UtahState University
DEPARTMENT OF WATERSHED SCIENCES

Spring 2017 Agenda

WATS 6860 - Partnering with Beaver in Restoration Design

Course will meet on Thursdays from 4:30 to 6:00 PM in ENG 104. The course is 1 credit, which means a minimum of 15 hours of contact time (excluding field trips). We will meet during the scheduled time on eleven occasions and have two Saturday field trips and one evening field trip. Your grade will be based on 4 homework assignments (50%) and two projects (25%).

Week	Date	Topics	Lab/Assignments or Field Trips
1	Jan 12	**INTRODUCTION** ● Introductions & Expectations ● Overview of Beaver in Restoration, Conservation & Management Context	**Reading Assignment** - Read Baker & Hill (2003); Read Chap 1-4 (pp 3-57) in Dollin (2010)
2	Jan 19	**BEAVER BIOLOGY, FUR-TRAPPING HISTORY & DAM BUILDING** ● Beaver Biology ● Fur Trapping History ● Beaver Dam Building - Why and How?	**Reading Assignment** - Read Mueller & Schartz (2011) - Chapters 1-12
3	Jan 26	**BEAVER DAM-BUILDING FEEDBACKS** ● Physical Feedbacks (Hydraulic, Hydrologic, Geomorphic) ● Ecological Feedbacks	**Reading Assignment** - Read Macfarlane et al (2015) & Read Mueller & Schartz (2011) - Chapters 13-16 **Homework Assignment 1** - Map locations & status of beaver dams from imagery - *Due 2/2* **Field Trip** - Field trip to Curtis Creek - *Tentatively 1/28*
4	Feb 2	**PREDICTING & MAPPING WHERE BEAVER BUILD DAMS** ● Beaver dam capacity modelling ● Capacity Model Lab	**Reading Assignment** - Read Pollock et al. (2014) **Homework Assignment 2** - Apply BRAT Capacity Model - *Due 2/16*
5	Feb 9	**OVERVIEW OF BEAVER CONSERVATION & RESTORATION USING BEAVER** ● Beaver Conservation & Regulations ● Impairments beaver might be able to help with ● Scope of Beaver Restoration Techniques	**Reading Assignment** - Read Bouwes et al. (2016) & Evans (201?)
6	Feb 16	**BEAVER RESTORATION CASE STUDIES** ● Suzy Creek ● Bridge Creek ● Anabranch Overview	**Reading Assignment** - Read Bennett al (2016) & Wheaton (2012) **Homework Assignment 3** - Write a review of restoration approaches using beaver and discuss their tradeoffs, limitations and where they do and don't make sense - *Due 3/2* **Field Trip** - Field trip to Curtis Creek -

See http://beaver.joewheaton.org for slides, handouts, links, literature.

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			Tentatively 1/28
7	Feb 23	**LIVING WITH BEAVER MITIGATION & ADAPTIVE BEAVER MANAGEMENT PLANS** ● Nuisance Problems ● Mitigation Techniques ● Adaptive Management Principles ● AM Plan Components ● Concept of Pilots	**Reading Assignment** - Read Portugal et al. (2015)
8	Mar 2	**CLASS FIELD TRIP TO WALMART** ● Visit the Walmart beaver mitigation project and review adaptive management plan	**Homework Assignment 4** - Prepare an Adaptive Beaver Management Plan - *Due 3/16*
Spring Break			
9	Mar 16	**BEAVER TRANSLOCATION** ● Practical Constraints & Opportunities ● Methods and Best Practices ● Legal & Permitting Considerations	**Reading Assignment** - Read Pollock et al. (2014) and Pollock et al (2012), and BDM (2015)
10	Mar 23	**BEAVER DAM ANALOGUES** ● Overview of different techniques and purposes ● Planning & Objectives ● Design Principles ● Design Exercise ● Designing Pilot Projects	**Reading Assignment** - Read Hood. (2012) - 'Beaver Manifesto' & Macfarlane et al (2014, pp 2-3, 36-43, 48-55, and skim 88-101) MAR 25 - **Field Trip** to Birch Creek to look at Translocation **Project Assignment 1**: Prepare BDA Desktop Pilot Design & Report - *Due 4/13*
11	Mar 30	NO MEETING - Joe in Italy - Students should Attend Spring Runoff Conference on March 28-29	
12	Apr 6	NO MEETING - Joe in Italy	
13	Apr 13	**BEAVER RESTORATION EXPECTATION MANAGEMENT & PLANNING** ● Critical Planning Principles ● People & Expectation Management ● Conflicts & Management Priorities ● BRAT - Decision Support	**Reading Assignment** - Read Portugal et al (2015) - Pine Creek **Project Assignment 2**: Develop Watershed Beaver Restoration Plan - *Due 4/27*
14	Apr 20	**BEAVER DAM ANALOGUE DESIGN & CONSTRUCTION** ● Field Design ● Structures vs. Complexes ● Construction Bidding, Permitting & Safety ● As-Built Documentation ● Adaptive Management Monitoring & Maintenance	April 22 - Weekend Fieldtrip to design and build BDAs.
15	Apr 27	**COURSE SYNTHESIS & PROJECT PRESENTATIONS**	FINAL PROJECT - *due 4/25*

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Finals	May 1-5	No Final Exam	

SUBJECT TO CHANGES