

**National Pingtung University of Science and Technology**  
**Department of Tropical Agriculture and International Cooperation**

**Curriculum Table of Master Program for Academic Year107-110**

| Year     | First Academic year                             |        |  |        | Second Academic year   |        |   |        | T<br>O<br>T<br>A<br>L |
|----------|---|--------|--|--------|--|--------|---|--------|-----------------------|
| Semester | First Semester                                  |        | Second Semester  |        | First Semester   |        | Second Semester   |        |                       |
|          | Courses   | credit | Courses  | credit | Courses  | credit | Courses   | credit |                       |
| Required | Seminar   | 1      | Seminar  | 1      | Seminar  | 1      | Seminar   | 1      |                       |
|          | Applied Mandarin (1)-<br>Foreign students       | 1      | Applied Mandarin (2)- Foreign<br>students                                      | 1      | Thesis   | 3      | Thesis  | 3      |                       |
|          |   |        | Special Topics on Agricultural<br>Development and International<br>Cooperation | 2      |  |        |   |        |                       |
| Total    | Foreign Students                                | 2      | Foreign Students   | 4      |  | 4      |   | 4      | 14                    |
|          | Local Students                                  | 1      | Local Students   | 3      |  |        |   |        | 12                    |
| Elective | Experimental Design and Data<br>Analysis        | 2      | Special Topics on Marketing<br>Management                                      | 3      | Special Topics on Microeconomics<br>Development and planning in  | 3<br>2 | Competitive Strategy and Core<br>Planning in Agricultural<br>Development        | 2      |                       |
|          | Special Topics on Agribusiness<br>Management    | 3      | Sampling Methods   | 2      | Sustainable Agriculture  |        | Agriculture Technology Transfers  | 3      |                       |
|          | Special Topics on Immunology                    | 3      | Electron Microscopy  | 2      | Advanced Plant Nutrition   | 3      | Plant Germplasm Conservation  | 2      |                       |
|          | Global Seminar                                  | 3      | Special Research Project ( 2 )   | 1      | Special Topics on Natural Products                               | 2      | Molecular Nutrition   | 2      |                       |
|          | Special Research Project ( 1 )                  | 1      | Tropical Agriculture Ecology   | 2      | Special Topics on Forest Products                                | 2      | Utilization of Animal and Poultry   | 2      |                       |
|          | Advanced Plant Tissue Culture<br>Techniques     | 3      | Controlled Environment Plant   | 3      | Advanced Microscopy on<br>Biological Materials                   | 3      | Special Topics on Animal<br>Transgenics   | 2      |                       |
|          | Methodology for Food<br>Research                | 3      | PhysiologySpecial Topics on<br>Biological Control                              | 2      | Special Topics on Application and<br>Establishment of Stem Cells | 2      | Applications of New Technologies<br>on Meat Safety and Sanitation<br>Management | 2      |                       |
|          | Special Topics in Bioactive<br>Natural Products | 3      | Special Topics on International<br>Fishery Cooperation                         | 2      | Turf Physiology and Management                                   | 2      |   |        |                       |
|          | Functional Foods                                | 2      | Wood Microbiology  | 3      | Seed Science and Technology                                      | 2      |   |        |                       |
|          | Tropical Agriculture and<br>Biodiversity        | 3      | Advanced Food Biochemistry   | 2      | Special Topics on Fruit Crop                                     | 2      |   |        |                       |
|          | Animal Cell Culture                             | 3      | Advanced Food Chemistry  | 3      | PhysiologyAdvanced Pomology                                      | 2      |   |        |                       |
|          |   |        | Special Topics on Poultry<br>Management  | 2      | Advanced Olericulture  | 2      |   |        |                       |
|          |   |        |  |        | Advanced Floriculture  | 2      |   |        |                       |
|          | Total   |        | 29   |        | 27   |        | 29  |        |                       |

| Year     | First Academic year   |        |   |        | Second Academic year                                   |        |                 |        |  |
|----------|---|--------|---|--------|--|--------|-----------------|--------|--|
| Semester | First Semester  |        | Second Semester                               |        | First Semester   |        | Second Semester |        |  |
|          | Courses   | credit | Courses                                       | credit | Courses  | credit | Courses         | credit |  |
| Elective | Advanced Crop Science                                       | 2      | Special Topics on Dairy Cattle Management     | 2      | Advanced Postharvest Technology of Horticultural Crops | 2      |                 |        |  |
|          | Proteomics  | 2      | Fish Vaccinology                              | 3      | Animal Behavior and Welfare                            | 2      |                 |        |  |
|          | Special Topics in Cell Biology                              | 2      | Plant Biochemistry                            | 2      | Special Topics on Egg Products Processing              | 2      |                 |        |  |
|          | Special Topics on Ichthyology                               | 2      | Agriculture Research Methods                  | 2      | Physiology of Lactation                                | 2      |                 |        |  |
|          | Special Topics on New Fish Species Culture                  | 2      | Advanced Crop Breeding                        | 2      | Quantitative Genetics and Animal Model Methodology     | 2      |                 |        |  |
|          | Special Topics on Crustacean Physiology                     | 3      | Tropical Crop Physiology                      | 2      | Special Topics on Integrated Pest Management           | 3      |                 |        |  |
|          | Invertebrate Immunology                                     | 3      | Stress Physiology of Plants                   | 2      | Special Topics on Pesticides                           | 2      |                 |        |  |
|          | Animal Nutritional Physiology                               | 2      | Research Methods in Leisure Studies           | 3      | Special Topics on Biotechnology                        | 2      |                 |        |  |
|          | Special Topics on Nutrition for Herbivores                  | 2      | Special Topics on Marine Biotechnology        | 2      | Applied Microbiology                                   | 3      |                 |        |  |
|          | High Temperature and Animal Production                      | 2      | Special Topics on Reproductive Technology     | 2      | Biochemical Engineering                                | 2      |                 |        |  |
|          | Special Topics on Application of Animal Products Automation | 2      | Applied Animal Breeding Technology            | 2      | Seminar on Managing Business of Horticultural Products | 3      |                 |        |  |
|          | Special Topics on Tropical Livestock Production             | 2      | Applied Cattle Behavior                       | 2      | Seminar on Animal Enterprises Management               | 3      |                 |        |  |
|          | Livestock Pollution Control and Resource Utilization        | 2      | Special Topics on Milk Products Processing    | 2      | Special Topics on Landscape Architecture and Feng-Shui | 3      |                 |        |  |
|          | Special Topics on Animal House Arrangement                  | 2      | Special Topics on Meat Products Processing    | 2      | Crop Water Requirements                                | 3      |                 |        |  |
|          | Special Topics on Livestock Reproductive Management         | 2      | Animal Metabolic Regulation                   | 2      | Irrigation Methods                                     | 3      |                 |        |  |
|          | Special Topics on Plant Pathogens                           | 2      | Special Topics on Feed Manufacture Technology | 2      | Drainage Engineering                                   | 3      |                 |        |  |
|          | Advanced Entomology   | 2      | Special Topics on Safe Animal Production      | 2      |  |        |                 |        |  |
|          | <b>Total</b>  |        | <b>36</b>                                     |        | <b>36</b>  |        | <b>40</b>       |        |  |

| Year     | First Academic year                                      |        |   |        | Second Academic year                          |        |                 |        |  |
|----------|--|--------|---|--------|---|--------|-----------------|--------|--|
| Semester | First Semester   |        | Second Semester                                       |        | First Semester                                |        | Second Semester |        |  |
|          | Courses  | credit | Courses   | credit | Courses                                       | credit | Courses         | credit |  |
| Elective | Special Topics on Plant Diseases Control                 | 2      | Advanced Plant Pathology                              | 2      | Multivariate Data Analysis                    | 3      |                 |        |  |
|          | Molecular Virology                                       | 2      | Special Topics on Tropical Plant Diseases             | 2      | Special Topics for Advanced Quantity Analysis | 3      |                 |        |  |
|          | Gene Regulation  | 2      | Special Topics on Tropical Insect Pests               | 2      | Special Topic on Mushrooms Cultivation        | 2      |                 |        |  |
|          | Advanced Food Processing                                 | 2      | Special Topics on Insect Ecology                      | 2      | Industry Internship                           | 9      |                 |        |  |
|          | Special Topics in Food Engineering                       | 3      | Advanced Pharmacology                                 | 2      | Advanced Apiculture                           | 2      |                 |        |  |
|          | Global Issues in Agribusiness Management                 | 2      | Automatic Control in Food Processing                  | 3      | Practice of Advanced Apiculture               | 1      |                 |        |  |
|          | Agricultural Development and Policy                      | 3      | Optimization in Food Science and Technology           | 2      |   |        |                 |        |  |
|          | Supply Chain Management                                  | 3      | Microbial Physiology and Metabolism                   | 3      |   |        |                 |        |  |
|          | Project Appraisal and Management                         | 3      | Advanced Food Engineering                             | 3      |   |        |                 |        |  |
|          | Food Security  | 3      | Special Topics on Food Machinery                      | 2      |   |        |                 |        |  |
|          | Trends in Sustainable Development                        | 2      | Advanced Molecular Biology                            | 3      |   |        |                 |        |  |
|          | Seminar on International Market of Agricultural Products | 3      | Special Topics in Global Food Technology and Industry | 2      |   |        |                 |        |  |
|          | Seminar on Agribusiness Resource Planning Management     | 3      | Food Enzyme Methodology                               | 3      |   |        |                 |        |  |
|          | Special Topics on landscape Design                       | 3      | Special Topics in Food Chemistry                      | 3      |   |        |                 |        |  |
|          | Special Topics on Landscape Planning                     | 3      | Quantitative Methods                                  | 3      |   |        |                 |        |  |
|          | Landscape Plantation                                     | 2      |   |        |   |        |                 |        |  |
|          | Land Development and Control                             | 3      |   |        |   |        |                 |        |  |
|          | Leisure Agriculture                                      | 3      |   |        |   |        |                 |        |  |
|          | <b>Total</b>   |        | <b>47</b>   |        | <b>37</b>                                     |        | <b>20</b>       |        |  |

| Year     | First Academic year               |        |   |        | Second Academic year |        |                 |        |  |
|----------|-----------------------------------|--------|---|--------|----------------------|--------|-----------------|--------|--|
| Semester | First Semester                    |        | Second Semester                                 |        | First Semester       |        | Second Semester |        |  |
|          | Courses                           | credit | Courses   | credit | Courses              | credit | Courses         | credit |  |
| Elective | Agricultural Research Information | 2      | Seminar on Marketing Management of Agribusiness | 3      |                      |        |                 |        |  |
|          | Statistical Hydrology             | 3      | Seminar on Farmers' Organization                | 3      |                      |        |                 |        |  |
|          | Behavior of Soil Mechanics        | 3      | Negotiating Strategies and Tactics for Business | 3      |                      |        |                 |        |  |
|          | Special Topic on Drainage         | 3      | Agribusiness Investment Analysis                | 3      |                      |        |                 |        |  |
|          | Special Topic on Irrigation       | 3      | Human Resources Management of Agribusiness      | 3      |                      |        |                 |        |  |
|          | Sediment transport Study          | 3      | Regional Economics and Policy Analysis          | 2      |                      |        |                 |        |  |
|          | Vaccine Adjuvats                  | 2      | Special Topics on Chinese Garden Arts           | 3      |                      |        |                 |        |  |
|          | Advance Immunology                | 2      | Special Topics on Culture Landscape             | 3      |                      |        |                 |        |  |
|          | Enzyme and Protein Engineering    | 2      | Ecological Environment Planning                 | 3      |                      |        |                 |        |  |
|          | Vaccine Engineering               | 2      | Technology English Writing                      | 2      |                      |        |                 |        |  |
|          |                                   |        |   |        |                      |        |                 |        |  |
|          |                                   |        |   |        |                      |        |                 |        |  |
|          |                                   |        |   |        |                      |        |                 |        |  |
|          |                                   |        |   |        |                      |        |                 |        |  |
|          |                                   |        |   |        |                      |        |                 |        |  |
|          |                                   |        |   |        |                      |        |                 |        |  |
|          | Total                             |        | 25  |        | 39                   |        |                 |        |  |

Remark : **Master** students must complete a minimum of 30 credit hours to graduate:

Local students: 12 credit hours in required courses and 18 credit hours in elective courses

Foreign students: 14 credit hours in required courses and 16 credit hours in elective courses