



BEE313 – DETAILED COURSE REQUIREMENTS

Individual Learning Assessments:

In total, 50% of each student's grade will be individually assigned during this course based on the following activities:

Problem Sets:

This course includes four problem sets. Each problem set includes 4 problems, with each problem worth 20 points (80pts total). Student solutions are to be submitted on Canvas as PDF files exported from a single *Jupyter Notebook*. Each problem should include a description of the problem objective (4pts), an explanation of approach undertaken to solve the problem (4pts), the clearly stated result (4pts), and a discussion of the relevance of the result to the stated problem (4pts). Additionally, students will be evaluated on the clarity of their work (4pts).

Discussions:

Each of the five modules in this course will include a discussion page on Canvas. All students are required to contribute to each of these discussion pages (20pts each). A contribution can be a question, answer, comment, or reply. The objective of these discussions is to keep the class engaged in the learning activities and to provide a space for questions about class problems to be discussed.

Individual Assessments of Group-Work Effort:

Along with each progress report and the final group project presentation, each student is asked to submit an individual assessment of group work effort. This confidential statement must include 2 things. First, a brief statement (max 3 sentences) of your role in the completion of the report. Second, include a table which has a score (0-10) for each group member. Format this table with the name of each member of the group, including yourself, and your score for that individual. This score should reflect their contributions to the project throughout the module. Let 0 reflect no contribution and 10 reflect an outstanding contribution to the group project. Please add any comments you wish to communicate; all peer reviews will be confidential. Each assessment for the progress reports will be worth 10 points while the final will be worth 40. Grades will be determined based on the instructor's assessment of your effort.

Group Learning Assessments:

This course includes a significant group project focused on the Marys River Watershed (MRW). Students are to form into groups of 4 students maximum, and each group will investigate the impact on the ecohydrology of the MRW of a hypothetical alteration within the MRW.

Progress Reports:

It is expected that each team's progress reports will be cumulative in nature, increasing from 3 to 6, 9, and 12 pages in total, for PR1, PR2, PR3, and PR4 respectively. Reports are to be 12pt font, single spaced, and may include figures and tables, while any important calculations should be included in appendices. Each report should include a 1-page executive summary (12pts), which counts towards the page limit, as well as any references and appendices, which do not count in the page limit. The body of the report should begin with an introduction (8pts). Next, the report should include a description of the study area, the Marys River watershed (8pts) and the technical issue of that report. For each report, your 'results' section should summarize your findings on the focal issue (8pts). Finally, conclude with a discussion of next steps (8pts), and include any references and appendices as needed (8pts). You will also be evaluated on organization and presentation quality (8pts). Progress reports will be graded using the rubrics below, adapted from the BEE Assignment Guidelines.

Final Project Presentation:

Each group is to present to the class a 15-minute presentation detailing the expected ecohydrologic changes that will occur as result of the impact investigated. The presentation should provide background information about the investigated impact. It should detail how precipitation, evapotranspiration, and groundwater dynamics all shape the surface water flows in the Marys River watershed under current conditions. The development process and accuracy of your HEC-HMS model should be presented. Finally, each presentation should detail how the investigated impact was represented in your model and what its expected consequences are for the Marys River watershed. The Final Project Presentation is worth 130 points in total. Each presentation will be evaluated on 9 categories: 'content setup', 'content breadth', 'coherence and organization', 'creativity', 'materials', 'speaking skills', 'audience', 'length of presentation', and 'questions'. Each category will be worth 15 points, except for the 'questions' category, which is worth 10 points. Presentations will take place on the last day of class during the quarter.

Final Project Report:

Each group is to submit a final report detailing the expected hydrologic changes that will occur as result of the impact investigated. This report should be a maximum of 15 pages in length, include an executive summary. Any additional references and appendices do not count towards the page limit. The report should provide background information about the investigated impact. It should detail how precipitation, evapotranspiration, and groundwater dynamics all shape the surface water flows in the Marys River watershed under current conditions. The development process and accuracy of your HEC-HMS model should be presented. Finally, each report should detail how the investigated impact was represented in your model and what its expected consequences are for the Marys River watershed. The Final Project Report is worth a total of 130 points. The same rubric as previous reports is used, but the points are doubled for each rubric category (16points), except for the executive summary is worth 34 points. The Final Project report is due the Tuesday of Finals week.

Learning Assessment Point Breakdown:

ASSESSMENT	PER UNIT	TOTAL	PERCENT
PROBLEM SETS (4)	80	320	32
DISCUSSIONS (5)	20	100	10
INDIVIDUAL ASSESSMENTS (5)	10x4 or 40	80	8
PROGRESS REPORTS (4)	60	240	24
FINAL PROJECT PRESENTATION (1)	130	130	13
FINAL PROJECT REPORT (1)	130	130	13

Learning Assessment Tasks Dates:

<u>Module</u>	<u>Coverage</u>	<u>Task Topic</u>	<u>Due Date</u>	<u>Points</u>
1				
	Wk 1	Discussion 1	April 3, 2020	20
	Wk 1	Progress Report 1	April 10, 2020	60
	Wk 1	Individual Assessments of Group-Work Effort	April 10, 2020	10
2				
	Wk 2-3	Discussion 2	April 17, 2020	20
	Wk 2-3	Problem Set 1	April 17, 2020	80
	Wk 2-3	Progress Report 2	April 24, 2020	60
	Wk 2-3	Individual Assessments of Group-Work Effort	April 24, 2020	10
3				
	Wk 4-5	Discussion 3	May 1, 2020	20
	Wk 4-5	Problem Set 2	May 1, 2020	80
	Wk 4-5	Progress Report 3	May 8, 2020	60
	Wk 4-5	Individual Assessments of Group-Work Effort	May 8, 2020	10
4				
	Wk 6-7	Discussion 4	May 15, 2020	20
	Wk 6-7	Problem Set 4	May 15, 2020	80
	Wk 6-7	Progress Report 4	May 22, 2020	60
	Wk 6-7	Individual Assessments of Group-Work Effort	May 22, 2020	10
5				
	Wk 8-9	Discussion 5	May 29, 2019	20
	Wk 8-9	Problem Set 5	May 29, 2019	80
6				
	Wk 1-10	Final Group Presentation	June 4, 2020	130
	Wk 1-10	Final Group Report	June 9, 2020	130
	Wk 1-10	Individual Assessments of Group-Work Effort	June 9, 2020	40
		Total		1000

Written Report Rubric:

	A (Exceptional)	B (Acceptable)	C (Needs improvement)	D (Beginning Level)
Organization	Clear, concise title; Author names and affiliations, and date; Section and subsection headings numbered; page numbers; consistent font throughout the text; no typos or misspelled words; Avoids run-on; does not string thoughts together in a long & complex sentence; Avoids repetition across the different sections (Methods, Results, Discussion)	Document lacks some (but not most) of the listed elements for coherence and professionalism (Listed below in comments)	Document lack several of the listed elements (Listed below in comments)	Document obviously not proofread; different authors' sections clearly distinguishable in quality or tone; Weak or missing section and subsection organization
Abstract or Executive Summary	Includes a strong topic sentence, a clear problem statement, description of the status quo, summary of results, and key conclusions. Does not include citations, abbreviations, and acronyms.	Abstract lacks some (but not most) of the listed elements for a clear and concise summary (Listed below in comments)	Abstract lacks several of the listed elements for a clear and concise summary (Listed below in comments)	Abstract a direct copy of text within document; exceeds word limit; etc.
Introduction, background, and problem statement	Includes clear statement of problem/study objectives/hypotheses; Only relevant information/studies are included; status quo or statement of current knowledge clearly established; Concepts have clear connections and logical transitions	Acceptable problem statement but other elements of a coherent introduction are missing	Weak/vague/incomplete problem statement; Concept and ideas are loosely connected, lacks clear transitions; flow and organization are choppy	Missing problem statement; A number important concepts neglected entirely; Too much attention given to irrelevant topics and/or inaccurate information
Methods and study area	How/when/where data were collected and/or modeling/analysis approach is adequately described and justified; all methods are appropriately cited; equations are properly numbered and have all terms defined; Includes a map of the site (if appropriate)	Document lacks some (but not most) of the listed elements for coherence and professionalism (Listed below in comments)	Document lack several of the listed elements (Listed below in comments)	Methods do not provide adequate detail to repeat the study; missing map of the site
Results	Clear, concise, unbiased presentation of results; Strong topic sentences that are supported by subsequent text; organized in a way that links to problem statement or study objectives; tables and figures are referenced, as appropriate, to support statements about findings; Tables and figures are appropriately located, captioned, numbered, and referenced in the text	Document lacks some (but not most) of the listed elements for concise and coherent Results (Listed below in comments)	Document lack several of the listed elements (Listed below in comments)	Results reported as a blow-by-blow report of the data; lacks organization and alignment with study objectives; Tables/Figures not referenced or supportive of text.
Discussion and conclusions	Results and discussion are not the same thing. In the discussion, report presents a brief, cogent, interpretation of the results; draws the threads together to create something greater than the sum of the parts; brief and to the point; conclusions and recommendations explicitly stated; Relates results back to study objectives/problem statement	Document lacks some (but not most) of the listed elements for concise and coherent Results (Listed below in comments)	Document lack several of the listed elements (Listed below in comments)	Rambling; Conclusions and recommendations not clearly stated; duplicates content in Results
References and appendices	Referenced are correctly formatted; All references cited in the literature included in the literature cited; does not include references not cited	Document lacks some (but not most) of the listed elements for concise and coherent Results (Listed below in comments)	Document lack several of the listed elements (Listed below in comments)	References not formatted and/or missing.

Oral Presentation Rubric:

	A (Exceptional)	B (Acceptable)	C (Needs improvement)	D (Beginning Level)
Analysis of Content - set up	Hypothesis/problem clearly stated and justified; supporting evidence presented; varied use of materials	Sufficient relevant information; many good points made but justification hard to figure out. Problem statement not articulated or well-supported	Great deal of information that is not clearly connected to the problem analyzed.	Information not clear and supportive
Analysis of Content - Breadth	Sufficient abundance and relevance of information clearly related to problem/hypothesis; All aspects considered/emphasized at the right level	Aspects of problem mostly addressed and given the right level of attention; a few minor details not considered	Inappropriate balance of focus on various aspects of problem; too much/little attention given to concepts of little/great importance (respectively)	A number important concepts neglected entirely; Too much attention given to irrelevant topics and/or inaccurate information
Coherence and Organization	Hypothesis/problem clearly stated and developed; specific, relevant and controlled experimental examples, conclusion is clear and supported	Most information presented is logical and generally very well organized but better transitions are needed between experiments and results	Concept and ideas are loosely connected, lacks clear transitions; flow and organization are choppy	Presentation is choppy and disjointed, does not flow, development of hypothesis is vague, no apparent logical order of presentation
Creativity	Very original presentation of material; uses the unexpected to full advantage; captures the audience's attention; great interpretations	Some originality; good variety and blending of materials/media; good interpretations	Little or no variation; material presented with little interpretation	Repetitive with little or no variety; insufficient use of materials
Material	Balanced use of multimedia materials; properly integrated and analyzed	Needs additional integration; analysis is incomplete	Choppy use of multimedia; poorly integrated, minimal analysis	Little or no multimedia use; no integration or analysis
Speaking Skills	Very poised, clear articulation, proper volume, steady rate, good posture and eye contact; confidence	Clear articulation, poised and spoke with a steady rate	Some mumbling, little eye contact, uneven rate, little or no expression, relying too much on reading	Inaudible or too loud; no eye contact; rate too fast/slow, speaker seemed uninterested and use monotone
Audience	Involved the audience, points made in clear and creative ways, held the audience's attention	Presented facts with some interesting twists, held the audience's attention most of the time	Some related facts but went off topic and lose the audience	Incoherent, audience lost interest and could not determine the point of the presentation
Length of Presentation	Just right	A bit too long/short	Much too long - speakers not prepared	Not long enough - not enough information
Questions	Repeats/rephrases question, response well organized and clearly laid out, links key points of the issue within the broader context of the subject	Response meandered a bit but ultimately addressed question; some broader context	Response meanders greatly; some key points identified but not linked	Could not answer question