

## Biology 490 Section 2: Aquaponics & Controlled Environment Agriculture (Fall 2021)

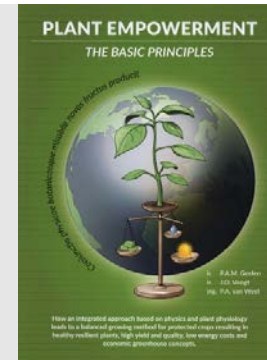
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Office Hours: Virtual using email, Zoom & Canvas for support



**Required course materials:** Plant Empowerment: The Basic Principles (2019; P.A.M. Geelen, J.O. Voogt & P/A. van Weel, authors), available through Text Rental. A computer connected microphone. Other resources will be made available to you via Canvas.

**Course description:** This course focuses on food production in controlled environments (aka greenhouses) that require a highly orchestrated combination of complex biological, environmental, mechanical, and managerial systems organized to produce crops. Class meetings take place in Canvas using an asynchronous format comprised of student produced voice-over PowerPoint, peer reviews, and a summary narrative. Discussions will be student lead. Emphasis will be placed on both oral and written communication as they pertain to the scientific field of biology and related disciplines.

**Course learning outcomes:** After taking this course, students should be able to:

1. Critically analyze and discuss the production of food in controlled environments.
2. Identify and describe the biological, environmental, mechanical, and managerial systems in a controlled setting.
3. Locate, interpret, and synthesize scientific and popular-press media to explore course-relevant topics, and share related information with others via both written and oral communication.
4. Critically evaluate and provide meaningful feedback on the written work and oral presentations of others.

**Attendance & participation:** The course is online and asynchronous so you should be able to keep the schedule and access the course anytime. It is imperative that we keep to the schedule since classmates will need to access your material to submit critiques/reviews promptly. The first time a PowerPoint presentation or critique/review is late, you will receive a warning. After that, a 20% loss in value will be assessed for each day an assignment is late.

**Oral & written work:** There are three distinct assignments in this class. One is the production of a professional, voice-over PowerPoint based on an assigned topic from the book, **Plant Empowerment: The Basic Principles**. You will serve as the presenter using a recorded PowerPoint presentation, delivered asynchronously through Canvas, where you teach the class about the specific topic. The second assignment will be professional critiques/reviews of the PowerPoint presentations of fellow classmates highlighting the successful and unsuccessful components to each presentation. Finally, the

third assignment will be the submission of a summary narrative/script based on your PowerPoint presentation including edits, updates, and revisions suggested from the critiques/reviews.

**PowerPoint presentations are due on the day indicated in the schedule. Critique/review is due 1-week after the PowerPoint presentation. Summary narrative/script is due two weeks after the PowerPoint presentation.**

- **Voice-over PowerPoint presentation:** A narrated, voice-over PowerPoint will be created by each student based on the assigned topic. A template, provided in Canvas, should be used initially, and developed into a full presentation that lasts about 20-30 minutes. Both the textbook and outside sources should be used to create the presentation. Proper citations should be applied to any outside sources. It is highly recommended that Outline View be used in PowerPoint to add notes to the presentation as these can be used while narrating the presentation and will be used to create the final narrative/script.
- **Peer critique/review:** A template, provided in Canvas, should be used to evaluate key components of the PowerPoint presentations. The critique/review should be constructive and comprehensive highlighting the successful and unsuccessful aspects of the presentation (content & delivery). The critique/review should suggest how improvements could be made and will be provided to the PowerPoint author so they can use the information to complete their summary narrative/script. Critiques will be graded by the instructor.
- **Summary narrative/script:** Using the notes generated during the creation of the voice-over PowerPoint and the critiques/reviews provided by classmates, prepare and submit a final summary narrative/script based on the assigned topic. This can be done in PowerPoint using the Notes and Outline features and will be a revised and updated version of your original voice-over PowerPoint. No need to redo the voice-over.

**Grading:** Point values for assignments are listed below.

Activity	# Possible points
Voice-over PowerPoint	50
Critiques/Reviews	30
Summary narrative/script	20

Your final grade in the course will be based on the total number of points that you earn throughout the semester. To determine your final grade the following metric will be used:

>94	93-90	89-87	86-84	83-80	79-77	76-74	73-70	69-67	66-60	<59
A	A-	B+	B	B-	C+	C	C-	D+	D	F

**Late policy and discretionary points:** Since classmates are relying on you to keep to the schedule so they can complete assignments, a 20% loss in value will be assessed for each day an assignment is late. points may be added or subtracted from your final course grade based on effort, improvement, participation, alacrity, and attitude.

**Academic integrity:** You are responsible for the honest completion and representation of your work and for the respect of others' academic endeavors. Any act of cheating, plagiarism, or academic misconduct

is subject to the penalties outlined in UWS Chapter 14:  
<https://www.uwsp.edu/dos/Documents/UWSP14-Final2019.pdf>

**Students with disabilities:** First see Student Disability Services and complete the necessary paperwork. Then, contact me so that arrangements can be made for PowerPoint presentation creation and delivery, critique development, and summary narrative completion.

Schedule:

Week of:	Topic	Presenter(s)
9/2	Introduction to course	
9/6	PowerPoint development	
9/13	PowerPoint development and critique/review overview	
9/20	PowerPoint development and summary narrative/script overview	
9/27	Chapter 3: The plant, section 3.1 – 3.5.16 Chapter 3: The plant, section 3.6 - 3.7.5	Lezon Sroka
10/4	Chapter 4: Physics, section 4.1 – 4.4.3 Chapter 4: Physics, section 4.5 - 4.8.3	Fox Augustus
10/11	Chapter 5: The characteristics of humid air	Eisch
10/18	Chapter 6: Growing by plant empowerment, section 6.1 – 6.7.6 Chapter 6: Growing by plant empowerment, section 6.8 - 6.9.4	Phelps Wiebusch
10/25	Chapter 7: Challenging outdoor conditions	Osgood
11/1	Chapter 8: Greenhouse structures and equipment, section 8.1 – 8.4.2.2 Chapter 8: Greenhouse structures and equipment, section 8.5 – 8.7.4	Kanable Gibson
11/8	Chapter 8: Greenhouse structures and equipment, section 8.8 - 8.15 Chapter 9: Sensors for plant monitoring and climate control	Fernholz Hughson
11/15	Chapter 10: Roadmaps for the implementation of GPE, section 10.1 – 10.7	Thompson
11/22	<b>Thanksgiving</b>	
11/29	Chapter 11: Letsgrow on-line tools for monitoring and analysis	Delzer
12/6	Wrap-up	

### **Technology Requirements**

#### **Minimum student technical skills –**

In this course you will be expected to complete the following types of tasks:

- Communicate via email, Zoom & Canvas
- Complete basic internet searches
- Download and upload documents to the LMS
- Read/view documents online
- Create and view voice-over PowerPoints
- Participate in online critiques/reviews
- Upload documents to a Dropbox
- Participate in asynchronous online discussions

## **Technical assistance -**

If you need technical assistance at any time during the course or to report a problem with Canvas you can:

- Visit with a Student Technology Tutor
- Seek assistance from the IT Service Desk (Formerly HELP Desk)
  - IT Service Desk Phone: 715-346-4357 (HELP)
  - IT Service Desk Email: [techhelp@uwsp.edu](mailto:techhelp@uwsp.edu)
- Contact the Center for Inclusive Teaching and Learning (CITL)
  - CITL Phone: 715-346-2945
  - CITL Email: [citl@uwsp.edu](mailto:citl@uwsp.edu)

## **Connectivity and hardware requirements -**

Minimum connectivity and hardware requirements are described here:

<https://www.uwsp.edu/d2l/pages/requirements.aspx>. It also includes access to and use of a microphone.

## **Course Accessibility**

### **Inform your instructor of any accommodations needed -**

If you have a documented disability and verification from the Disability and Assistive Technology Center and wish to discuss academic accommodations, please contact the instructor as soon as possible. It is the student's responsibility to provide documentation of disability to Disability Services and meet with a Disability Services counselor to request special accommodation before classes start.

The Disability and Assistive Technology Center is located in 609 Albertson Hall and can be contacted by phone at (715) 346-3365 (Voice) (715) 346-3362 (TDD only) or via email at [datctr@uwsp.edu](mailto:datctr@uwsp.edu)

### **Statement of Policy -**

*"UW-Stevens Point will modify academic program requirements as necessary to ensure that they do not discriminate against qualified applicants or students with disabilities. The modifications should not affect the substance of educational programs or compromise academic standards; nor should they intrude upon academic freedom. Examinations or other procedures used for evaluating students' academic achievements may be adapted. The results of such evaluation must demonstrate the student's achievement in the academic activity, rather than describe his/her disability."*

Further information about the university's web accessibility policy can be found here:

<https://www.uwsp.edu/accessibility/Pages/default.aspx>

If modifications are required due to a disability, please inform the instructor and contact the Disability and Assistive Technology Center in 609 ALB, or (715) 346-3365.

## **Instructor Availability**

I will attempt to respond to student emails within 24 hours. If you have not received a reply from me within 24-hours, please resend your email.

If you have a general course question (not confidential or personal in nature), please post it to the Course Q&A Discussion Forum found on the course homepage. I will post answers to all general questions there so that all students can view them. Students are encouraged to answer each other's questions too. I will attempt to grade written work within 72-hours; however, longer written assignments may take me longer to read and assess.

## **Student Assessment**

### **Grading Policies -**

Graded course activities may include voice-over PowerPoint, critiques & reviews, and narrative/scripts.

Participation - Students are expected to participate in all online activities as listed on the course calendar. Student participation will be monitored via the LMS time/date stamp and online access occurrence on discussions, chat sessions, and assignment submission. Students should access online content weekly throughout the course.

### **Complete Assignments -**

All assignments for this course will be submitted electronically through Canvas unless otherwise instructed. Assignments must be submitted by the given deadline or special permission must be requested from instructor before the due date. Extensions will not be given beyond the next assignment except under extreme circumstances. All discussion assignments must be completed by the assignment due date and time. Late or missing discussion assignments will affect your grade.

### **Viewing Grades in Canvas -**

Points you receive for graded activities will be posted to the Canvas Grade Book. Click on the Grades link to view your points. The instructor will update the online grades each time a grading session has been completed - typically 7 days following the completion of PowerPoints and within 48-hours for critiques and summary narratives. You will see a visual indication of new grades posted on your Canvas home page under the link to this course.

### **Student Recording and Sharing Class Lecture**

Lecture materials and recordings for [Biology 490, section 2] are protected intellectual property at UW-Stevens Point. Students in this course may use the materials and recordings for their personal use related to participation in this class. Students may also take notes solely for their personal use. If a lecture is not already recorded, you are not authorized to record my lectures without my permission unless you are considered by the university to be a qualified student with a disability requiring accommodation. [Regent Policy Document 4-1] Students may not copy or share lecture materials and recordings outside of class, including posting on internet sites or selling to commercial entities. Students

are also prohibited from providing or selling their personal notes to anyone else or being paid for taking notes by any person or commercial firm without the instructor's express written permission. Unauthorized use of these copyrighted lecture materials and recordings constitutes copyright infringement and may be addressed under the university's policies, UWS Chapters 14 and 17, governing student academic and non-academic misconduct.