



**LUND**  
UNIVERSITY

Faculties of Humanities and Theology

## **ARKN09, Archaeology and Ancient History: Digital Archaeology, GIS in Archaeology, 15 credits**

*Arkeologi och antikens historia: Digital arkeologi, GIS i arkeologi,  
15 högskolepoäng*

**Second Cycle / Avancerad nivå**

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### **Details of approval**

The syllabus was approved by The pro-dean for First-Cycle Studies at the Faculties of Humanities and Theology on 2012-02-15 to be valid from 2012-02-15, autumn semester 2012.

### **General Information**

The course is offered as a free-standing course. It can normally be included as part of a first- or second-cycle degree.

*Language of instruction:* English

#### *Main field of studies*

Archaeology and Ancient History with specialization in Historical Osteology

Archaeology and Ancient History with specialization in Historical Archaeology

Archaeology and Ancient History with specialization in Classical Archaeology and Ancient History

Archaeology and Ancient History with specialization in Archaeology

Archaeology and Ancient History

#### *Depth of study relative to the degree requirements*

A1N, Second cycle, has only first-cycle course/s as entry requirements

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### **Learning outcomes**

On completion of the course the students shall

### **Knowledge and understanding**

- be able to demonstrate thorough knowledge of the use of GIS in archaeology and its technology and applications in a broad sense in order to model, simulate, visualise and communicate archaeological data and interpretations
- be able to make clear and communicate in speech, images and writing how this research field enlarges our knowledge of human beings and their historical context

### **Competence and skills**

- be able to independently complete projects using GIS
- be able to use both hardware and software for digitalisation, data collection, analysis, modelling and visualisation
- be able to contribute to and design the development of ICT

### **Judgement and approach**

- be able to offer plausible interpretations of data from a critical scholarly perspective.

### **Course content**

The course focuses on technologies for collecting two- and three-dimensional spatial data theoretically and practically. Students acquire knowledge of and apply digitalisation, GPS, total station, photogrammetry for GIS and are introduced to how these techniques can be linked to other archaeological prospecting tools such as magnetometers and georadar. CAD technology is also introduced. The tuition in database management comprises theory and practical applications of relational databases.

Furthermore, the course introduces the cartographical principles for analysing and communicating spatial data, global and national coordinate systems for locations and how this information can be adapted from one system to another. The principles for digital representation of geography in terms of vectors (points, lines, polygons) and raster graphics are introduced, including the packaging of these in file structures. The use of GIS in archaeological investigations and the principles for modelling the stratification of layers are introduced. Landscape analysis is based on a wealth of data, such as the cultural heritage information system (FMIS), digital elevation models, quaternary biology, historical maps (which need to be applied to present-day geography (rectified)), so skills in statistical data analysis are required. Analysis is concerned with spatial patterns, visibility, networks, simulation of land and resource use, the search for settlements (predictive modelling), etc.

### **Course design**

Teaching consists of exercises, lectures, seminars and study visits. Some of the seminars are compulsory and assessed. All course components except lectures are compulsory.

## **Assessment**

The assessment is based on an oral or written exam at the end of the course and on home assignments, essays and seminar activities.

*Subcourses that are part of this course can be found in an appendix at the end of this document.*

## **Grades**

Marking scale: Fail, E, D, C, B, A.

The highest grade is A and the lowest passing grade is E. The grade for a non-passing result is Fail.

## **Entry requirements**

To be admitted to the course students must have passed one of the courses ARKK01, ARKK04, AKSK04, ARKH04, HOSK04 or the equivalent.

## **Further information**

1. The credits allocated for course content that in whole or in part is commensurate with another course can only be credited once for a degree. For further details see the current registration information and other relevant documentation.
2. The course is offered at the Department of Archaeology and Ancient History, Lund University.

Subcourses in ARKN09, Archaeology and Ancient History: Digital  
Archaeology, GIS in Archaeology

Applies from V12

1201 Digital Archaeology, GIS in Archaeology, 15,0 hp  
Grading scale: Fail, E, D, C, B, A