Course Outline

Instructors: Dr. Harry Williams and Dr. Kate Imy

Office: EESAT 210G
Phone: 565-3317

Course Description:
This course gives students direct experience in applying geographical field techniques in a foreign setting - the British Isles and Ireland. The field school will be centered on five base sites - Plymouth, Cork, Galway, Bangor and Edinburgh. At each site, students will conduct one-day human and physical geography field exercises, designed to provide training in various field techniques. Duration of the field school will be approximately three weeks.

Course Objective
One objective of the course is to give students direct experience in applying geographical field techniques in a foreign setting. A second objective is to expose students to a different culture, broadening and enriching their geographic perspectives and providing an international component to their educational experience at UNT.

Course Grade:
Your grade will be based on participation in field exercises and 10 written reports (one covering each field exercise). Each field exercise requires 8-9 hours of field work, wherein students collect field data to use in their report (examples of field data include stream channel width, depth, cross sectional area and slope; mapping of a 1 mile stretch of cliff edge; questionnaire survey responses from a sample of the public). Written reports typically require tables of data, graphs of data, use of mathematical equations and a written description of field methodology, analysis of results and conclusions. Each field exercise begins with a brief introductory lecture covering data collection methods, accompanied by a handout containing background, objectives, methods and write up requirements. Additional instruction, guidance and feedback is provided throughout the fieldwork, as needed.

Course Text Book:
British Isles Field School Notes and Exercise Packet (produced by instructors).

The Department of Geography, in cooperation with the Office of Disability Accommodation, complies with the Americans with Disabilities Act in making reasonable accommodations for qualified students with disabilities. Please present your written request before the 4th class day so that I can make the necessary arrangements needed.
Sunday July 8: Depart DFW for London Heathrow.
Monday July 9: Arrive London Heathrow; meet at Terminal 5 arrivals area at 9.30. Drive to Plymouth
Tuesday 10: Stream morphology on Dartmoor
Wednesday 11: Historic changes in commercial function - Plymouth harbor
Thursday 12: Free day
Friday 13: Drive/ferry to Cork
Saturday 14: Coastal erosion at Ballycotton Bay
Sunday 15: Cork historical geography survey
Monday 16: Free day
Tuesday 17: Drive to Galway
Wednesday 18: Field reconstruction of glacier movement - Clew Bay
Thursday 19: Free day
Friday 20: Mental mapping of Galway
Saturday 21: Drive/ferry to Bangor
Sunday 22: Beach morphology and sediment transport at Llandudno
Monday 23: Tourism survey at Llandudno and Rhyl
Tuesday 24: Free day
Wednesday 25: Drive to Edinburgh
Thursday 26: Reconstructing Edinburgh's ancient volcanic landscape
Friday 27: Survey of historical town planning in Edinburgh
Saturday 28: Free day
Sunday 29: Drive to London – stay at hotel near Heathrow
Monday 30: Depart for DFW (unless staying on to explore Europe).

Summary of Field Exercises:

Exercise 1: Stream morphology on Dartmoor: this exercise examines Narrator Brook on Dartmoor. The brook displays an interesting transition from a steeply sloping, wide, shallow, straight bedrock channel with forested banks upstream, to a more gently sloping, deep, narrow, meandering, alluvial channel with grassy banks downstream. The exercise uses some basic field techniques to examine the relationship between stream form (morphology) and process (water flow). Field data Collection: a) use tapes and meter rules to measure bankfull channel width and depth at three locations on the upstream reach and three locations on the downstream reach b) use a handheld Abney Level to measure channel slope at each of the six locations. Analysis/write up: a) use a graphical method to calculate cross-sectional area of channel for the six locations b) use an empirical equation to estimate stream discharge for each location c) plot field measurements on a graph to test another empirical model linking stream planform, discharge and slope d) use a graphical method to calculate drainage basin area from a map of the study area e) test an empirical model linking stream discharge and drainage basin area.

Exercise 2: Historic changes in commercial function - Plymouth harbor: Plymouth’s Sutton Harbor is in a period of transition. Essentially the change is from commercial and industrial port related land uses to those related to tourism, recreation, leisure, and high class residential
property. At the same time, the area has been changing its social and demographic character; the long established local harbor community is gradually disappearing, to be replaced by a more cosmopolitan population, as well as non-residential land uses. The aim of the fieldwork is to do a walking-based reconnaissance of the land use changes around Sutton Harbor, during this transition stage. To track the changes in function in the Sutton Harbor area use a map for Sutton Harbor streets and pages from the 1955 Kelly Post Office Directory of Plymouth and District. The directory lists the residential and/or business listing for each of the street addresses in 1955. By cataloging the changes in function between the 1955 description and the current function we can document the extent to which the harbor area has changed (for example, 1955-warehouse, 2016-apartments). The written report must contain a table detailing your findings and answers to these specific questions: 1. What were the main land uses in 1955 and what are they now? 2. What are the approximate ages of the buildings? Are they new, old, historical… and does it vary across space? 3. What is the quality of the buildings and does it vary across space? 4. What are the most recent/future developments taking place around the harbor? 5. How has recent development of the area changed the appearance of Sutton Harbor? 6. Who is the target market for the redevelopment activity?

Exercise 3: Coastal erosion at Ballycotton Bay: in this study students examine and map a one-mile stretch of coastal cliffs at Ballycotton. This part of the Irish coast is subject to strong wave attack and the coast here has undergone considerable erosion. Field work: a) reconnaissance of the entire stretch of coastline to observe and map (onto a supplied base map) evidence of erosion (example, rock falls, undercutting) and erosion-control measures (examples, rip rap, fences, retaining walls) b) map onto the supplied base map the extent of each of the three cliff materials (bedrock-glacial deposits- peat) c) using the 1937 base map as a guide, locate reference points along the cliff top and use tapes to measure the straight-line distance to the cliff edge d) calculate the straight-line distance between the same reference points and the cliff edge as shown on the 1937 base map. Analysis/write up: a) mapping - transfer onto tracing paper the current cliff edge and the cliff edge as shown on the 1937 base map b) create a table showing current distance to cliff edge, distance in 1937, amount of erosion (1937 to current) and erosion expressed as a rate in feet per year c) write up your findings covering spatial pattern of erosion rates, effect of cliff material on erosion, apparent effectiveness of erosion control measures.

Exercise 4: Cork historical geography survey: to the extent that evidence of previous rounds of development is still evident, urban landscapes represent layers of history through time. This is especially the case in European countries where limited land availability and transportation options forced cities to remain relatively small, compact and dense. The purpose of this exercise is to identify and evaluate physical and symbolic evidence of “old” Cork, e.g., buildings, ruins, symbols, etc. within the current central city area and to evaluate the extent to which they are integrated – e.g., functional, tourist, symbolic – into the current geography of the city. Field work: a) use a supplied base map of historical sites to identify where sites from each century (16th, 17th, 18th and 19th century) are located b) walking-based reconnaissance to visit each site and record its current state of presentation (examples, does it have a historical marker? Is it functional? A ruin?... and so on) c) mark each site on the supplied “century” maps (16th century map of Cork’s boundaries, 17th century map of Cork’s boundaries, and so on). Analysis/write up: a) century maps with sites located and identified b) written report broken out by century,
including 1) the extent of the evidence, 2) the dominant types of evidence (examples, physical structures (e.g., buildings, bridges, steps, etc., or pieces of physical structures (i.e., ruins), symbolic evidence – statues, informational signs, or other symbols – commemorating events or places, infilling of some of the river channels or changes in street names) 3) the clarity and functionality of the evidence, and 4) its current state of repair.

Exercise 5: Field reconstruction of glacier movement - Clew Bay: this study examines the glaciated landscape of Clew Bay in northwest Ireland. Fieldwork: a) use a compass to measure the orientation of drumlins in Clew Bay b) conduct a till fabric analysis of the lodgment till on the north shore of the bay to determine the preferred orientation (if any) of pebbles within the till (use a sample size of 100 pebbles) c) at Finny, use a compass to measure the orientation of the long axis of a drumlin and use an Abney level to measure slope at each end of the drumlin d) use a compass to measure the average orientation of the striations about 500 m to the east.

Analysis/write up: a) construct a rose diagram on the supplied graph paper showing preferred orientation of pebbles within the lodgment till; calculate the modal azimuth, mean azimuth and standard deviation; conduct a test against randomness b) on the supplied base map, add bold lines to show the orientation of drumlins in Clew Bay, the preferred orientation of the lodgment till, the orientation of the drumlin near Finny and the orientation of the striations near Finny; add arrowheads to show ice flow direction c) write up the report including field measurements, calculations, the base map and comments on methods and results (example, which way did the ice flow through Clew Bay?).

Exercise 6: Mental mapping of Galway: this exercise concerns how we conceive of space and place. Central to this are the notions of our mental images and the way we mentally filter and organize the world in which we live. Five elements help us to see the environmental image of a city. Districts are structured with nodes, defined by edges, penetrated by paths, and sprinkled with landmarks (handout contains examples). Fieldwork: a) in pairs of two, students are dropped off at various locations about 1 to 2 miles from Galway city center. Each student will construct a mental map of the route they chose to get to the center of the city (Eyre Square). Once you reach Eyre Square wait for everyone else to arrive. Then each student will switch maps with someone else and (again in pairs) use their mental map to navigate back to where they started.

Analysis/write up: a) Identify, describe and explain your choice of elements for your map (districts, nodes, edges, paths, landmarks) b) compare and contrast your map and the map supplied by another student (same mix of elements? similar approach? how well did the supplied map enable you to navigate back to the starting point?) (include your map in the report).

Exercise 7: Beach morphology and sediment transport at Llandudno: this study examines morphology and particle size characteristics of a shingle (pebbly) beach at Llandudno on the north coast of Wales. The research hypothesis is that the pebbles have been derived from wave erosion of Little Ormes Head (a headland) immediately to the northeast of the beach. It is further hypothesized that wave-generated longshore drift has transported the pebbles to the southwest to help form the beach and sorting and abrasion has decreased pebble sizes in the alongshore direction. Fieldwork: a) at five designated sampling points measure the beach profile using the tapes, meter rules and Abney levels b) divide each profile into uniform particle size zones and determine the mean particle size within each zone based on the average long axis dimension of a
sample of 20 particles - use systematic sampling with a random start. Analysis/write up: a) plot
each beach profile and mean particle size results on graph paper b) do the profiles seem to
conform to the “standard” beach profile? (supplied) c) do all five profiles seem similar, or are
there obvious differences? – elaborate. Are there any apparent relationships between particle size
and slope? Particle size and berm height? d) Use a statistical test (Mann-Whitney U test) to
determine if the mean size of particles in the beach berm significantly decreases from northeast
to northwest e) plot the mean size of the beach berm samples against distance along the beach on
graph paper f) write up should include all graphs, mathematical calculations and your
conclusions (example, does beach particle size decrease to the northeast?).

Exercise 8: Tourism survey at Llandudno and Rhyl: this exercise is designed to teach observation
and interview techniques by comparing the physical structure of two Welsh tourist resorts and
interviewing the people that visit them. Llandudno and Rhyl are very different types of place and
your task is to document some of these differences. Llandudno has kept its Victorian and
Edwardian elegance and splendor, despite its modern attractions. Rhyl has declined significantly
since its “heyday” in the 1960’s. Fieldwork: a) conduct a walking-based reconnaissance survey to
gain some general impressions of the type of attractions available at each resort and the general
condition of the tourist areas b) use a random sampling technique (see handout) to select
members of the public to interview, asking them the questions on the supplied questionnaire.
Analysis/write up: a) document your observations on the two resorts b) document how you
developed your sampling methodology c) using the questionnaire responses, answer the question,
“Do different types of people visit each of the towns, and why?”.

Exercise 9: Reconstructing Edinburgh's ancient volcanic landscape: Holyrood Park contains
arguably the most famous volcanic features in the world - these features were studied by (and
influenced the views of) James Hutton, widely accepted as the founder of modern geology.
Fieldwork: a) students conduct a walking-based reconnaissance of a number of geologic features
in Holyrood Park designed to sharpen field observation skills, ability to recognize geologic
features and interpret evidence of geologic processes and former environments. Some
information (e.g. the age of rocks) is beyond the scope of a one-day exercise and is furnished for
you. Analysis/write up: produce an illustrated interpretive guide to the geologic history of the
park suitable for tourists; the interpretative guide must include a description of the geologic
feature/interpretation at each stop and a series of west-east cross-sections (drawn by you)
illustrating the geologic history of the park.

Exercise 10: Survey of historical town planning in Edinburgh: the aim of this exercise is to
encourage independent learning and to develop knowledge and understanding of the kind of
environments associated with the early development of urban planning as exemplified by parts of
Edinburgh. In addition it should further hone your observation skills. The goal is to gain a better
understanding of the origins of urban planning and see urban environments in a more
professional way. The route is organized on a chronological basis to emphasize the movement
towards statutory (legal) system of urban planning that exists in the UK (and the U.S.) today.
Fieldwork: participate in an instructor-led walking-based survey covering the Old Town
(medieval to mid-18th century), the 1st New Town area (18th-19th century) and the 2nd New
Town area (18th century to modern day) -distinguished by contrasting planning and architecture.
Analysis/write up: select a U.S. city and discuss its physical growth in broad strokes framing it in the observations you’ve made today. For example, does the city you are detailing have planned residential developments designed to attract residents who are in a higher income bracket? What are those developments like physically? Is there a residential section that was once thriving for one community, since blighted, and now thriving for another community? Is there a section of the city where a street is a popular place to sell goods even though there are stores nearby? Are there any projects that are a result of public/private partnerships? Are there specific buildings that served one purpose initially, but have been adaptively reused and now serve an entirely different purpose? Your primarily information will come from memories regarding your city, but augmented with insights gained from your observations of Edinburgh.