

GEOLOGY FIELD SCHOOL: PROJECT SKILLS AND ASSESSMENTS

WORK DUE DURING CAMP					
PROJECT	LOCATION	PURPOSE AND PROJECT ELEMENTS	GRADED ELEMENTS*	POINTS	DUE DATE
Exercise 1: Stratigraphic section description	Clark's Fork Canyon, Clark, WY; Mesozoic strata	<ul style="list-style-type: none"> * describe and name sedimentary rocks * describe and interpret contacts between beds * recognize and describe interbedding of various lithologies * describe and measure a sequence of rocks * construct columnar stratigraphic section 	<ul style="list-style-type: none"> * measurement and description of a sequence of Jurassic strata, using Jacob staff. * constructed columnar stratigraphic section * group and partner participation, maintaining safety in field, 	10	TBA; in field
Exercise 2: Traverse map and cross-section; Geologic Bedrock Map 1	Sheep Mountain Anticline, north of Greybull, WY	<ul style="list-style-type: none"> * to locate yourself on a map and in the field * read topographic contours * correlate between ground truth and the contour patterns on the map. * learn and practice traversing and traverse mapping * practice establishing stratigraphy * practice recognizing structural relations in field * map the geometric complexities of folded terranes * draw an accurate geologic cross-section 	<ul style="list-style-type: none"> * geologic map of the Sheep Mountain region * structural cross-section along given line A-A' * group and partner participation, maintaining safety in field 	20	TBA; in field
Exercise 3: Pace & Compass and Surficial Geologic Map 1	Mud Hen Butte, northwest of Powell, WY	<ul style="list-style-type: none"> * become proficient with the Brunton compass to take bearings and shoot angles. * create a reconnaissance map of a small area using only the resources at hand. * learn to take good field notes that are useful at a later time. * map surficial geologic units, and understand the stratigraphy of surficial rock units. 	<ul style="list-style-type: none"> * primary control loop, at scale 1:600 containing: initial primary control loop, with bearings and distances; the error of closure, in bearing and distance; the corrected location of each point; and the corrected control loop * control base map, at scale 1:600: showing the locations of all control points (with sight lines). * geologic map on field created control base map 	10	TBA; in field
Exercise 4: Elk Basin Oil Field, WY; Geologic Bedrock Map 2	Elk Basin Oil Field, WY	<ul style="list-style-type: none"> * construct a geologic map using traversing methods. * understand the geometries of faulted rock bodies, and the geometric complexities that result from faulting. * understand how faulting and folding are interrelated and affect each other. * learn how to extrapolate critical relations to large areas 	<ul style="list-style-type: none"> * geologic bedrock map * structural cross-section along given line A-A' * group and partner participation, maintaining safety in field 	20	TBA; in field
Exercise 5: Heart Mountain Fault; Geologic Bedrock Map 3	Dead Indian Hill, Chief Joseph Highway	<ul style="list-style-type: none"> * construct a geologic map using traversing methods. * identifying relationship between bedrock from soil types * understand the geometries of faulted rock bodies, and the geometric complexities that result from faulting. * understand how faulting and folding are interrelated and affect each other. * learn how to extrapolate critical relations to large areas 	<ul style="list-style-type: none"> * geologic bedrock map * structural cross-section along given line A-A' * presentation explaining the structural geology in the map area, and giving the sequence of geologic events in the evolution of the area * group and partner participation, maintaining safety in field 	20	TBA; in field

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Field notebook			Material graded includes: * Completeness of the notes taken. * Continuity of the notes throughout the summer, an entry for every day, an entry for every project. * Includes material specifically instructed to enter in the notebook. * Use of sketches, drawings, maps, tables of data, columnar-section representation of information	15	TBA; in field
Attitude and Improvement		<ul style="list-style-type: none"> * gain intellectual independence and individual initiative * maintaining drive and intellectual effort * helping and cooperating on teams * helping with group effort * maintaining safe practices in field work 	<ul style="list-style-type: none"> * overall assessment of instructor and peer evaluation of group and partner participation, maintaining safety in field, individual improvement, soft skills, etc 	15	ongoing
TOTAL FIELD EXERCISES				110	
<i>Unless otherwise directed, all exercises must be completed in the field and will be collected each day as we leave the field. Grading of exercises will include evaluation of accuracy, graphics, neatness, as well as a peer evaluation of teamwork and partner safety.</i>					

WORK DUE BEFORE AND AFTER CAMP					
ITEM			GRADED ELEMENTS	POINTS	DUE DATE
Preparatory report on Bighorn Basin			Comprehensive discussion of: * general geologic setting of Bighorn Basin. * discussion of the Phanerozoic stratigraphy of the area. * geomorphology and geomorphic history of the area. * discussion of the structural geology and tectonic framework * generalized geologic history, and sequence of geologic events, of the Wyoming region. * proper and citation of references.	15	first night of field camp in Powell, WY - submit by email
Stratigraphic column			<ul style="list-style-type: none"> * Comprehensive stratigraphic section, combining data from literature with contributions from all exercise locations including Clarks Fork Canyon, Sheep Mountain, Mud Hen Butte, Rattlesnake Mountain, Elk Basin, and Dead Indian Hill. * Section should summarize all the stratigraphic, lithologic, faunal and other information you collected via outcrop studies throughout the field camp. 	10	1-Jul
TOTAL POST-CAMP WORK				25	
TOTAL POSSIBLE POINTS				135	