

GIS & Visualisation

Om kurset

uddannelse	Geografi / Teksam / Miljørisiko / Spatial Designs and Society
aktivitetstype	kandidatkursus
Undervisningsprog	dansk / engelsk
Tilmelding	Tilmelding sker via stads selvbetjening indenfor annonceret tilmeldingsperiode, som du kan se på Studieadministrationens hjemmeside Når du tilmelder dig kurset, skal du være opmærksom på, om der er sammenfald i tidspunktet for kursusafholdelse og eksamen med andre kurser, du har valgt. Uddannelsesplanlægningen tager udgangspunkt i, at det er muligt at gennemføre et anbefalet studieforløb uden overlap. Men omkring valgfrie elementer og studieplaner som går ud over de anbefalede studieforløb, kan der forekomme overlap, alt efter hvilke kurser du vælger. Registration is happening through stads selvbetjening within the announced registration period, as you can see on the Studyadministration homepage. When registering for courses, please be aware of the potential conflicts between courses or exam dates on courses. The planning of course activities at Roskilde University is based on the recommended study programs which do not overlap. However, if you choose optional courses and/or study plans that goes beyond the recommended study programs, an overlap of lectures or exam dates may occur depending on which courses you choose.
Læringsudbytte/ bedømmelseskriterier	Knowledge • Knowledge of digital representation of spatial objects and phenomena. • Knowledge of the collection, analysis and presentation of GeoData to solve complex spatial problem statements and planning-related challenges. • Knowledge of Denmark's digital infrastructure on the GeoData area. Skills • Can master relevant digital tools and techniques for the collection, analysis and presentation of GeoData. • Can understand the opportunities and limitations in the current digital GeoData infrastructure in relation to a specific problem statement and can also specify problem-specific elaborations in this context. • Can use relevant digital tools and techniques to collect, analyse and present GeoData, in addition to relating analyses of spatial phenomena to current geographical problem statements and challenges. • Can clearly and precisely state the required framework for spatial analysis. Competences • Can use digital tools and techniques to solve complex spatial problem statements and planning-related challenges. • Can, via the aid of digital tools, communicate spatial problem statements and how to solve them.
Overordnet indhold	The course introduces the students to fundamental digital tools and techniques for the collection, analysis and presentation of GeoData.
Undervisnings- og arbejdsform	The course consists of a number of lectures. Some of these will be in the context of 'exercise workshops'. The students will participate in the exercise workshops after each lecture.
Prøveform	Written presentation of a GeoData-based visualisation product that communicates the results of an analysis or modelling process with an associated reflection paper. The whole product is handed in no later than 7 days after the last course. The overall evaluation will be based on an average of the two productions.
Prøvetype	Individuel prøve

Hjælpe midler til eksamen	all		
Bedømmelse	7-trinsskala		
Censur	Ingen (dvs. at underviser bedømmer)		
Aktivitetsansvarlig	Esbern Holmes (holmes@ruc.dk)		
STADS stamdata	kandidatkursus belastning : 5 ECTS	aktivitetskode : U26060 / U40824	
	prøveform : Afleveringsopgave / Hjemmeopgave (ut)	bedømmelse : 7-trinsskala	censur : ingen censur / Intern censur

kursusgange:

Hold: 1

GIS & Visualization - Lecture 1: Data and spatial representation

tidspunkt	12-02-2019 08:15 til 12-02-2019 17:00		
forberedelsesnorm	ikke valgt		
forberedelsesnorm D-VIP	ikke valgt		
sted	02.1-203 - gis 1 (27)		
Indhold	In this lecture, we will focus on understanding the nature of GeoData and how it is used to represent different aspects of the world around us and how these representations are influenced by the ontologies we use. We will look at the Danish GeoData infrastructure, what are the key data sets and where are they found.		

GIS & Visualization - Lecture 2: Working with attribute dataon

tidspunkt	19-02-2019 10:15 til 19-02-2019 15:00		
forberedelsesnorm	ikke valgt		
forberedelsesnorm D-VIP	ikke valgt		
sted	02.1-203 - gis 1 (27)		
Underviser (ved Flere Hold/fælles Aktiviteter)	Esbern Holmes (holmes@ruc.dk)		
Indhold	We will focus on the spatial aspect of data (the attribute data). We will investigate how this can be used to slice and dice spatial data in order to find what we are looking for. We will also look at the workings of the most common database query language SQL and how it relates to set theory.		

GIS & Visualization - Lecture 3: Symbolising data

tidspunkt	12-03-2019 08:15 til 12-03-2019 17:00
forberedelsesnorm	ikke valgt
forberedelsesnorm D-VIP	ikke valgt
sted	02.1-203 - gis 1 (27)
Underviser (ved Flere Hold/fælles Aktiviteter)	Esbern Holmes (holmes@ruc.dk)
Indhold	We will look at who attribute data can be used to control the symbolisation of spatial data. We will look at both statistical data (interval and ratio data) as well as categorical data (nominal and ordinal data). We will investigate the rules that govern the use of symbols and colours.

GIS & Visualization - Lecture 4: Map design

tidspunkt	19-03-2019 08:15 til 19-03-2019 17:00
forberedelsesnorm	ikke valgt
forberedelsesnorm D-VIP	ikke valgt
sted	02.1-203 - gis 1 (27)
Underviser (ved Flere Hold/fælles Aktiviteter)	Esbern Holmes (holmes@ruc.dk)
Indhold	In this lecture we will focus on types of map and there use. We will discuss the concept of design and some rules that can guide us in producing well-designed maps.

GIS & Visualization - Lecture 5: Data collection

tidspunkt	26-03-2019 08:15 til 26-03-2019 17:00
forberedelsesnorm	ikke valgt
forberedelsesnorm D-VIP	ikke valgt
sted	02.1-203 - gis 1 (27)
Underviser (ved Flere Hold/fælles Aktiviteter)	Esbern Holmes (holmes@ruc.dk)
Indhold	In this lecture, we will setting up web based data entry for community mapping as well as mobile devise for field surveys.

GIS & Visualization - Lecture 6: Introduction to Spatial analysis

tidspunkt	02-04-2019 08:15 til 02-04-2019 17:00
forberedelsesnorm	ikke valgt
forberedelsesnorm D-VIP	ikke valgt

sted 02.1-203 - gis 1 (27)

Underviser (ved Flere Hold/fælles Aktiviteter) Esbern Holmes (holmes@ruc.dk)

Indhold

In this lecture, we will focus on how to deconstruct spatial problems into computer manageable components. We will look at how visual programming can help us and finally introduce concepts such as overlay analysis and buffering.

GIS & Visualization - Lecture 7: Raster data

tidspunkt 09-04-2019 08:15 til
09-04-2019 17:00

forberedelsesnorm ikke valgt

forberedelsesnorm D-VIP ikke valgt

sted 02.1-203 - gis 1 (27)

Underviser (ved Flere Hold/fælles Aktiviteter) Esbern Holmes (holmes@ruc.dk)

Indhold

In this lecture, we will focus on raster data and especially on raster data from working with surface data as for instance in modelling extreme rain incidents. We will also look at how to extract data from areal photos and satellite data.

GIS & Visualization - Lecture 8: Distance and density

tidspunkt 23-04-2019 10:15 til
23-04-2019 15:00

forberedelsesnorm ikke valgt

forberedelsesnorm D-VIP ikke valgt

sted 02.1-203 - gis 1 (27)

Underviser (ved Flere Hold/fælles Aktiviteter) Esbern Holmes (holmes@ruc.dk)

Indhold

In this lecture, we will focus on the key concepts of distance and density and how they can be quantified using different approaches.

GIS & Visualization - Lecture 9: Finding patterns

tidspunkt 30-04-2019 08:15 til
30-04-2019 17:00

forberedelsesnorm ikke valgt

forberedelsesnorm D-VIP ikke valgt

sted 02.1-203 - gis 1 (27)

Underviser (ved Flere Hold/fælles Aktiviteter) Esbern Holmes (holmes@ruc.dk)

Indhold

In this lecture, we will be focusing on finding similarities (clusters) in both attribute data and in image data. We will also look at concepts such as hotspots and coldspots

GIS & Visualization - Lecture 10: 3D visualisation9. Finding patterns

tidspunkt	07-05-2019 08:15 til 07-05-2019 17:00
forberedelsesnorm	ikke valgt
forberedelsesnorm D-VIP	ikke valgt
sted	02.1-203 - gis 1 (27)
Underviser (ved Flere Hold/fælles Aktiviteter)	Esbern Holmes (holmes@ruc.dk)
Indhold	In this lecture we will focus on analysing and visualising planning projects using 3D visualisation tools

GIS & Visualization - Submission of visualisation product

tidspunkt	14-05-2019 12:00 til 14-05-2019 12:00
forberedelsesnorm	ikke valgt
forberedelsesnorm D-VIP	ikke valgt
Indhold	Skriftlig fremstilling af et GeoData baseret visualiseringsprodukt, der formidler resultatet af en analyse eller modelleringsproces med tilhørende refleksionspapir. Det samlede produkt afleveres senest 7 dage efter sidste kursusgang. Den samlede bedømmelse vil være baseret på et gennemsnit af de to produktioner. Written presentation of a GeoData-based visualisation product that communicates the results of an analysis or modelling process with an associated reflection paper. The whole product is handed in no later than 7 days after the last course. The overall evaluation will be based on an average of the two productions.

GIS & Visualization - Re exam

tidspunkt	14-08-2019 12:00 til 14-08-2019 12:00
forberedelsesnorm	ikke valgt
forberedelsesnorm D-VIP	ikke valgt
Indhold	Skriftlig fremstilling af et GeoData baseret visualiseringsprodukt, der formidler resultatet af en analyse eller modelleringsproces med tilhørende refleksionspapir. Det samlede produkt afleveres senest 7 dage efter sidste kursusgang. Den samlede bedømmelse vil være baseret på et gennemsnit af de to produktioner.
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