



interests as well as practice problem-solving skills for researching and making management decisions in resources management.

: The basic course will use Blackboard as the main interface for exams, presentation of videos, YouTube and more.

Online or classroom powerpoint lecture

- 2) Audio/video demonstrations using Powerpoint, Camtasia, Youtube
- 3) Propagation terms- a combination of puzzles, quizzes, matching, short answer
- 4) Situational essays: short essays answering questions about how vegetative propagation methods are used in natural resources management that require independent research of literature, analysis and problem solving
- 5) Videos or production practices for seeds
- 6) In-class or distance discussions about the biology and/or business of vegetative propagation

**Technology Requirements:**

One section of this course will be online and will use several multimedia technologies accessible through Blackboard. Lectures will be recorded using Powerpoint/Camtasia/Youtube and will require audio and video capabilities. There are no requirements to purchase additional software. Students will be expected to have the most current versions of several applications that will be used in this course, including [QuickTime](#), [Flash \(Mac|Windows\)](#), [iTunes](#) and [Java](#). Before the first online class meeting, please visit the [OIT website](#) to make sure all of your systems are up to date.



Audits: Auditing the class is accepted but not recommended. You must complete all work, including the exams, readings and lab reports. They simply won't be graded. If exams, etc. are not completed, the instructor will initiate a withdrawal from the class.

Spelling and Grammar On all written papers including lab reports and exams, you will lose points for poor spelling and grammar.

1. Asexual or vegetative propagation – introduction - how vegetative propagation is used in horticulture, forestry, agronomy, wildland restoration, landscaping. A broad overview of the importance of asexual propagation and examples of it used professionally around the world
2. Major concerns with vegetative propagation: viruses, mutations and how they are managed.
3. Cuttings: vegetative shoot anatomy, where roots/shoots come from, adventitious organs Chimeras- definition, how they arise, to good and bad of chimeras
4. Commercial stock plant production and nurseries
5. Cuttings, callus and development; environmental control of root development especially light, air and soil temperature, humidity, propagation medium (quiz 6, video commentary 3)
6. Leaf cuttings, leaf-bud cuttings- anatomy, commercial applications; factors affecting success
7. Layerage- the art and science of layering - origin, anatomy, methods of commercial propagation; factors affecting regeneration by layerage.
8. Root cuttings- anatomy, commercial applications, factors affecting root/shoot development
9. Growth regulators and rooting- common plant hormones and how they are used in promoting root/shoot production; how they work
10. Propagation by specialized stems: bulbs, corms tubers, rhizomes, tuberous rhizomes; their origin, anatomy, methods of commercial propagation; factors affecting regeneration by specialized stems
11. Specialized structures- pseudobulbs, offsets, runners; their origin, anatomy, methods of commercial propagation; factors affecting regeneration by specialized stems
12. Grafting and Budding- definition, origin, anatomy, methods of commercial propagation; factors affecting regeneration by grafting and budding
13. Final exam/paper