Introduction to Aquaponics
Biology 384/584 Section
Spring 2017

Required Text:
Nelson, R.L. 2008. Aquaponic food production: Raising fish and plants for food and profit. Available at UWSP Bookstore, Amazon.com, or http://aquaponics.com ($29.95)

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Lecture Outline:

Date lecture is active online:	Lecture Topic	Chapter in Text	Time
Introduction:			
February 22 **February 27**	Introduction Aquaponics history	1, 2	Two 1-hour lectures
Aquaponics Systems:			
March 1	Aquaponic Applications and Benefits	3	1-hour lecture
March 6 **March 8**	Aquaponics Systems and Components 1 Aquaponics Systems and Components 2	4,5	Two 1-hour lectures
March 13 **March 15**	Environmental Control Greenhouse Energy Efficiency	17,18	Two 1-hour lectures
Biology of Integrated Crops:			
March 27 **March 29**	Water Quality Dynamics 1 Water Quality Dynamics 2	16	Two 1-hour lectures
April 3 **April 5**	Plant Biology Crop choices, seeding, transplanting, harvesting	7,10,11,12	Two 1-hour lectures
April 10 **April 12**	Fish Selection Fish Biology, Physiology & Nutrition	6,14,15	Two 1-hour lectures
April 17 **April 19**	Integrated Pest Management Biosecurity	13	Two 1-hour lectures
April 24	Daily Operation Recordkeeping	9	1-hour lecture
April 26	Good Agricultural Practices/Best Aquaculture Practices; Rules and Regulations		1-hour lecture
Business & Economics:			
May 1 **May 3**	Aquaponics/Greenhouse planning & start-up Economics of aquaponics	8	Two 1-hour lectures
May 8	Marketing Products	22	1-hour lecture

Supplemental Readings & Online Discussion:

Required additional readings will be assigned throughout the semester. Articles will be available on the course Desire2Learn (D2L) site (as pdf documents).

Online discussion sessions will be held continuously during the semester. They can be accessed through the course Desire2Learn site from the Discussions Tab. This is a time for all students to ask questions about lectures, supplemental readings, and review topics. Participation is considered a required part of the course.

Laboratory Outline:

Laboratory exercises will be conducted at the Aquaponics Innovation Center at the Nelson& Pade, Inc.'s campus in Montello, WI from May 22 – 24.

Date	Topics	Time
May 22 am	Aquaponic system design, management & maintenance	3 hours
May 22 pm	Water flow dynamics & quality testing	3 hours
May 23 am	Fish stocking, weights, feed calculations & harvesting	3 hours
May 23 pm	Seed propagation & transplanting / plant ID & management	3 hours
May 24 am	Harvesting, marketing & taste testing!	3 hours
May 24 pm	Presentations & Wrap-up	3 hours

Grading:

Three Exams	Exam 1 (March 27; 100 pts)	20%
	Exam 2 (April 21; 100 pts)	20%
	Exam 3 (May 12; 100 pts)	20%
Lab Exercises	(5 @ 20 pts each)	40%
Total	(300 pts for exams; 100 pts for labs)	100%

Exams: Exams will be emailed and posted on the course D2L site on the date listed (above) at 12 pm (noon) CST. They will be due 48 hours later by 12 pm (noon) CST. While any course content, scientific-based, and economic-based material may be used as references when answering exam questions, ***you should cite your sources, not plagiarize or extensively "quote", and be very critical of web-based information***. Most web-based information is opinion and may be inaccurate or difficult to substantiate and **should not** be used as a source.

Discretionary points: Points may be added or subtracted from your final course grade based on effort, improvement, participation, alacrity, and attitude.

Grade Distribution (in %):

A =	100-94	B- = 83-80	D+ = 69-67
A- =	93-90	C+ = 79-77	D = 66-60
B+ =	89-87	C = 76-74	F = <60
B =	86-84	C- = 73-70	

Lab Exercises:

You will be required to complete 5 lab exercises. Data collection will be accomplished in during lab class; data analysis & summaries should be completed during and after class. Reports are due the next day. Credit can be earned with exercise accuracy, proper calculations, thorough analysis and explanations, and neatness.

Rules & Grades:

There are NO "make-ups" for lab exercises. Lab exercises will be due the day after the exercise is completed. Five points (-5) will be subtracted each day for late submissions.

Only university approved absences, accompanied by appropriate evidence (see undergraduate catalog), will be accepted if you miss the exams. A make-up exam must be taken within 3 class days of the actual exam date. Contact the instructor **before** the exam if there may be a problem. Discussion regarding grades or grading practices will only be conducted during appointments with the instructors; this ensures privacy and confidentiality.

Academic Misconduct: 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; http://www.uwsp.edu/admin/stuaffairs/rights/rightsCommBillRights.pdf

Students with Special Needs: First see Student Disability Services and complete the necessary paperwork. Then, contact me so that arrangements can be made for note-taking, testing, report completion and field trip activities.