**Syllabus**

<table>
<thead>
<tr>
<th>Course Title : Advanced plant tissue culture</th>
<th>Class : graduate Institute, HORT</th>
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<tbody>
<tr>
<td>Instructor : Tsai-mu Shen</td>
<td>Credit : 3</td>
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<td>[ ] Required</td>
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<td>[ ] Elective</td>
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**Prerequisite :**

| Course Hours : 3 |

1. **Course Objectives:**
   1. Learn the techniques for rapid clonal propagation *in vitro*.
   2. Learn the techniques for production of disease-free plants.
   3. Understand the *in vitro* technologis on the application of seedling production and breeding in Horticultural plants.

2. **Course Format and Evaluation:**
   - Lecture, Lab. And Seminar
   - Exam. 40%
   - Experimant 30%
   - Seminar 30%

3. **Course Schedule:**
   1. Introduction
   2. Plant tissue laboratory and aseptic techniques
   3. Preparation and composition of nutrient media
   4. Mass micropropagation of healthy plants
   5. Callus and cell culture
   6. Somaclonal variation
   7. Experiments in plant tissue culture
   8. Presentation from selective scientific papers

4. **Textbooks and Readings**
   - Dodds, J. H. and L. W. Roberts. 1985. Experiments in plant tissue culture. 2nd ed. Cambridge University, New York, USA.
   - Razdan, M. K. 2002. Introduction to plant tissue culture. 2nd ed. Science, India, USA.
   - Trigiano, R. N. and D. J. Gray. 2000. Plant tissue culture concepts and laboratory exercises. 2nd ed. CRC press, USA.