

# EXPERIMENTAL ARCHAEOLOGY AND MATERIALITY OF THE HIGH MEDIEVAL PERIOD AT FERRYCARRIG, IRELAND

*Course ID: ARCH 365BB*

*July 14 – August 10, 2024*

**Academic Credits: 6 Semester Credit Units**

## **FIELD SCHOOL DIRECTORS (not including associate staff):**

*Dr Brendan O' Neill*, University College Dublin ([brendan.oneill@ucd.ie](mailto:brendan.oneill@ucd.ie) )

*Dr Stephen Mandal*, Irish Archaeology Field School ([stephen.mandal@crds.ie](mailto:stephen.mandal@crds.ie))

*Derek O' Brien*, Irish National Heritage Park ([derek@irishheritage.ie](mailto:derek@irishheritage.ie))



## **OVERVIEW**

The program provides a practical introduction to the role of crafts, technologies and construction techniques in Ireland through time. Focusing on both the built environment and materiality from prehistory to the later medieval period, students will actively participate in a range of bespoke experimental archaeology workshops and building projects. Through participation on this program, students will be equipped with a good understanding of Irish society through time, with a specific focus on the role of technologies and materiality in people's lives. The program also teaches many 'life-skills'

such as creativity, problem solving, teamwork, time management, resourcefulness and project design and implementation.

One unique aspect of this program is its collaboration with a leading archaeological research excavation, *Digging the Lost Town of Carrig*. This excavation was active from 2018 to 2022 with post-excavation and specialist analyses ongoing. The *Digging the Lost Town of Carrig* project forms the inspiration for several of the programs later experiments, with large portions of the program being delivered adjacent to an authentic *ringwork* castle (the Carrick ringwork), within the confines of the Irish National Heritage Park (INHP) in Wexford, southeast Ireland. This ringwork is one of Ireland's most important medieval monuments and crucial to the earliest stages of the Anglo-Norman invasion of Ireland, being the first Anglo-Norman fortification built in the country in 1169 CE. Archaeological excavations at the site by the IAFS from 2018 to 2022 showed that significant evidence of the site's medieval history is preserved below the ground – including remnants of a 12<sup>th</sup> century fort with wooden structures, 13<sup>th</sup> century stone castle and 14<sup>th</sup> century hall and chapel. Combining the results of these excavations with on-site experimental archaeology projects lends this program exceptional authenticity and added significance.

Another unique aspect of this program is the partnership with the INHP - Ireland's largest open-air museum, measuring 35 acres (14 hectares). The park depicts 9000 years of re-created history, from first settlers to the coming of the Anglo-Normans, situated within natural forestry and wet woodlands. The park is a cornerstone of *Ireland's Ancient East* and provides a stunning backdrop to the program. INHP specializes in communicating heritage to the local community and wider public, including through the provision of experimental archaeology initiatives and craft workshops. During their time in the park students will be taught an appreciation on the importance of communicating heritage, and the role experimental archaeology can play in this. The program is underpinned by its location in the park, with several modules, such as those on stone manufacture, casting, stone masonry etc., inspired by the park's various replica buildings.

The program is delivered by the Irish Archaeology Field School (IAFS), Dr Brendan O' Neill of University College Dublin (UCD) (one of the world's leading experimental archaeologists), and a range of associate staff and specialists. Arising from the strengths of the partnership between the IAFS, UCD and the INHP, students can expect to not only be provided exceptional standards in teaching but also leave a lasting legacy in the INHP as much of their work will form permanent exhibits and act as an educative resource for the park – allowing future visitors and students a chance to better comprehend Irish prehistory and history in an experiential manner.

While on the program students will be housed in homestay accommodation in rural locations. Their closest major town is the stunning medieval centre of Wexford Town.

### *Wexford Town*

Wexford town is nestled on the estuary of the River Slaney, on the southeast coast of Ireland. The town is one of the country's great Viking and medieval townscapes, with intact medieval streetscapes and numerous upstanding archaeological monuments. The town of Wexford is named from the Norse "Waesfiord", meaning "the inlet of mudflats", a clear reminder of its Viking Heritage, which dates from the early 9<sup>th</sup> century CE. Since the Viking period the beautiful port town has been impacted by foreign invaders, sieges, a famous insurrection and the gradual decline of its once crucial maritime industries.

One of the most significant historical events to impact Wexford (and Ireland) occurred in May of 1169, when a force of roughly 500-600 Anglo-Norman and c. 500 Irish soldiers, led by Robert Fitzstephen, Maurice de Prendergast and the recently deposed Irish king of Leinster, Diarmait Mac Murchada, attacked and defeated the Norse-Irish town of Wexford. Following the capture of Wexford Mac Murchada granted lands, including the Norse town itself, to Robert Fitzstephen and Maurice Fitz Gerald.

In an effort to fortify the region Robert Fitzstephen built a wooden 'ringwork' castle on top of a large rock at Ferrycarrig, directly overlooking a strategic point on the River Slaney (approximately 4km west of the town). This ringwork is only 'authentic' archaeological site in the INHP and, as stated, inspires large portions of the experimental archaeology program.

Today, Wexford is a good size provincial town by Irish standards, equipped with all major services, good public transport and a good range of eateries, bars etc. Everything you will need to know about 'modern' Wexford is easily accessible online.

### ACADEMIC CREDIT UNITS & TRANSCRIPTS

**Credit Units:** Attending students will be awarded 6 semester credit units through our academic partner, Connecticut College. Connecticut College is a highly ranked liberal arts institution with a deep commitment to undergraduate education. Students will receive a letter grade for attending this field school (see assessment, below). This field school provides a minimum of 300 hours of experiential education. Students are encouraged to discuss the transferability of credit units with faculty and registrars at their home institution prior to attending this field school.

**Transcripts:** An official copy of transcripts will be mailed to the permanent address listed by students on their online application. One more transcript may be sent to the student's home institution at no cost. Additional transcripts may be ordered at any time through the [National Student Clearinghouse](#).

### PREREQUISITES

There are no academic prerequisites. This program is hands-on, experiential learning in a live field environment. What is required is enthusiasm, an open mind and a readiness to 'give it a go'.

### COURSE OBJECTIVES

The program will introduce students to a range of traditional building techniques as well as past crafts and technologies in Ireland through time. During this four-week program at the INHP students will deliver their own unique project(s), helping in both project design and implementation. Student learning will be complimented by tours to several heritage sites, as well as a series of archaeological lectures/workshops. After this program, students will:

- Have an understanding of traditional skills, crafts and technologies.
- Understand the background of experimental archaeology in Ireland.
- Critically interrogate historical records and archaeological survey data, as part of an overall project design.
- Deliver unique legacy project(s), which will become part of the park's teaching resource.
- Have a basic understanding of both prehistoric and medieval Ireland and Wexford.
- Understand how heritage can be explained and presented in an engaging manner to visitors and the community alike – especially in the context of an open-air museum.
- Gain a base understanding of changing materiality in Ireland through time, before focusing on the medieval period and the connections between the park and the recent *Digging the Lost Town of Carrig's* project.

## ASSESSMENT

**Field school Participation (50%):** Students are required to participate in all field school activities, including research, archaeological survey, archaeological experiments and laboratory work. Assessment will be undertaken by the supervisory team and will be based on attendance, willingness to work and to try diverse tasks, attention to detail and accuracy, participation in teamwork and contribution to discussions.

**Field Journal (35%):** Students are expected to complete a field school journal and present it for evaluation during their final week on site. Project staff will instruct students on the expectations for journal entries.

**Presentation/Story Board (15%):** At the end of Week 4, students will be required to give a c. 10-minute presentation on a research topic of their choice, but which must be related to the program strands. The presentation will be given to the group and should be supported by a powerpoint or other visual aids, such a story board. The powerpoint/story board may be requested as a PDF submission by the program Directors.

## COURSE SCHEDULE

All IFR field schools begin with a safety orientation. This orientation addresses local and program protocols concerning student behavior, appropriate attire, local practices and sensibilities that may be unfamiliar, potential fauna and flora hazards, IFR harassment and discrimination policies, and the student Code of Conduct.

## FIELD PROGRAM

The field program, while focused on experimental archaeology, includes instruction on Irish prehistory/history and the archaeology of the medieval period in general. The program is based on the Ferrycarrig site in Wexford, although students will also be brought to regional heritage sites. Site and project orientations will be conducted at the start of week one.

**Week 1:** Following project orientation, students will be brought to a number of regional heritage sites, before participating in an in-depth orientation on the INHP, and its only authentic monument, Carrick archaeological site (including its artefacts, archaeological features etc.). Students will then begin their chronological journey through Irish materiality starting in our stone age; students will be guided through age-old processes of stone selection, procurement and working (knapping) with a teaching emphasis placed on the transition to bronze working c. four and a half thousand years ago.

**Week 2:** Students will be introduced to Bronze Age life. Students should expect to be introduced to their first legacy project. In 2023, as an example, students constructed their own *fulachta fia*. Fulachta are one of Ireland's most numerous (c. 6600 recorded on our *Archaeological Survey of Ireland*) but still enigmatic monuments having been variously associated by archaeologists to cooking, textile production, bathing, saunas and even brewing. Even their antiquity is not fully established, and whilst most frequently dating to the Middle Bronze Age (c. four thousand years ago), they extend to several centuries (and in some instances millennia) either side of this date. In creating their own fulacht, the 2023 students got an experiential understanding to Bronze Age society, whilst also leaving a permanent exhibit in the park on their departure. A similar project is currently being discussed for the 2024 students.

**Week 3:** Inspired by the park's early medieval monastery, students will work on their second legacy project, namely the construction of a 'bee bole wall', using authentic medieval mortars and techniques. Dependent on student numbers the group may be split and rotated through different stonework

projects, which will run simultaneously. It may only be possible to complete one of these projects within the program timeframe. Working on these projects will equip students with a clear understanding of medieval construction techniques, with the program ultimately contributing an exhibit for the open air-museum, which can be used to relay the importance of bee-keeping, and its vivid associated regional folklore, to visitors to the park.

**Week 4:** Students will return to a range of experiments inspired by the past archaeological results from Carrick. This season the experiments will most likely focus on pottery manufacture and/or casting. Students will be expected to construct both coil/hand-built pots and wheel thrown pots (on medieval replica pottery wheels) – leading to an understanding of the crucial importance of the pottery wheel to medieval society. Time permitting, and dependent on student numbers, the final week may also be an introduction to iron smelting and bronze casting – producing both raw iron and finished artefacts that would have commonly been seen at Carrick in the medieval period. Through these final experimental archaeology workshops, and cognate field trips, students gain an insight to medieval society at the Carrick site in the twelfth and thirteenth centuries, and how this site, considering its existence as the only authentic monument in the park, is crucial to the overall prestige of the INHP.

## **SCHEDULE**

In addition to working on site, students will be introduced to Irish archaeology through a series of lectures/workshops. Students are given free time on their weekends, to allow them to explore Ireland.

The normal working day is from 9:00 am to 5pm with a morning tea break from 11:00-11:30 am and lunch from 1:30-2:15pm.

Please note that the following schedule is indicative of the work students will undertake on the program. Since this program focuses on community heritage, exact projects and schedule will be established closer to the Field School start date, in consultation with the INHP and local communities.

[Indicative schedule follows on next page]

INDICATIVE SCHEDULE WEEKS 1 & 2

Schedule for illustrative purposes only; subject to change

Week	Day	Date	Time	Event
1	Sun	Jul-14	Afternoon	Students arrival and welcome meeting
	Mon	Jul-15	Morning	Lecture/Project Orientation (including an introduction to the INHP and the archaeological site of Carrick with Dr Stephen Mandal)
			Afternoon	Field trip 1: Tour of INHP and visit to Carrick Town (with Dr Stephen Mandal)
	Tue	Jul-16	All day	Prehistory (with Dr Brendan O' Neill): Inspired by the sites Mesolithic, Neolithic and early Bronze Age site students will be guided through the processes of stone selection, procurement and working (knapping) with a teaching emphasis placed on the transition to bronze working c. four and a half thousand years ago.
	Wed	Jul-17	All day	Field trip 2: Tour of Knockroe passage tomb and/or St Mullins (with Dr Stephen Mandal)
	Thu	Jul-18	All day	Prehistory (with Dr Brendan O' Neill): as above
	Fri	Jul-19	All day	Prehistory (with Dr Brendan O' Neill): as above
	Sat	Jul-20	All day	Free Day
	Sun	Jul-21	All day	Free Day
2	Mon	Jul-22	All day	Legacy project/fulacht fia (with IAFS and INHP staff): Fulachta fia are one of Ireland's most numerous (c. 6600 recorded on our <i>Archaeological Survey of Ireland</i> ) but still enigmatic monuments having been variously associated by archaeologists to cooking, textile production, bathing, saunas and even brewing. Even their antiquity is not fully established and whilst most frequently dating to the Middle Bronze Age (c. two thousand years ago) they extend to several centuries (and in some instance millennia) either side of this date. Students will be tasked with creating their own Fulacht in the INHP, which will form a permanent exhibit in the park - in the process learning about Bronze Age life and society.
			All day	Legacy project/fulacht fia (with IAFS and INHP staff)
	Tue	Jul-23	All day	Legacy project/fulacht fia (with IAFS and INHP staff)
			Morning	Optional journal submission for initial review/feedback
	Wed	Jul-24	All day	<b>Field trip 3:</b> Glendalough early medieval monastery (with Lauren Goodall Byrne (including a stop in Ferns on return/time permitting)
			All day	Legacy project/fulacht fia (with IAFS and INHP staff): as above
	Thu	Jul-25	All day	Legacy project/fulacht fia (with IAFS and INHP staff): as above
	Fri	Jul-26	All day	Legacy project/fulacht fia (with IAFS and INHP staff): as above
Sat	Jul-27	All day	Free Day	
Sun	Jul-28	All day	Free Day	

**INDICATIVE SCHEDULE WEEKS 3 & 4 (continued)**

Week	Day	Date	Time	Event
3 E a r l y  M e d i e v a l	Mon	Jul-29	All day	Legacy project/medieval masonry (with IAFS and INHP staff): Inspired by the early medieval monastery of the INHP students will learn traditional stone masonry skills. Dependent on the student numbers and speed of progress students will contribute to a second legacy project, such as the construction of a bee bole wall. This wall will help explain the importance of bees in early medieval site and the key significance they play in folklore associated with Wexford's most famous Saint, St Aidan and his tuition under the patron Saint of Wales, St David.
	Tue	Jul-30	All day	Legacy project/medieval masonry (with IAFS and INHP staff): as above
	Wed	Jul-31	All day	<b>Field trip 4:</b> University College Dublin (and the National Museum of Ireland - time permitting)
	Thu	Aug-01	All day	Legacy project/medieval masonry (with IAFS and INHP staff): as above
	Fri	Aug-02	All day	Legacy project/medieval masonry (with IAFS and INHP staff): as above
	Sat	Aug-03	All day	Free Day
	Sun	Aug-04	All day	Free Day
	4 M e d i e v a l	Mon	Aug-05	All day
Tue		Aug-06	All day	Medieval pottery (with Dr Brendan O' Neill): as above
Wed		Aug-07	All day	<b>Field trip 5:</b> Anglo-Norman Wexford - Hook lighthouse & Tintern Abbey (with Lauren Byrne)
Thu		Aug-08	Morning	Medieval furnace and metallurgy (with Dr Brendan O' Neill): students will build a furnace, inspired by features from the Carrick 2018-2022 excavation, before smelting iron – which includes processing of charcoal, temperature control/bellowing, processing of raw bog-ore, hammering etc.
			Afternoon	Journal submission
Fri		Aug-09	All day	Cultural Day - Medieval Feast (with all instructors): Using several of the skills learnt during the program students will be expected to design and deliver their own 'feast', including all preparation of food, construction of cooking areas (if required), seating etc. Students will also present their storyboards/powerpoints on this day.
Sat		Aug-10	Morning	Depart program

*\*Please note the following: The exact content of Week 2 is still to be decided with the INHP but is likely to be based on a Bronze Age or Iron Age project. Further changes to this schedule will also occur due to factors beyond our control such as weather, etc. Sessions may also be extended or curtailed, based on student progress, or replaced with other experimental sessions, if necessary. Dependent on student numbers the group may be split and rotated*

through these projects simultaneously. Students on this program make an active contribution to the exhibits in the INHP; as such content may be changed if more urgent projects are identified which will assist the INHPs mission of educating the general public. Additional projects may also be added, or removed, in individual seasons to accommodate unusually high or low student numbers. Students will be expected to explain their work to the general public whilst in the park; this may include the researching and preparation of dedicated signage and/or online promotional materials during their time on the program.

## RECOMMENDED READINGS

- Crew, O. 2013. Twenty-five years of bloomery experiments: perspectives and prospects. In D. Dungworth and R. Doonan (eds). *Accidental and Experimental Archaeometallurgy*. HMS Occasional Publication, No 7. 25-50.
- Crothers, M. 2007. Experimental archaeology within the heritage industry: Publicity and the public at West Stow Anglo-Saxon village. In P. Cunningham, J. Heeb and R. Paardekooper. *Experiencing Archaeology by Experiment: Proceedings of the Experimental Archaeology Conference*. Exeter.
- Reynolds, P. 1999. Butser Ancient Farm, Hampshire, UK. In P. G. Stone and P. G. Planel (eds.). *The Constructed Past; Experimental Archaeology, Education and the Public*. Rotuledge. London. 124-135.
- Sørensen, T. and O'Sullivan, A. 2014. Experimental archaeology in Ireland: its past and potential future. In Reeves Flores, J. and R. Paardekooper (eds). *Experiments Past: Histories of Experimental Archaeology*. Sidestone Press. Leiden. 47-66.
- Shine, D., Potterton, M., Mandal, S. and McLoughlin, C. (eds). 2019. *Carrick, County Wexford: Ireland's first Anglo-Norman stronghold*. Four Courts Press, Dublin. (Read as much as possible – the whole book is relevant).
- Shine, D. Mandal, S., Hayes, C. and Harris, M. 2018. Finding Carrig. *Archaeology Ireland*, 32 (2), 35-40.

## OTHER READINGS

- Colfer, B. 2002. *Arrogant Trespass: Anglo-Norman Wexford 1169-1400*. Duffry Press, Wexford, Chapters 1-4.
- Duffy, S. 1997. *Ireland in the Middle Ages*. Gill and Macmillan, Dublin.
- O' Keefe, T. 2015. *Medieval Irish Buildings 1100-1600*. Four Courts Press, Dublin
- O'Neill, B., and O'Sullivan, A. 2019. Experimental archaeology and (re)-experiencing the senses of the medieval world. In Skeates, R. and Day, J. (eds.). *The Routledge Handbook of Sensory Archaeology*. Routledge.
- O'Sullivan, A., Powers, M., Murphy, J., Inwood, N., Gilhooly, B., Kelly, N., Malone, W., Mulrooney, J., Corrigan, C., L'Estrange, M., Burke, A., Kazuro, M., McDermott, C., Warren, G., O'Neill, B. Heffernan, M. and Sweeney, M. 2014. 'Experimental archaeology: making; understanding; story-telling. In B. Kelly, N. Roycroft and M. Stanley (eds). *Fragments of Lives Past: archaeological objects from Irish road schemes*. National Roads Authority. Dublin. 115-126.
- Souyouzoglou-Haywood, C., and O'Sullivan, A. (eds.). 2019. *Experimental Archaeology: Making, Understanding, Story-telling*. Archaeopress.
- Waddell, J. 2022 (reprint). *The Prehistoric Archaeology of Ireland*. Wordwell. Dublin.



## PART II: TRAVEL, SAFETY & LOGISTICS

### NOTICE OF INHERENT RISK

Traveling and conducting field research can involve risk. The IFR engages in intensive review of each field school location and programming prior to approval. Once a program is accepted, the IFR reviews each program annually to make sure it still complies with all our standards and policies, including those pertaining to student safety. Participants should also take every reasonable step to reduce risk while on IFR programs, including following the safety advice and guidelines of your program director, being alert to your surroundings and conditions, letting someone know where you will be at all times, and assessing your personal security.

The IFR does not provide trip or travel cancellation insurance. We strongly encourage participants to consider purchasing this insurance, as unexpected events may prevent your participation or cause the program to be canceled. Insurance is a relatively small cost to protect your educational investment in an IFR program. When comparing trip cancellation insurance policies, make sure the policy covers the cost of both airfare and tuition.

We do our best to follow a schedule of activities, methods training, and programming as outlined in this syllabus. However, this schedule can be easily disrupted by unforeseen circumstances, including weather, revisions by local permitting agencies, or conditions onsite. While this schedule represents the intentions of the program, adaptability is an intrinsic part of all field research, and necessary alterations to the schedule may happen at any time.

If you have any medical concerns, please consult with your doctor. For all other concerns, please consult with the program director and staff.

### PROGRAM SPECIFIC FIELD CONDITIONS

You should be aware that conditions in the field are different from those you experience in your home, dorms or college town. Archaeological fieldwork in Ireland is carried out in all weather conditions – including rain. You are required to provide suitable waterproof and weatherproof clothing and footwear as well as wind protection. However, in bad weather you will also be provided with shelter. Program activities will include moderately strenuous physical work. Students should expect to walk up to three miles a day.

### LOCAL PROTOCOLS, REGULATIONS, & EXPECTATIONS

**Wexford:** Wexford is a relatively small, friendly and safe Irish town, some 140km south of Dublin. All the relevant local government agencies are aware of the students' presence, and they and all the people of the town are anxious to ensure that your stay is safe and enjoyable. Students are asked to respect local sensitivities and traditions and to understand that the presence of such a large team of outsiders in town does not entitle participants to any special treatment or privileges.

Although everyone will speak English, students should expect surprising cultural differences and exciting opportunities to learn about the lives of others as well. IFR students will be immersed in Irish culture through learning, language, food and music, and should be prepared for the rewards and challenges that life in a different culture will offer.

*Please note: As the project is a public archaeology initiative students must also be prepared to engage with the local community in a professional and respectful manner both in an official capacity on site and unofficially when off duty.*

## **VISA REQUIREMENTS**

Citizens of the US and Canada do not require visas to enter Ireland. You will need your passport to be valid for at least 90 days and will enter on a tourist visa. Citizens of other countries are asked to check the embassy website page at their home country for specific visa requirements

No other vaccinations are required for entry to Ireland but anyone working in archaeology in Ireland needs to have an up-to-date tetanus shot.

## **STUDENT HEALTH**

An IFR field school is designed to provide safe, positive, and constructive experiences for participating communities, students, and researchers. We are committed to protocols and practices that support the health and well-being of all involved in our field school projects, including the members of the community in which these projects take place.

We recommend that students adopt best-practices for arriving in a good state of health to protect themselves and their peers' readiness to set about the work of the field school. A thriving field camp environment is a constant exchange of energy, patience, effort, respect, and service. Arriving healthy is every student's first act of service — their first opportunity to behave in a way that respects the safety and wellness of one another.

## **TRAVEL (TO AND DURING THE PROGRAM)**

Natural disasters, political changes, weather conditions and various other factors may force the cancellation or alteration of a field school. IFR recommends students only purchase airline tickets that are fully refundable and consider travel insurance in case a program or travel plans must change for any reason. General information for this program is below, but keep in mind we will discuss any updated travel information and regulations during the required program orientation, which could affect travel plans.

Students will be met at Ferrycarrig, Co. Wexford. Since students will arrive on different flights at different times of the day, we will meet all students on Sunday, July 14th, at the Irish National Heritage Park at 4pm. Full details on reaching the park will be provided in the online orientation once you are enrolled in the course.

If you fail to make the meeting, please call/text or email Dr Stephen Mandal. You will be sent relevant contact details once you are enrolled in the course.

## **ACCOMMODATIONS**

Students will stay in homestay accommodation with local families. Typically students will be in a twin room and so will share with one other student. As students live with local families, they are afforded an experience of true home life in small town and rural Ireland, offering a wonderful opportunity to learn

about Irish culture firsthand. Students should understand that some host families will likely be in rural settings, requiring taxis to reach the town of Wexford. While host families may provide transportation into town on occasion, this is not expected of families and students should be prepared to arrange their own transportation, particularly for social gatherings. Breakfast and dinner will be provided at your host family's house, and provisions will be made for you to prepare a packed lunch to eat on site. Students may avail of their free time at weekends to explore Ireland.

As students are placed in homestay, all students have access to safe, sanitary accommodation as well as laundry, showering facilities etc. As noted above, homestay accommodation will include meals, including provisions for a packed lunch. Our homestay network caters for all main dietary requirements (vegetarian, vegan, nongluten etc.); they provide a well-balanced diet of Irish cuisine, but students should anticipate trying new cuisine and not having all the items they might expect at home. Students are welcome to bring some special treats or a small gift from home to share with their families.

## EQUIPMENT LIST

### PROJECT TOOL KIT

Students are required to bring a basic tool kit. This includes but is not limited to:

- Work **gloves**: gardening glove suitable for work in wet weather (textile glove with a rubberised palm).
- Work shoes or boots: **closed toe-footwear, waterproof** that will be comfortable for both walking and kneeling: a hiking style shoe or boot would be suitable. Gumboots/wellingtons are also suitable for use on site, however, if you choose to wear these on site, you may need a pair of trail shoes or similar for field trips etc.
- **Waterproof outerwear**: a jacket (with a hood) and pants – gore-tex is best (but expensive). You will need something sturdy that will stand up to wear and tear of everyday use on site. You can buy waterproof gear locally in Ireland (if you choose to do this, budget to spend about €50/\$70).
- **Warm layers** – wool, fleece, thermal layers – you should bring and wear lots of layers rather than one warm/heavy layer. Bring things that are suitable for outdoor work.
- **Sunscreen**: students should wear an SPF daily to protect against UV exposure and windburn.
- **Hat**: something to keep your head warm, and something to protect you from the sun. It will be cold and/or sunny.
- **Laptop/tablet**: a device on which you can prepare and submit your presentation. A smart phone is not suitable for this.