AE2042   3D Data and Visualization in Archaeology and Cultural Heritage Studies, 15 credits

3D data och visualisering inom arkeologi och kulturarvsstudier, 15 högskolepoäng
Second Cycle

Confirmation

This course syllabus was confirmed by Department of Historical Studies on 2021-12-10 to be valid from 2022-08-31, autumn semester of 2022.

Field of education: Arts 50% and Science 50%
Department: Department of Historical Studies

Position in the educational system

Stand-alone orientation course.

Main field of studies	*Specialization*
Archaeology	A1N, Second cycle, has only first-cycle course/s as entry requirements

Entry requirements

Admission to the course requires a Bachelor of Arts or the equivalent of 180 higher education credits, of which 90 credits within the disciplines of Archaeology, Classical Archaeology and Ancient History, Cultural Heritage Studies, or History. Option of courses within liberal arts but also social science like Digital humanities will be considered appliably. For Digital humanities the first year of courses (60 credits) is required.

Learning outcomes

On successful completion of the course the student will be able to:

Knowledge and understanding
- understand on a deeper level to produce advanced 3D data in line with best practice guidelines independently
- create low-poly, textured models for use in virtual exhibitions, publications, and games
- understand deeper the theoretical and ethical implications of virtual exhibitions and 3D reconstructions

Competence and skills
- plan and design a virtual exhibit of cultural heritage including paradata, metadata, and contextual information
- to know how to deliver it to the public, and guarantee the long-term sustainability of the work
- create a block-out of the planned exhibit
- make and place information in the exhibit
- find and plan a suitable scientific network to realize the exhibit

Judgement and approach
- evaluate the feasibility of digitizing and modelling specific cultural heritage to implement
  it into digital museums and exhibitions
- evaluate the compliance with ethical and best practice standards of planned digital exhibition

Course content

This course will provide students with the skills to create 3D models of cultural heritage for digital exhibitions. Such models are a valuable resource democratizing cultural heritage because it provides the chance to be distributed and displayed widely for analysis, display, and distribution. The course will also problematize digital exhibitions and museums and provide a deeper understanding of the surrounding ethical issues. A focus will be the complex issues surrounding the theory of digital archaeology including public archaeology, critical heritage management, and theories of human vision and data visualization which will be discussed critically and in depth.

The course follows a hands-on teaching philosophy acquainting students with 3D modelling software. Furthermore, it will refresh and deepen knowledge about techniques like photogrammetry, laser scanning, and other visualization methods. Focus will be put on models that can readily be integrated into digital exhibits and enable students to create their own 3D models and present them in a meaningful way. This includes a full understanding of the importance of para- and metadata, how to source these data in cooperation with museums and the private sector, and such data and its

interpretations can be presented ethically.

Since the course will focus on transferable skills, the teaching will offer long-term sustainability for the participants. As such, the course will enable students to acquire 3D data, formulate appropriate research questions, and answer them using a sound theoretical framework.

Form of teaching
The course will be taught with lectures, method training exercises, and seminars. It will also include self-organised learning and data acquisition.

Language of instruction: English
To foster international participation in line with the Policy for Internationalisation (Dnr V 2014/474) and the recommendations in the Red-19 report at the University of Gothenburg, the course will be taught in English.

Assessment
The course will be examined through individual project work including a written description, methods, work steps, analysis, and critical reflection. Small group or individual self-created projects that include the use of 3D data will be presented in seminars. Successful participation requires project work that passes, as well attendance at the seminars and training exercises. Verbal participation will be an additional factor.

A student who has taken two exams in a course or part of a course without obtaining a pass grade is entitled to the nomination of another examiner. The student needs to contact the department for a new examiner, preferably in writing, and this should be approved by the department unless there are special reasons to the contrary (Chapter 6 Section 22 of the Higher Education Ordinance).

If a student has received a recommendation from the University of Gothenburg for special educational support, where it is compatible with the learning outcomes of the course and provided that no unreasonable resources are required, the examiner may decide to allow the student to sit an adjusted exam or alternative form of assessment.

In the event that a course has ceased or undergone major changes, students are to be guaranteed at least three examination sessions (including the ordinary examination session) over a period of at least one year, but no more than two years, after the course has ceased/been changed. The same applies to placements and professional placements (VFU), although this is restricted to just one additional examination session.

Grades

The grading scale comprises: Pass with Distinction (VG), Pass (G) and Fail (U).

Course evaluation

Students have the opportunity to evaluate the course. The results of and possible changes to the course will be shared with students who participated in the evaluation and students who are starting the course.