COURSE DESCRIPTION:

Greenhouse design, environmental control and equipment. Practices associated with plant nutrition management, greenhouse pest control, post-production handling and marketing of greenhouse crops, and business management practices also are covered.

OBJECTIVES:

1. To understand the principles of design, layout, construction, climate control and equipment of plant forcing structures.
2. To learn the functions, properties and components of plant growing media.
3. To understand the principles and practices of nutrition of container grown plants.
4. To know how to manipulate the greenhouse environment to achieve desired plant responses.
5. To understand the principles of insect and disease control in the greenhouse.
6. To learn handling and marketing techniques for greenhouse crops.
7. To understand business management aspects associated with greenhouse operation.

TEXTBOOK:


Additional reference: Ball Redbook, 16th Ed. Vic Ball, Editor, George Ball Press.

TERM PROJECT:

Develop a business plan for a commercial greenhouse operation you would like to own someday. Please refer to handout for components of a business plan.

GRADING:

<table>
<thead>
<tr>
<th></th>
<th>Points</th>
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<tbody>
<tr>
<td>Exams</td>
<td>300</td>
</tr>
<tr>
<td>Term project</td>
<td>100</td>
</tr>
<tr>
<td>Homework</td>
<td>100</td>
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<tr>
<td>Laboratory</td>
<td></td>
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<tr>
<td>Notebook</td>
<td>25</td>
</tr>
<tr>
<td>Oral report</td>
<td>25</td>
</tr>
<tr>
<td>Crop quality</td>
<td>25</td>
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<tr>
<td>Lab practicum</td>
<td>50</td>
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<tr>
<td>Total for course</td>
<td>625</td>
</tr>
</tbody>
</table>
GRADING SCALE:

100-97% = A+;   96-93% = A;   92-90% = A-
89-87% = B+;   86-83% = B;   82-80% = B-
79-77% = C+;   76-73% = C;   72-70% = C-
69-67% = D+;   66-63% = D;   62-60% = D-
<60%     = F

ATTENDANCE:

Students are expected to attend all labs and lectures to be successful in this course. Attendance will not be a formal part of the grade, however.

HOMEWORK ASSIGNMENTS:

Late assignments will be penalized 10% for each school day they are late.

STATEMENT FOR ACADEMIC HONESTY:

Academic honesty is fundamental to the activities and principles of a university. All members of the academic community must be confident that each person's work has been responsibly and honorably acquired, developed and presented. Any effort to gain an advantage not given to all students is dishonest whether or not the effort is successful. The academic community regards academic dishonesty as an extremely serious matter, with serious consequences that range from probation to expulsion from school. When in doubt about plagiarism, paraphrasing, quoting or collaboration, consult your instructor.

STATEMENT FOR A.D.A.:

If you need accommodations because of a disability, if you have emergency medical information to share with me, or if you need special arrangements in case the building must be evacuated, please inform me immediately. Please see me privately after class, or at my office.

To request academic accommodations (for example, a note taker or extended time on exams), students must also register with the Office of Disability Services (http://disabilityservices.missouri.edu), S5 Memorial Union, 882-4696. It is the campus office responsible for reviewing documentation provided by students requesting academic accommodations, and for accommodations planning in cooperation with students and instructors, as needed and consistent with course requirements. For other MU resources for students with disabilities, click on "Disability Resources" on the MU homepage.

INTELLECTUAL PLURALISM:

The University community welcomes intellectual diversity and respects student rights. Students who have questions concerning the quality of instruction in this class may address concerns to either the Divisional Director of the Office of Student Rights and Responsibilities (http://osrr.missouri.edu/). All students will have the opportunity to submit an anonymous evaluation of the instructors at the end of the course.

COURSE SCHEDULE:

<table>
<thead>
<tr>
<th>Session</th>
<th>Topic(s)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Orientation; History and scope of industry (Chapter 1)*</td>
</tr>
<tr>
<td>2</td>
<td>Planning/Legal considerations (Chapter 2)</td>
</tr>
<tr>
<td>3</td>
<td>Architectural styles</td>
</tr>
<tr>
<td>4</td>
<td>Covering materials</td>
</tr>
<tr>
<td>5</td>
<td>Greenhouse Heating (Chapter 3)</td>
</tr>
<tr>
<td>6</td>
<td>Energy conservation</td>
</tr>
</tbody>
</table>
Greenhouse cooling (Chapter 4)
Venting/Dehumidification/Control integration (Chapter 5)
Interior layout/Benching
Greenhouse equipment and automation; Watering systems
Solar greenhouses/Alternative forcing structures

First hourly exam
Plant growing media (Chapter 6)
Plant growing media
Alternative cropping systems (Chapter 10)
Plant nutrition: Macro-nutrients (Chapter 9)
Plant nutrition: Micro-nutrients
pH/Soluble salts: Effect on nutrition
Role of water quality in plant nutrition
Fertilizer sources
Greenhouse insects/Insect control (Chapter 14)
Pesticide safety/Worker protection law

Second hourly exam
Greenhouse diseases/Disease control (Chapter 15)
Integrated pest management
Plant growth regulation; Cost accounting assignment (Chapter 13)
Watering, lighting, cultural manipulation (Chapters 8, 11, 12)
Sales and Marketing (Chapters 17, 18)
Business management; cost accounting
Legal matters; Submit semester projects

* = Supplementary reading in Greenhouse Operation and Management by P.V. Nelson