**CRS 2201 PERENNIAL CROPS AGRONOMY (3 CU )**

2. Lecturer: Dr. James M. Ssebuliba (Dip Educ. MUK Uganda; BSc Agric, MUK Uganda;

MSc, Nairobi, Kenya; PhD, MUK, Uganda)

3. COURSE TYPE: CORE (B.Sc. Agric. II, Lum)

4. COURSE STRUCTURE

3 Credit units: 30 lecture hours (2 contact hours per week for 15 study weeks) and 30 practical hours (1 contact hour per week for 15 study weeks)

5. COURSE DESCRIPTION

Types of perennial crops and their importance in East Africa. Distribution of perennial crops in relation to East African environments. Application of agronomic principles to the production of banana, coffee, cocoa, tea, sugar cane, citrus and other fruit crops within East African environments. Propagation, pruning and grafting techniques as applied to these crops

6. COURSE OBJECTIVES

General objective / aim

Students to appreciate the cultural practices for propagation and production of perennial crops

Specific objectives

* To provide students with the basic principles for production of Perennial crops
* To impart competence in application of agronomic principles to production of Perennial crops

7. RECOMMENDED REFERENCES FOR READING

* Acland, J.D. 1989. East African Crops. Longman. 252 pp.
* Purseglove, J.W. 1988. Tropical crops: Monocotyledons. Longman. 607 pp.
* Purseglove, J.W. 1988. Tropical crops: Dicotyledons. Longman. 719 pp.
* Mukiibi, J.K. 2002. Agriculture in Uganda: Volume 2: Crops. Africa Books Collective, UK. Oxford
* Sustainable Agriculture. 2000. Africa Net 2000, Uganda.
* Youdeowei, A., Ezedinma, F.O.C. and Onazi, O.C. 1988. Introduction to Tropical Agriculture. Longman. 344pp.

8. COURSE CONTENT, METHODS OF INSTRUCTION, TOOLS REQUIRED

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| TOPIC | CONTENT | METHOD OF INSTRUCTION / Time allocated | TOOLS NEEDED |
| 1. Introduction | * Importance of perennial crops in food security and income
* Advantages of growing perennial crops compared to annuals
* Constraints facing perennial crops production
 | Interactive Lecture (2 hrs) | LCD Projector and Screen,BB/Chalk |
| 2. Distribution of perennial crops in East Africa | * Factors affecting distribution of perennial crops in East Africa
* Manipulation of factors in order to extend production in unsuitable area
* Advantages of establishing perennial crops in isolated rural areas
 | Lecture ( 2 hrs) | LCD Projector and Screen,BB/Chalk |
| 3. Types of perennial crops  | * Classification of perennial crops
* Plant species and site selection for perennial crops
* Continuous assessment
 | Lecture (1 hr)Quiz (1 hr) | LCD Projector and Screen,BB/Chalk |
| 4. Banana production  | * Causes of decline
* Land preparation
* Propagation and planting
* Planting materials / tissue culture bananas
* Spacing and plant density
* Intercropping
* Mulching, Thinning, Pruning
* Harvesting
 | Lecture (2 hrs)Field visit Practical on production of Bananas (4 hrs) | LCD Projector and Screen,BB/ChalkTransport (60 seater) |
| 5. Coffee production  | * Causes of decline in export volumes
* Seedling and coffee nursery management
* Recommended varieties
* Seed source, cleaning, storage and sowing
* Locating nursery
* Seed bed preparation
* Transplanting and watering
* Field transplanting
* Shading and wind breaks
* Intercropping
* Training, pruning and stumping
* Harvesting.
 | Lecture (2 hrs) | LCD Projector and Screen,BB/Chalk. |
| 6. Cocoa production  | * Plant materials
* Varieties
* Field preparation
* Establishment of shade
* Spacing
* Planting holes/planting
* Pruning practices
* Intercropping
* Maturity period, Harvesting
 | Lecture (2 hrs)Field visit Practical on production of Cocoa and coffee (6 hrs) | LCD Projector and Screen,BB/Chalk,Transport (60 seater) |
| 7. Tea production  | * Vegetative propagation
* Planting
* Shade and wind breaks
* Shaping and pruning
* Frame formation
* Maintenance and production
* Ppruning, Pegging
* Tipping, Thinning
* Rehabilitation
 | Lecture (2 hrs)Field visit Practical on production of Tea (3 hrs) | LCD Projector and Screen,BB/ChalkTransport (60 seater) |
| 8. Sugar cane production  | * Environment for growing sugar cane
* Varieties
* Time of planting
* Land preparation
* Plant material
* Planting, placement in furrow
* Bedding
* Crop rotation/intercropping
* Husbandry
* Harvesting/burning off/green harvest
 | Lecture (2 hrs)Field visit Practical on production of Sugar cane (3 hrs) | LCD Projector and Screen,BB/ChalkTransport (60 seater) |
| 9. Pineapple production | * Land preparation
* Varieties
* Crop rotation
* Mulching
* Propagation and planting
* Rapid multiplication
* Spacing/ field lay out
* Flower induction
* Harvesting
* Pruning
* Ratoon crop
* Planting and cultivation in Organic farming
 | Lecture (2 hr)Field visit Practical on production of Pineapple (3 hrs) | LCD Projector and Screen,BB/ChalkTransport (60 seater) |
| 10. Passion fruit Production  | * Varieties
* Propagation and planting
* Land preparation
* Husbandry
* Trellis structures and support
* Pruning and training
* Intercropping
* Ratoon crop
* Harvesting
 | Lecture (2 hrs)Field visit Practical on production of Passion fruit (3 hrs) | LCD Projector and Screen,BB/ChalkTransport (60 seater) |
| 11. Citrus production  | * Important species
* Propagation
* Planting, Transplanting
* Tree management/maintenance
* Husbandry
* Intercropping
* Harvesting
 | Lecture (2 hrs) | LCD Projector and Screen,BB/Chalk |
| 12. Avocado production  | * Varieties
* Propagation and planting
* Land preparation
* Planting out
* Manuring, Pruning
* Harvesting
 | Lecture (2 hrs) | LCD Projector and Screen,BB/Chalk |
| 13. Mango production  | * Cultivars grown
* Propagation and planting
* Husbandry
* Formative pruning
* Structural pruning
* Orchard maintenance and hygiene
* Harvesting
 | Lecture (2 hrs)Field visit Practical on production of citrus, avocado, mango, pawpaw (6 hrs) | LCD Projector and Screen,BB/ChalkTransport (60 seater) |
| 14. Papaw production  | * Importance, fruit characteristics, varieties, pollination, propagation, planting season, maturity period
* Continuous assessment
 | Lecture (1 hrs)Test (1 hr) | LCD Projector and Screen,BB/Chalk |
| 15. Papaw production | * Spacing, culture, fertilizer and orchard floor management, irrigation and harvesting
* Continuous assessment 3
 | Lecture (2 hrs)Practical report (2 hrs) | LCD Projector and Screen,BB/Chalk |
| 16-17  | * Revision Time
* Final Examination
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9. SUMMARY OF TIME NEEDED

Lectures 28 hrs

Tests and quiz 2 hrs

Practicals 30 hrs

10. COURSE ASSESSMENT:

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| Continuous assessment (Quizzes): | There will be 2 Quizzes during week 3 and 14 of the semester | 20% |
| Continuous assessment (Practical Report): | Students will write a practical report on all the field visit practicals and submit it during the 15th week | 20% |
| University Examination: | Final examination during week 16-17 of the semester | 60% |