; National Biodiversity protection initiatives; Convention on Biological Diversity; International Treaty on Plant Genetic Resources for Food and Agriculture; Licensing of technologies, Material transfer agreements, Research collaboration Agreement, License Agreement.

PGS 504 BASIC CONCEPTS IN LABORATORY TECHNIQUES **1(0+1)**

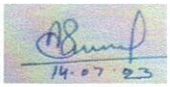
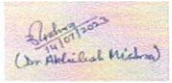
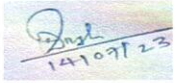
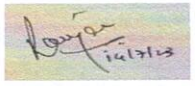
PRACTICAL

Safety measures while in Lab; Handling of chemical substances; Use of burettes, pipettes, measuring cylinders, flasks, separatory funnel, condensers, micropipettes and vaccupets; washing, drying and sterilization of glassware; Drying of solvents/chemicals. Weighing and preparation of solutions of different strengths and their dilution; Handling techniques of solutions; Preparation of different agro-chemical doses in field and pot applications; Preparationof solutions of acids; Neutralisation of acid and bases; Preparation of buffers of different strengths and pH values. Use and handling of microscope, laminar flow, vacuum pumps, viscometer, thermometer, magnetic stirrer, micro-ovens, incubators, sandbath, waterbath, oilbath; Electric wiring and earthing. Preparation of media and methods of sterilization; Seed viability testing, testing of pollen viability; Tissue culture of crop plants; Description of flowering plants in botanical terms in relation to taxonomy

Third Semester

SC 506: CANOPY MANAGEMENT OF FRUIT CROPS **(1+1)**

HEORY


Block 1: Canopy Architecture: Introduction, Types and Classification: Canopy management - importance and factors affecting canopy development. Canopy types and structures, canopy manipulation for optimum utilization of light and its interception. Spacing and utilization of land area - Canopy classification.

Block 2: Canopy Management: Physical Manipulation and Growth Regulation: Canopy management through rootstock and scion. Canopy management through plant growth regulators, training and pruning and management practices. Canopy development and management in relation to growth, flowering, fruiting and fruit quality.

PRACTICALS

1. Study of different types of canopies
2. Training of plants for different canopy types
3. Canopy development through pruning
4. Understanding bearing behaviour and canopy management in different fruits
5. Use of plant growth regulators
6. Geometry of planting
7. Development of effective canopy with support system
8. Study on effect of different canopy types on production and quality of fruits.

FSC 508: NUTRITION OF FRUIT CROPS **(2+1)**

THEORY

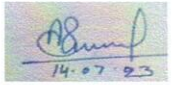
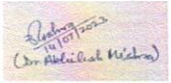
Block 1: Introduction: General Concepts and Principles: Importance and history of nutrition in fruit crops, essential plant nutrients, factors affecting plant nutrition; nutrient uptake and their removal from soil.

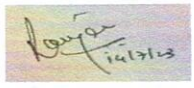
Block 2: Requirements and Applications: Diagnostics, Estimation and Application: Nutrient requirements, root distribution in fruit crops, soil and foliar application of nutrients in major fruit crops, fertilizer use efficiency. Methods and techniques for evaluating the requirement of macro- and micro- elements, Diagnostic and interpretation techniques including DRIS. Role of different macro-and micro-nutrients, their deficiency and toxicity disorders, corrective measures to overcome deficiency and toxicity disorders.

Block 3: Newer Approaches: Integrated Nutrient Management (INM): Fertigation in fruit crops, bio-fertilizers and their use in INM systems.

PRACTICALS

1. Visual identification of nutrient deficiency symptoms in fruit crops
2. Identification and application of organic, inorganic and bio-fertilizers
3. Soil/tissue collection and preparation for macro- and micro-nutrient analysis



4. Analysis of soil physical and chemical properties- pH, EC, Organic carbon
5. Determination of N, P, K and other macro- and micronutrients
6. Fertigation in glasshouse and field grown horticultural crops
7. Preparation of micro-nutrient solutions, their spray and soil applications.

FSC 513: MINOR FRUIT PRODUCTION **3(2+1)**

THEORY

Block 1: Introduction: Occurrence, Adoption and General Account: Importance – occurrence and distribution, climate adaptation in fragile ecosystem and wastelands.

Block 2: Agro-Techniques: Propagation and Cultural Practices: Traditional cultural practices and recent development in agro-techniques; propagation, botany-floral biology, growth patterns, modeof pollination, fruit set, ripening, fruit quality.

Block 3: Marketing and Utilization: Post-Harvest Management: Post harvest management, marketing; minor fruit cropsin terms of medicinal and antioxidant values; their uses for edible purpose and in processing industry

CROPS:

Bael, chironji, fig, passionfruit, jamun, phalsa, karonda, woodapple, Cactus pear, khejri, kair, pilu, lasoda, loquat, tamarind, dragon fruit, monkey jack, mahua, khirni, amra, kokum, cape gooseberry, kaphal, persimmon, pistachio, seabuckthorn, hazel nut and Other minor fruits of regional importance

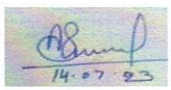
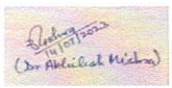
PRACTICALS

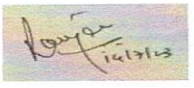
1. Visits to institutes located in the hot and cold arid regions of the country
2. Identification of minor fruits plants/cultivars
3. Collection of leaves and preparation of herbarium
4. Allelopathic studies
5. Generating know-how on reproductive biology of minor fruits
6. Fruit quality attributes and biochemical analysis
7. Project formulation for establishing commercial orchards in fragile ecosystems

FLS: 512-SEED PRODUCTION IN FLOWER CROPS **(1+1)**

THEORY

Block 1




UNIT I: Scenario of Seed Industry: Scope, scenario and importance of seed production in flower crops. Constraints in flower seed production. Marketing and economics of flower seeds.

Block 2

UNIT I: Seed production-Methods: Methods of seed production, agrotechniques for production of nucleus, breeder and certified seeds. Harvesting, seed processing, seed priming, seed chain, packaging and storage.

UNIT II: Population improvement: Mass selection, progeny selection. Use of incompatibility and male sterility, maintenance of variety and seed production in flower crops.

UNIT III: F1 hybrids: F1 hybrid seed production advantages, steps involved in hybrid seed production, pollination behaviour and isolation, pollination management methods in production of F1/ hybrids in different flower crops

Block 3: Regulations

UNIT I: Seed certification and standards: Seed certification, Seed standards, seed act, plant breeders rights and farmers' rights, Bio safety, handling of transgenic seed crops, importing of seeds and OGL, trade barriers in seed business, sanitary and phytosanitaty issues, custom clearance and quarantine.

Crops: Marigold, petunia, antirrhinum, zinnia, pansy, lupin, calendula, phlox, vinca, dianthus, sunflower, annual chrysanthemum, poppy, corn flower, rice flower,

PRACTICALS

1. Seed production of open pollinated varieties
2. Seed production of cross pollinated varieties
3. Steps involved in hybrid seed production
4. Hybrid seed production in different flower crops like marigold, petunia, antirrhinum, zinnia, pansy, lupin, calendula, phlox, vinca, dianthus, sunflower, annual chrysanthemum etc.
5. Visit to seed industry
6. Visit to quarantine facility

PGS:505 AGRICULTURAL RESEARCH, RESEARCH ETHICS AND RURAL DEVELOPMENTPROGRAMMES **1(1+0)**

THEORY

UNIT I: History of agriculture in brief; Global agricultural research system: need, scope, opportunities; Role in promoting food security, reducing poverty and protecting the environment; National Agricultural Research Systems (NARS) and Regional Agricultural Research Institutions; Consultative Group on International

Agricultural Research (CGIAR): International Agricultural Research Centres (IARC), partnership with NARS, role as a partner in the global agricultural research system, strengthening capacities at national and regional levels; International fellowships for scientific mobility.

UNIT II: Research ethics: research integrity, research safety in laboratories, welfare of animals used in research, computer ethics, standards and problems in research ethics.

UNIT III: Concept and connotations of rural development, rural development policies and strategies. Rural development programmes: Community Development Programme, Intensive Agricultural District Programme, Special group – Area Specific Programme, Integrated Rural Development Programme (IRDP) Panchayati Raj Institutions, Co- operatives, Voluntary Agencies/Non-Governmental Organisations. Critical evaluation of rural development policies and programmes. Constraints in implementation of rural policies and programmes.

FST 560	**Master's Research (Thesis/Dissertation)**	**Credits 10.0**

Fourth Semester

FST 560	**Master's Course Seminar**	**0+1**
FST 560	**Master's Research (Thesis/Dissertation)** **Thesis Report** **Viva-Voce Examination**	**20+0**