**HRT 3102 FRUIT PRODUCTION**

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

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

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**3. COURSE TYPE: CORE: B.Sc. HOT. III**

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

A study of production principles and cultural practices involved in the cultivation of fruit and nut crops. With emphasis on the importance of fruits; distribution and classification of pomological plants; nutritional considerations and social economic factors in fruit growing; environment in relation to fruit growing; fruit botany; orchard site and species selection; production requirements and cultural management practices for various fruit crops including: banana, pineapple, passion fruit, citrus, avocado, mango, pawpaw, Apples, grapes, strawberry, gooseberry and Macadamia nuts.

**6. COURSE OBJECTIVES**

General objective / aim

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

Specific objectives

* To provide students with the basic principles for propagation and production of fruit crops
* To impart competence in application of agronomic principles to production of fruit crops.

7. RECOMMENDED REFERENCES FOR READING

* East African crops.by JD Acland- Longman Group UK Limited 1989
* Tropical Crops Dicotyledons by Purseglove- Longman Group UK Limited 1988
* Tropical Crops Monocotyledons by Purseglove- Longman Group UK Limited 1988
* Introduction to Tropical Agriculture by Antony Youdeowei- Longman Group UK Limited 1986
* **Tropical fruits by JA Samson –Longman Group UK Limited 1986**

8. COURSE CONTENT, METHODS OF INSTRUCTION, TOOLS AND EQUIPMENT REQUIRED

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| TOPIC | CONTENT | METHOD OF INSTRUCTION / Time allocated | TOOLS / EQUIPMENT NEEDED |
| 1. Introduction: | * Importance of fruit crops in food security and income * Advantages of growing fruit crops * Constraints facing fruit crops production * Modern technologies applied in commercial fruit growing for quality improvement e.g Application of phytohormones, pruning fundamentals, bagging, protected cultivation. | Interactive Lecture (2 hrs) | LCD Projector and Screen,  BB/Chalk |
| 2. Distribution of fruit crops in East Africa | * Factors affecting distribution of fruit crops in East Africa * Manipulation of factors in order to extend fruit production in unsuitable area * Advantages of establishing fruit crops in isolated rural areas | Lecture ( 2 hrs) | LCD Projector and Screen,  BB/Chalk |
| 3. Types of fruit crops | * Classification of fruit crops * Plant species and orchard site selection for fruit crops, orchard planting patterns. * Continuous assessment 1 | 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 (3 hrs) | LCD Projector and Screen,  BB/Chalk  Transport (60 seater) |
| 5. 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/Chalk  Transport (60 seater) |
| 6. 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/Chalk  Transport (60 seater) |
| 7. Citrus production | * Important species * Propagation * Planting * Transplanting * Tree management/maintenance * Husbandry * Intercropping * Harvesting | Lecture (2 hrs)  Field visit Practical on production of citrus (3 hrs) | LCD Projector and Screen,  BB/Chalk |
| 8. Avocado production | * Varieties * Propagation and planting * Land preparation * Planting out * Manuring * Pruning * Harvesting | Lecture (2 hrs)  Field visit Practical on production of avocado (3 hrs) | LCD Projector and Screen,  BB/Chalk |
| 9. 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 mango (3 hrs) | LCD Projector and Screen,  BB/Chalk  Transport (60 seater) |
| 10. Papaw production | * Importance, fruit characteristics, varieties, pollination, propagation, planting season, maturity period * Spacing, culture, fertilizer and orchard floor management, irrigation and harvesting * Continuous Assessment 2 | Lecture (1 hrs)  Test (1 hr)  Field visit Practical on production of pawpaw (2 hrs ) | LCD Projector and Screen,  BB/Chalk |
| 11. Production and management of apples | * Factors favouring production * Cultivars * Propagation/Planting * Cultivation * Management of apple trees * Pruning/training * Pollination * Defoliation * Fruit thinning * Weed control * Intercropping * Harvesting | Lecture (2 hrs) | LCD Projector and Screen,  BB/Chalk  Transport (60 seater) |
| 12. Production and management of small fruits e.g. Grapes | * Grape vine propagation * Field nursery propagation * Green vine propagation * Vine yard establishment * Pruning and training * Canopy management * Pest control * Mulching * Fertilization * harvesting | Lecture (2 hrs)  Field visit Practical on production of Apples and Grapes (3 hrs) | LCD Projector and Screen,  BB/Chalk  Transport (60 seater) |
| 13. Production and management of small fruits e.g. Strawberry | * Soil and planting * Varieties * Propagation * When to plant * Planting depth * Planting systems * General care * Blossom removal * Fertilization * Mulching * Renovation * Harvesting | Lecture (2 hrs) | LCD Projector and Screen,  BB/Chalk |
| 14. Introduction to production of minor fruits e.g gooseberry | * Soil and planting * Varieties * Propagation * When to plant * Planting depth * Planting systems * General care * Fertilization * Mulching * Harvesting | Lecture (2 hrs)  Field visit  Practical on production of Strawberry and gooseberry (3 hrs) | LCD Projector and Screen,  BB/Chalk  Transport (60 seater) |
| 15. Production and management of nut crops e.g Macadamia nut | * Botanical description * Origin * Adaptation * Cultivars * Culture (soil, irrigation, fertilization, pruning, propagation, harvesting) and post harvest treatment * Pest and disease control * Processing, quality requirements, packaging and storage * Continuous Assessment | Lecture (1 hrs)  Field visit  Practical on production of macadamia nuts(2 hrs)  Practical reports (2 hrs) | LCD Projector and Screen,  BB/Chalk  Transport (60 seater) |
| 16-17 | * Revision Time * Final Examination |  |  |

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 10 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% |