

Module Catalogue for the Subject

Applied Earth Observation and Geoanalysis (EAGLE)

as a Master's with 1 major with the degree "Master of Science" (120 ECTS credits)

Examination regulations version: 2016 Responsible: Faculty of Arts, Historical, Philological, Cultural and Geographical Studies Responsible: Institute of Geography and Geology

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The subject is divided into

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Learning Outcomes

German contents and learning outcome available but not translated yet.

Wissenschaftliche Befähigung

- Das Master#Studium der Applied Earth Observation and Geoanalysis (EAGLE) vertieft die Lehr# und Forschungsinhalte der geographischen Fernerkundung. Der Studiengang ist in einen Pflicht#, Wahlpflichtbereich untergliedert und bereitet auf eine qualifizierte Erwerbstätigkeit vor. Das Ziel der Ausbildung ist es, den Studierenden fundierte und detaillierte Kenntnisse aus den wichtigsten Teilgebieten der geographischen Fernerkundung zu vermitteln und sie mit modernen Methoden des geographischen und fernerkundlichen Denkens und Arbeitens vertraut zu machen. Deshalb wird auf das Verständnis der fundamentalen geographischen Begriffe und Theorien sowie auf einige grundlegende Methodenkenntnisse und die Entwicklung typischer Denkstrukturen besonderer Wert gelegt. Zentrales Lernziel ist somit der Erwerb der Fähigkeit, räumliche Strukturen und Entwicklungsprozesse zielgerichtet zu analysieren, zu dokumentieren und zu bewerten. Auch die Fähigkeit zum selbständigen wissenschaftlichen Arbeiten soll massiv gefördert werden.
- Der anwendungsbezogene englischsprachige Masterstudiengang bietet Möglichkeiten der Vertiefung und Spezialisierung und bereitet auf eine hoch qualifizierte Berufstätigkeit im akademischen oder im angewandten Bereich vor.
- Vertiefung des im Rahmen des ersten berufsbefähigenden Studiums erworbenen geo# und raumwissenschaftliches Fachwissens und Erweiterung des methodischen und analytischen Ansatzes; Vertiefung der Kenntnisse über die Zusammenhänge innerhalb der eigenen Disziplin und mit benachbarten Disziplinen, Befähigung komplexe, insbesondere interdisziplinäre, Probleme und Aufgabenstellungen im Umweltbereich zu erkennen und zu analysieren, zu formulieren und – unter Zuhilfenahme von selbst recherchierter Fachliteratur – zu lösen; Vertiefung und Erweiterung der Befähigung, über geographische, geo# und raumwissenschaftliche Inhalte und Probleme sowohl mit Fachkollegen und # kolleginnen als auch mit einer breiteren Öffentlichkeit zu kommunizieren; Vertiefung und Erweiterung der Befähigung, sowohl einzeln als auch als Mitglied internationaler Gruppen zu arbeiten und Projekte effektiv zu organisieren und durchzuführen sowie in eine entsprechende Führungsverantwortung hineinzuwachsen;
- Befähigung, zukünftige Probleme, Technologien und wissenschaftliche Entwicklungen in den Geo# und Raumwissenschaften zu erkennen und entsprechend in die Arbeit einzubeziehen; durch die Vertiefung wissenschaftlicher, technischer und sozialer Kompetenz (u.a. Abstraktionsvermögen, Team# und Kommunikationsfähigkeit) auf die Übernahme von Führungsverantwortung vorbereitet zu sein.

Befähigung zur Aufnahme einer Erwerbstätigkeit

- Definition, Reflexion und Bewertung von Zielen für Lern# und Arbeitsprozesse sowie eigenständige und nachhaltige Gestaltung von Lern# und Arbeitsprozessen: Praxisbezug: Studierende sind in der Lage, theoretisches Wissen in der Praxis anzuwenden
- Problemlösungskompetenz: Absolventen/innen können mit wissenschaftlichen Methoden auch unbekannte Herausforderungen zu analysieren und zielgerichtet zu bearbeiten.
- Teamfähigkeit / Konfliktkompetenz: Absolventen /innen sind in der Lage, konstruktiv und zielorientiert in einem heterogenen, teilweise internationalem, Team zusammenzuarbeiten, unterschiedliche Ansichten produktiv zur Zielerreichung zu nutzen und mögliche Konflikte zu bearbeiten.
- Zeitmanagement: Absolventen/innen können unterschiedliche Aufgaben parallel und unter Zeit# und Erfolgsdruck auch bei widrigen Rahmenbedingungen erfolgreich bearbeiten.

Persönlichkeitsentwicklung

Master's with 1 major Applied Earth Observation	JMU Würzburg • generated 19-Apr-2025 • exam. reg. data record Master	page 4 / 40
and Geoanalysis (EAGLE) (2016)	(120 ECTS) Applied Earth Observation and Geoanalysis (EAGLE) - 2016	

- Diskussionskultur und Teamfähigkeit: Entwicklung der Diskussionsbereitschaft und Befähigung zur Teamarbeit.
- Interkulturelle Kompetenz: Die Absolventen /innen können ihre erworbenen Kompetenzen in unterschiedlichen interkulturellen Kontexten anwenden.
- Die Absolventen /innen können sich sicher in einem heterogenen Umfeld bewegen und andere Meinungen konstruktiv auf ein gemeinsames Ziel einbinden. Sie sind kritikfähig.

Befähigung zum gesellschaftlichen Engagement

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• Ethisches Handeln: Die Absolventen /innen können gesellschaftliche, naturwissenschaftliche, kulturelle wie auch wirtschaftliche Entwicklungen vergleichen, kritisch reflektieren und begründet eigene Positionen beziehen. Sie haben die Fähigkeit entwickelt, ihre Kompetenzen in partizipative Prozesse einzubringen.

Abbreviations used

Course types: \mathbf{E} = field trip, \mathbf{K} = colloquium, \mathbf{O} = conversatorium, \mathbf{P} = placement/lab course, \mathbf{R} = project, \mathbf{S} = seminar, \mathbf{T} = tutorial, $\ddot{\mathbf{U}}$ = exercise, \mathbf{V} = lecture

Term: **SS** = summer semester, **WS** = winter semester

Methods of grading: **NUM** = numerical grade, **B/NB** = (not) successfully completed

Regulations: **(L)ASPO** = general academic and examination regulations (for teaching-degree programmes), **FSB** = subject-specific provisions, **SFB** = list of modules

Other: **A** = thesis, **LV** = course(s), **PL** = assessment(s), **TN** = participants, **VL** = prerequisite(s)

Conventions

Unless otherwise stated, courses and assessments will be held in German, assessments will be offered every semester and modules are not creditable for bonus.

Notes

Should there be the option to choose between several methods of assessment, the lecturer will agree with the module coordinator on the method of assessment to be used in the current semester by two weeks after the start of the course at the latest and will communicate this in the customary manner.

Should the module comprise more than one graded assessment, all assessments will be equally weighted, unless otherwise stated below.

Should the assessment comprise several individual assessments, successful completion of the module will require successful completion of all individual assessments.

In accordance with

the general regulations governing the degree subject described in this module catalogue:

ASPO2015

associated official publications (FSB (subject-specific provisions)/SFB (list of modules)):

01-Jun-2016 (2016-79)

This module handbook seeks to render, as accurately as possible, the data that is of statutory relevance according to the examination regulations of the degree subject. However, only the FSB (subject-specific provisions) and SFB (list of modules) in their officially published versions shall be legally binding. In the case of doubt, the provisions on, in particular, module assessments specified in the FSB/SFB shall prevail.



Compulsory Courses

(55 ECTS credits)



Module Catalogue for the Subject Applied Earth Observation and Geoanalysis (EAGLE) Master's with 1 major, 120 ECTS credits

Theoretical Basics

(10 ECTS credits)

Module title			Abbreviation		
Introduction to Remote Sensing and Geoanalysis			04-GEO-TB1-162-m01		
Module	coord	inator		Module offered by	
holder	of the F	Professorship of Remote	Sensing	Institute of Geograp	bhy and Geology
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)	
5	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 semes	ster	graduate			
Contents					
The lecture "Introduction to Remote Sensing" ensures that participants will gain a solid understanding of the fol- lowing topics: the role of remote sensing in nowadays world / basics of electromagnetic radiation / history of remote sensing and image acquisition platforms / satellite orbits and orbit geometry / current spaceborne sen- sors / impacts of the atmosphere / geocorrection of digital imagery / radiometric correction of digital images / principles of image classifications / time series and big data / geodata concepts / geodata standards / geodata visualization / the job market for remote sensing and geo IT specialists					
Intende	ed learn	ning outcomes			
The lect physica concep	ture pro Il princ ts, star	ovides participants with a iples of remote sensing, ndards and future develo	a solid and comprehe gives an introduction pments	ensive theoretical ba into digital image p	ckground of the background and rocessing, as well as geodata
Courses	5 (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
V (2) Module	taugh	t in: English			
Method module is	l of ass creditab	s essment (type, scope, langua ₎ le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
written Langua where p	examir ge of a possibl	nation (approx. 45 minute ssessment: English or Ge e, decide to hold assessi	es) erman (assessment w nent in German)	vill be held in English	; in addition, the examiner may,
Allocati	ion of p	olaces			
Additio	nal info	ormation			
Worklo	ad				
150 h					
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
Master's degree (1 major) Applied Earth Observation and Geoanalysis (EAGLE) (2016)					
Master'	s degre	ee (1 major) Applied Earth	1 Observation and Ge	eoanalysis (EAGLE) (2	2021)
Master'	s degre	ee (1 major) Applied Earth	n Observation and Ge	eoanalysis (EAGLE) (2	2024)

Module title			Abbreviation		
Applications of Earth Observation			04-GEO-TB2-162-m01		
Module	coord	inator		Module offered by	
holder	of the F	Professorship of Remote S	Sensing	Institute of Geograp	ohy and Geology
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
5	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	Contents				
The lecture addresses applications of remote sensing of the atmosphere, the oceans, and particularly the land surface. The presented materials include among others applications in geography, environmental planning, ecology, biology, oceanology, soil science, geology, atmospheric science, but also e.g. pollution control (monitoring) and natural resource management. Which research questions can be answered by the means of Earth Observation and geoanalysis? The lecture comprises commonly used methodological approaches for the derivation of the different parameters. The covers the issue of implementation of the remote sensing technology into practice, e.g. the implementation of information systems. It outlines at selected examples, how remote sensing based results can be transferred to the workplace of professionals also beyond science.					
Intende	ed learr	ning outcomes			
The lect differer for qua	ture giv nt disci ntificat	ves a broad overview abo plines of environmental s ion and assessment.	ut the applications o sciences and studies	f remote sensing. Th utilize the potentials	e participants will learn how the s of active and passive sensors
Courses	5 (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
V (2) Module	taugh	t in: English			
Methoo module is	l of ass creditab	essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
written Langua where p	examir ge of a possibl	nation (approx. 45 minute ssessment: English or Ge e, decide to hold assessi	es) erman (assessment w ment in German)	vill be held in English	n; in addition, the examiner may,
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
150 h					
Teachir	ng cycl	e			
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
Master's degree (1 major) Applied Earth Observation and Geoanalysis (EAGLE) (2016) Master's degree (1 major) Applied Earth Observation and Geoanalysis (EAGLE) (2018) Master's degree (1 major) Applied Earth Observation and Geoanalysis (EAGLE) (2018)					
Master'	s degre	ee (1 major) Applied Earth	n Observation and Ge	eoanalysis (EAGLE) (2	2024)

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Metholodological Basics

(15 ECTS credits)

Module title				Abbreviation	
Digital Image Analysis and GIS			04-GEO-MB1-162-m01		
Module	coord	inator		Module offered by	
holder	of the F	Professorship of Remote	Sensing	Institute of Geograp	ohy and Geology
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
5	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 semes	ster	graduate			
Contents					
The mo- cluding metric a lidation and bio bedo	The module comprises the following practical topics: Managing and geoprocessing of raster and vector data in- cluding digitization and analysis/ visualization of geodata / preprocessing of optical remote sensing data (geo- metric and atmospheric corrections, dimension reduction) / different approaches, algorithms, sampling and va- lidation strategies for validation / change detection, vegetation indices / basics in the derivation of geophysical and biophysical parameters (e.g. LAI, FAPAR, Chlorophyll content of leafs, Land Surface Temperature, Surface Al-				
Intende	ed learr	ning outcomes			
The sen use of G	ninar a Geogra	ims at improving the met phical Information Syster	hodological skills of ns.	the participants in d	igital image processing and the
Courses	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
Ü (2) Modulo	taugh	tin. Englich			
Method			go if other than Corman	vamination offered if no	t aven competer information on whether
module is	creditab	le for bonus)	ge – Il other than German, e		tevely semester, mornation on whether
a) prese b) prepa c) term Langua where p credital	entatio aring a paper ge of a oossibl ole for	n (approx. 30 minutes) of poster (approx. 10 hours (approx. 15 pages) ssessment: English or Ge e, decide to hold assessi bonus	r total) or erman (assessment w ment in German)	ill be held in English	n; in addition, the examiner may,
Allocati	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
150 h					
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module	Module appears in				
Master' Master' Master'	s degre s degre s degre	ee (1 major) Applied Earth ee (1 major) Applied Earth ee (1 major) Applied Earth	n Observation and Ge n Observation and Ge n Observation and Ge	oanalysis (EAGLE) (2 oanalysis (EAGLE) (2 oanalysis (EAGLE) (2	2016) 2018) 2021)

Module title				Abbreviation	
Introdu	ction t	o Programming and Geos	statistics		04-GEO-MB2-162-m01
Module	e coord	inator		Module offered by	
holder	of the F	Professorship of Remote	Sensing	Institute of Geograp	ohy and Geology
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
5	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
Ineoret mote So loops a environ	ensing s well a menta	sics and practical examp and GIS are provided. Ba as programming syntax u l analysis are covered sur	les of programming a isic functionality sucl sing the R language a ch as Random Forest	and geostatistics foc n as script structure, are introduced. More or spatial queries.	used on application within Re- implementation, functions, eover, statistical basics related to
Intende	ed leari	ning outcomes			
Introdu	ction to	o programming and geos	tatistics for environm	ental data analysis.	
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
U (2) Module	e taugh	t in: English			
Methoo module is	d of ass creditab	s essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
 a) presentation (approx. 30 minutes) or b) preparing a poster (approx. 10 hours total) or c) term paper (approx. 15 pages) Language of assessment: English or German (assessment will be held in English; in addition, the examiner may, where possible, decide to hold assessment in German) 					
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Workload					
150 h					
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module	e appea	ars in			
Master'	Master's degree (1 major) Applied Earth Observation and Geoanalysis (EAGLE) (2016)				

Module title			Abbreviation		
From Field Measurements to Geoinformation			04-GEO-MB3-162-m01		
Module coordinator				Module offered by	
holder	of the F	Professorship of Remote	Sensing	Institute of Geograp	bhy and Geology
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
5	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Contents					
This mo content methoo student tation, polatio	odule s ts of th Is appr ts. The climate n meth	ets a strong focus on field e course comprises the p opriate for the subseque field data collection can e soil, geology, and other ods are presented.	d methods and data i reparation of field ca nt analysis. A broad s focus on different fiel s. Depending of the s	ntegration for select mpaigns, i.e. the sel sequence of field dev lds of environmental pecial focus of cours	ed types of land mapping. The lection of sampling schemes and vices will be introduced to the l mapping, e.g. land use or vege- se, spatial integration and inter-
Intende	ed learı	ning outcomes			
The stu ver map	dents v os and	will gain knowledge in ho geo-/biophysical parame	w to collect field data eters.	a for the purposes of	training and validation land co-
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
Ü (2) Module	e taugh	t in: English			
Method	d of ass	essment (type, scope, langua	ge — if other than German, e	examination offered — if no	t every semester, information on whether
module is	creditab	le for bonus)			
a) preso b) prep c) term Langua where p credital	aring a paper ge of a possibl ble for	n (approx. 30 minutes) o poster (approx. 10 hours (approx. 15 pages) ssessment: English or Ge e, decide to hold assessi bonus	r s total) or erman (assessment w ment in German)	ill be held in English	n; in addition, the examiner may,
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
150 h					
Teaching cycle					
KETEFIFED TO IN LPU I (examination regulations for teaching-degree programmes)					
 Modulo appears in					
Mourie appeals III Master's degree (1 major) Applied Earth Observation and Geographysis (EAGLE) (2016)					
Master	Master's degree (1 major) Applied Earth Observation and Geoanalysis (EAGLE) (2010)				
Master	's degr	ee (1 major) Applied Earth	n Observation and Ge	oanalysis (EAGLE) (2	2021)
Master	Master's degree (1 major) Applied Earth Observation and Geoanalysis (EAGLE) (2024)				



Module Catalogue for the Subject Applied Earth Observation and Geoanalysis (EAGLE) Master's with 1 major, 120 ECTS credits

Internship

(15 ECTS credits)

Module title			Abbreviation		
Interns	Internship				04-GEO-INT-162-m01
Module	e coord	inator		Module offered by	
holder	of the I	Professorship of Remote S	Sensing	Institute of Geograp	hy and Geology
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
15	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
The background of the research idea, the methodological background hosting institution as well as the aim of the internship will be presented. The work during the internship as well as the outcome should be covered by this presentation. Moreover the students are encouraged to provide valuable insights into the respective research in order to help fellow students to gain a better understanding of the value of each approach.					
The pre	sentat	ion of the internshin for t	he whole FAGLE stud	ents and lecturer	
Course		umber of weekly contact hours	anguage — if other than Ger	man)	
P (o) Module	e taugh	t in: English or German			
Methoo module is	d of ass creditab	sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
report i Langua where p	n the fo ge of a possibl	orm of a presentation (ap ssessment: English or Ge e, decide to hold assessi	prox. 15 minutes) erman (assessment w nent in German)	ill be held in English	; in addition, the examiner may,
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Additio	nal info	ormation on module dura	tion: 8 weeks.		
Worklo	ad				
450 h					
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
Master's degree (1 major) Applied Earth Observation and Geoanalysis (EAGLE) (2016) Master's degree (1 major) Applied Earth Observation and Geoanalysis (EAGLE) (2018) Master's degree (1 major) Applied Earth Observation and Geoanalysis (EAGLE) (2021)					



Step towards Master Thesis

(15 ECTS credits)

Module title			Abbreviation		
Innovation Laboratory				04-GEO-TMT1-162-m01	
Module	coord	inator		Module offered by	
holder	of the F	Professorship of Remote	Sensing	Institute of Geograp	bhy and Geology
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	Contents				
The cor is offere posed t the inne tion suc and its	The content of the innovation laboratory can be decided by each student individually and either a research topic is offered by a lecturer or the student is proposing an own topic. Research topics need to be discussed and proposed to one EAGLE lecturer who will also be in charge of supervising and grading the students work. Topics of the innovation laboratory can cover all aspects of the EAGLE study program with a strong focus on Earth Observation such as linking spectrometer field studies to remotely sensed data or the exploration of UAV based imagery				
Intende	d lear	ning outcomes			
The inn The aim gram. T study.	ovatio ា is to ខ្ he inno	n laboratory will allow the get an in depth practical k ovation laboratory aims to	e participant to focus knowledge in how to a o provide first insight	on one particular to address an own rese s into independent i	pic in his/her field of interest. earch in the field of the study pro- research projects such as a MSc
Course	5 (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
P (3) Module	taugh	t in: English			
Methoo module is	l of ass creditab	essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
a) prese b) prep c) term Langua where p	entatio aring a paper ge of a possibl	n (approx. 30 minutes) o poster (approx. 10 hours (approx. 15 pages) ssessment: English or Ge e, decide to hold assessi	r total) or erman (assessment w nent in German)	ill be held in English	n; in addition, the examiner may,
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
300 h					
Teachir	Teaching cycle				
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
Master' Master' Master'	s degro s degro s degro	ee (1 major) Applied Earth ee (1 major) Applied Earth ee (1 major) Applied Earth	n Observation and Ge n Observation and Ge n Observation and Ge	oanalysis (EAGLE) (2 oanalysis (EAGLE) (2 oanalysis (EAGLE) (2	2016) 2018) 2021)

Module title					Abbreviation
Project Seminar				04-GEO-TMT2-162-m01	
Module	e coord	inator		Module offered by	
holder	of the F	Professorship of Remote S	Sensing	Institute of Geograp	bhy and Geology
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
5	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
The inn search	ovatioı topic a	n laboratory shall provide nd explore the potential,	e the students with th challenges and limit	e opportunity to wor s of Earth Observatio	rk independently on a defined re- on in a practical approach.
Intende	ed learı	ning outcomes			
The pre	sentat	ion of the planned Msc. t	hesis for the whole E	AGLE students and l	ecturer
Course	S (type, n	number of weekly contact hours, l	anguage — if other than Ger	man)	
S (1) Module	e taugh	t in: English			
Methoc module is	d of ass creditab	sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
present Langua where p	tation (ge of a possibl	approx. 30 minutes) ssessment: English or Ge e, decide to hold assessi	erman (assessment w nent in German)	ill be held in English	n; in addition, the examiner may,
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
150 h					
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
Master'	's degr	ee (1 major) Applied Earth	n Observation and Ge	oanalysis (EAGLE) (2	2016)
Master'	's degr	ee (1 major) Applied Earth	n Observation and Ge	oanalysis (EAGLE) (2	2018)
Master's degree (1 major) Applied Earth Observation and Geoanalysis (EAGLE) (2021)					



Compulsory Electives

(35 ECTS credits)



Applications of Earth Observation

(10 ECTS credits)

Module title			Abbreviation		
Land Surface Dynamics			04-GEO-APP1-162-m01		
Module	coord	inator		Module offered by	
holder	of the F	Professorship of Remote	Sensing	Institute of Geograp	bhy and Geology
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
5	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 semes	ster	graduate			
Content	ts				
Topics cover most aspects of remote sensing based assessment of Land Surface Dynamics. Topics such as snow cover dynamics, water body dynamics, forest cover and further vegetation dynamics, urbanization dynamics, coastal dynamics, or dynamics of geophysical parameters such as land surface temperature or selected indices will be addressed. In these contexts we look at opportunities arising from optical-, multi-spectral- and radar sensors, as well as thermal imagery. Data availability and access, as well as typical software tools for handling of multispectral data or time series analyses will be addressed as well.					
Particip land su vide firs	ants w rface tl st expe	ill gain a thorough and co hat can be monitored usi riences in scientific writir	omprehensive overvions of the sensing impremented and presentation.	ew and understandir nagery. Seminar pap	ng of dynamic processes on the ers or oral presentations will pro-
Courses	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
S (2) Module	taugh	t in: English			
Method module is	l of ass creditab	s essment (type, scope, langua) le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
a) prese b) prepa c) term Langua where p Assessi	entatio aring a paper ge of a possibl ment o	n (approx. 30 minutes) of poster (approx. 10 hours (15 pages) ssessment: English or Ge e, decide to hold assessi ffered: Once a year, sumi	r total) or erman (assessment w nent in German) ner semester	ill be held in English	n; in addition, the examiner may,
Allocati	on of p	olaces			
Additio	nal inf	ormation			
Workload					
150 h					
Teaching cycle					
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)				
Module	appea	irs in			
Master'	s degre	ee (1 major) Applied Earth	n Observation and Ge	eoanalysis (EAGLE) (2	2016)

Module title				Abbreviation		
Land and Water Management					04-GEO-APP2-162-m01	
Module coordinator				Module offered by		
holder	of the F	Professorship of Remote	Sensing	Institute of Geograp	bhy and Geology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
5	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 semes	ster	graduate				
Conten	ts					
A gener rous fie and geo pics inc to use t	al intro lds of e banalys lude th hem in	oduction on the land and environmental and social sis can significantly contr ne derivation and use of p analytical or predictive r	water management a sciences is given. The ibute parameters for parameters for monite nodels, or in indicate	and its demand for ir the students select to answering relevant in pring land and/or wa or systems.	ntegrative knowledge in nume- pics in which remote sensing management questions. The to- ater resources and examples how	
Intende	ed learn	ning outcomes				
Particip support exampl	ants w t differe es.	ill increase their knowlec ent fields of land and wat	lge about remote sen er management. The	sing approaches an students will gain p	d geoanalytical methods which ractical experiences in selected	
Courses	5 (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)		
S (1) + Ü Module) (1) taugh	t in: English				
Method	l of ass	essment (type, scope, langua	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
module is	creditab	le for bonus)				
a) prese b) prep c) term Langua where p Assessi credital	aring a paper ge of a possibl ment o ble for	n (approx. 30 minutes) o poster (approx. 10 hours (approx. 15 pages) ssessment: English or Ge e, decide to hold assessi ffered: Once a year, sumi bonus	r s total) or erman (assessment w ment in German) mer semester	ill be held in English	n; in addition, the examiner may,	
Allocati	ion of p	olaces				
Additio	nal info	ormation				
Worklo	ad					
150 h						
Teachir	Teaching cycle					
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)		
Module	Module appears in					
Master' Master' Master'	s degre s degre s degre	ee (1 major) Applied Earth ee (1 major) Applied Earth ee (1 major) Applied Earth	n Observation and Ge n Observation and Ge n Observation and Ge	oanalysis (EAGLE) (2 oanalysis (EAGLE) (2 oanalysis (EAGLE) (2	2016) 2018) 2021)	

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Module title				Abbreviation		
Exploration of Mineral Deposits				04-GEO-APP3-162-m01		
Module	e coord	inator		Module offered by	<u> </u>	
holder rials Re	of the F esearch	Professorship of Geodyna	mics and Geomate-	Institute of Geograp	bhy and Geology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
5	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	Its					
system ding or use ma moistu	n the se pping, re, phe	catchments, urban areas lected topics and scale r biophysical variables (LA nological metrics and oth	s, or others. Focus ma elevant Earth Observ N/FPAR/Chlorophyll, her dynamic paramet	ay be set on special s ation parameters cal evapotranspiration, ers.	geographical settings. Depen- n include land cover and land etc.), biomass or crop yields, soil	
Intend	ed lear	ning outcomes				
Applica	ation of	Remote Sensing in Mine	ral Deposit research			
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)		
S (1) + Module	Ü (1) e taugh	t in: English				
Metho module is	d of ass s creditab	sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
a) pres b) prep c) term Langua where Assess credita	entatio paring a paper age of a possibl ment o ble for	n (approx. 30 minutes) o poster (approx. 10 hours (approx. 15 pages) ssessment: English or Ge e, decide to hold assess ffered: Once a year, sum bonus	r s total) or erman (assessment w ment in German) mer semester	ill be held in English	n; in addition, the examiner may,	
Allocat	ion of p	olaces				
Additio	onal inf	ormation				
Worklo	ad					
150 h						
Teaching cycle						
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module	Module appears in					
Master Master Master	's degr 's degr 's degr	ee (1 major) Applied Earth ee (1 major) Applied Earth ee (1 major) Applied Earth	n Observation and Ge n Observation and Ge n Observation and Ge	oanalysis (EAGLE) (2 oanalysis (EAGLE) (2 oanalysis (EAGLE) (2	2016) 2018) 2021)	

Module title				Abbreviation		
Selected Applications			04-GEO-APP4-162-m01			
Module	coord	inator		Module offered by		
holder	of the F	Professorship of Remote	Sensing	Institute of Geograp	bhy and Geology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
5	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
The mo manage ver map sity res topics o	dule fo ement, oping a earch, coverec	cuses on remote sensing ecology and conservatio nd spatial modeling, or e climatology, hydrology, s l ought to be in direct rela	g applications relevar n, or disaster manage environmental model oil sciences, geomor ation to remote sensi	It for spatial and env ement. Among other ing e.g. in geography phology or forestry c ng and geoanalysis.	Aronmental planning, resource s, e.g. (urban) land use / land co- y, geology, ecology and biodiver- can be subject of the module. All	
Intende	ed learn	ning outcomes				
The par of envir	ticipan onmen	ts gain theoretical and m tal sciences and studies	nethodological knowl	edge on the use of r	emote sensing in selected fields	
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)		
S (1) + Ü Module	ت (1) taugh	t in: English				
Methoo module is	l of ass creditab	e ssment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
a) prese b) prep c) term Langua where p Assess credital	entatio aring a paper ge of a possibl ment o ble for	n (approx. 30 minutes) o poster (approx. 10 hours (approx. 15 pages) ssessment: English or Ge e, decide to hold assessi ffered: Once a year, sumi bonus	r s total) or erman (assessment w ment in German) mer semester	ill be held in English	n; in addition, the examiner may,	
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
150 h						
Teaching cycle						
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module	appea	irs in	<u></u>			
Master' Master'	s degre	ee (1 major) Applied Earth	1 Observation and Ge	oanalysis (EAGLE) (2 oanalysis (FAGLE) (2	2016) 2018)	
muster	Master's degree (1 major) Applied Earth Observation and Geoanalysis (EAGLE) (2018)					



Advanced Methods and Modeling

(5 ECTS credits)

Module title				Abbreviation		
Spatial Modeling and Prediction				04-GEO-MET1-162-m01		
Module	coord	inator		Module offered by		
holder	of the F	Professorship of Remote	Sensing	Institute of Geograp	ohy and Geology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
5	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 semes	ster	graduate				
Conten	ts					
Differen biodive Randon be disc	nt statis rsity re n Fores ussed.	stical methods will be ap elated information. These st or MaxEnt. Implications All methods will be pract	plied for analysing sp results will be statist of spatial point patt tically applied during	patial point patterns, cically predicted usin erns as well as chose the course using the	, such as vegetation samples or ng methods such as GLM, GAM, en environmental parameters will e programming language R	
Intende	ed learr	ning outcomes				
Within t covered the rest	this cou I. Stude ults.	urse different methods to ents will learn how to des	analyse point patter sign such analysis, ho	n statistically and co ow to avoid caveats,	onduct a spatial prediction are troubleshoot errors and interpret	
Courses	S (type, n	number of weekly contact hours, l	anguage — if other than Ger	man)		
S (1) + Ü Module) (1) taugh	t in: English				
Method module is	l of ass creditab	sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	ot every semester, information on whether	
a) prese b) prepa c) term Langua where p Assessi credital	entatio aring a paper ge of a possibl ment o ble for	n (approx. 30 minutes) o poster (approx. 10 hours (approx. 15 pages) ssessment: English or Ge e, decide to hold assess ffered: Once a year, sum bonus	r s total) or erman (assessment w ment in German) mer semester	ill be held in English	n; in addition, the examiner may,	
Allocati	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
150 h						
Teachin	Teaching cycle					
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)		
Module	appea	nrs in				
Master' Master'	s degre s degre	ee (1 major) Applied Earth ee (1 major) Applied Earth	າ Observation and Ge າ Observation and Ge	oanalysis (EAGLE) (2 oanalysis (EAGLE) (2	2016) 2018)	
Master'	s degre	ee (1 major) Applied Earth	n Observation and Ge	oanalysis (EAGLE) (2	2021)	

Module title Abbreviation					Abbreviation	
Advanced Spatial Analysis for Geoscientists04-GEO-MET2-162-m01					04-GEO-MET2-162-m01	
Module coordinator				Module offered by		
holder	of the F	Professorship of Soil Scie	nce	Institute of Geograp	bhy and Geology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
5	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
No info	rmatio	n on contents available.				
Intende	ed lear	ning outcomes				
No info	rmatio	n on intended learning ou	utcomes available.			
Course	S (type, r	umber of weekly contact hours, l	anguage — if other than Ger	man)		
S (1) +	Ü (1)					
Module	e taugh	t in: English				
Metho module is	d of ass creditab	s essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
b) prep c) term Langua where Assess credita	aring a paper ge of a possibl ment o ble for	poster (approx. 30 minutes) o poster (approx. 10 hours (approx. 15 pages) ssessment: English or Ge e, decide to hold assessi ffered: Once a year, sumi bonus	r s total) or erman (assessment w ment in German) mer semester	ill be held in English	ı; in addition, the examiner may,	
Allocat	ion of p	olaces				
Additio	onal inf	ormation				
	-					
Worklo	ad					
150 h						
Teachi	ng cycl	e				
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
Master's degree (1 major) Applied Earth Observation and Geoanalysis (EAGLE) (2016) Master's degree (1 major) Applied Earth Observation and Geoanalysis (EAGLE) (2018) Master's degree (1 major) Applied Earth Observation and Geoanalysis (EAGLE) (2021)						

Module title				Abbreviation	
Special Methodological Issues				04-GEO-MET3-162-m01	
Module	coord	inator		Module offered by	
holder	of the F	Professorship of Remote	Sensing	Institute of Geograp	bhy and Geology
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)	
5	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
One spe content sensors reover, ditional ted to E	ecial re ts such s in ord detaile lly, cou Earth Ol	mote sensing or geoinfo as utilizing data of pass er to provide further deta ed courses on statistics a rses on specific research bservation can be offered	rmatics method is co ive (e.g. multi-spectra ils for application in nd geostatistics as w questions in geogra I.	vered in more detail al, hyper-spectral, th geography, geology, rell as environmenta phic, geological, ecc	. Special courses could cover ermal) or active (e.g. SAR, LIDAR) , ecology or other disciplines. Mo- l modeling could be offered. Ad- ological or other disciplines rela-
Intende	ed learr	ning outcomes			
The mo using o	dule er ne out	nables the students to im of numerous different sp	prove their technical ecial methods.	skills in remote sen	sing and applied geoinformatics
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
S (1) + Ü Module	لّ (1) taugh	t in: English			
Methoo module is	l of ass creditab	s essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
a) prese b) prep c) term Langua where p Assesso credital	entatio aring a paper ge of a possibl ment o ble for	n (approx. 30 minutes) o poster (approx. 10 hours (approx. 15 pages) ssessment: English or Ge e, decide to hold assess ffered: Once a year, sum bonus	r s total) or erman (assessment w ment in German) mer semester	ill be held in English	n; in addition, the examiner may,
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Workload					
150 h					
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module					
Master' Master'	s degre	ee (1 major) Applied Earth ee (1 major) Applied Earth	n Observation and Ge n Observation and Ge	eoanalysis (EAGLE) (2 eoanalysis (EAGLE) (2	2016) 2018)



Resources and Environment

(5 ECTS credits)

Module title					Abbreviation
Selected Topics in Geography I					04-GEO-RE1-162-m01
Module	e coord	inator		Module offered by	
holder	of the I	Professorship of Physical	Geography	Institute of Geograp	ohy and Geology
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
5	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
The mo landsca genic ir Intende	dule fo ape for npact (ed lear	cuses the geofactors bec ming processes as well a (land-use, settlements, in ning outcomes	drock, topography, cl s for land-use. Basic Ifrastructure, etc.) are	imate, soils, water, a geofactors of natura e communicated.	and plants and their relevance for l landscapes related to anthropo-
The stu and cul	dents l Itural a	earn synthesis and integ spects for site-specific ar	ration of their knowle nd planning assessm	edge on geofactors. T ent.	They are able to consider natural
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)	
V (2) Module	e taugh	t in: English			
Methoo module is	d of ass creditab	sessment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if no	t every semester, information on whether
written Langua where µ Assess	examin ge of a possibl ment o	nation (approx. 45 minute ssessment: English or Ge e, decide to hold assess ffered: Once a year, winte	es) erman (assessment w ment in German) er semester	vill be held in English	n; in addition, the examiner may,
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
150 h					
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
Master	's degr	ee (1 major) Applied Earth	n Observation and Ge	eoanalysis (EAGLE) (2	2016)
Master	's degr	ee (1 major) Applied Earth	n Observation and Ge	eoanalysis (EAGLE) (2	2018)

Module title				Abbreviation	
Selected Topics in Geography II				04-GEO-RE2-162-m01	
Module	coord	inator		Module offered by	
holder	of the F	Professorship of Physical	Geography	Institute of Geograp	bhy and Geology
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)	
5	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 semes	ster	graduate			
Conten	ts				
The em aim is t ganism followir pattern is the a ging en course, the mai across f Intende The mo vance for Courses V (2) Module	The emphasis of this course is on linking classic biogeographical theory with current research outcomes. The aim is to learn what the historical and ecological reasons are behind the geographical distributions of living organisms and their communities, and the dynamic nature of these distributions. In this course we will answer the following questions: What are the patterns of plant distribution and diversity? What mechanisms explain these patterns? What are the theoretical and technical basic principles for the modelling of species distributions? What is the aim of the study of species distributions in the context of the "biodiversity crisis" and a dramatically changing environment? How can remote sensing techniques be useful for this kind of studies? After completing the course, each student should have: Gained or developed a familiarity and functional understanding in each of the main themes outlined on the course timetable and demonstrated competence in discussing and integrating across these themes. Intended learning outcomes The module deepens student's knowledge on selected environmental theories and approaches and their relevance for applied remote sensing. V (2) Module taught in: English				
module is written Langua where p Assessi Allocati	ereditab examir ge of a possibl ment o ion of p	le for bonus) nation (approx. 45 minute ssessment: English or Ge e, decide to hold assess ffered: Once a year, winte places	es) erman (assessment w ment in German) er semester	ill be held in English	n; in addition, the examiner may,
Additio	nal info	ormation			
	- d				
	aŭ				
150 n					
ופסרווווא גארוא					
Performed to in LPO L (examination regulations for teaching degree programmes)					
Module	appea	urs in			
Master' Master'	Master's degree (1 major) Applied Earth Observation and Geoanalysis (EAGLE) (2016) Master's degree (1 major) Applied Earth Observation and Geoanalysis (EAGLE) (2018)				

Module title				Abbreviation	
Mineral Resources in Space and Time					04-GEO-RE3-162-m01
Module	e coord	inator		Module offered by	
holder rials Re	of the F search	Professorship of Geodyna	mics and Geomate-	Institute of Geograp	bhy and Geology
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
5	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
The cou ble util sources diment and inc	urse pro ization s will bo ary pro dustrial	ovides an overview of the of planet Earth. In particu e discussed using examp cesses that resulted in th minerals.	multitude of mineral ular, processes that o les of major deposit ne formation of econo	l deposits essentia can lead to the econo types. This includes omically viable depos	Il georesources for the sustaina- omic concentration of mineral re- magmatic, hydrothermal and se- sits of ore minerals, solid fuels
Intende	ed learr	ning outcomes			
The stu amples way, th	dents o . Furtho us layin	obtain basic, up-to-date i ermore they obtain the al ng the foundation for opt	nsights into the geol pility to classify know imising future exploit	ogy of mineral depos n and new mineral c tation and exploratio	sits on the basis of concrete ex- leposits/occurrences in a genetic on strategies.
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
V (2) Module	e taugh	t in: English			
Method module is	d of ass s creditab	s essment (type, scope, langua ₎ le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
written Langua where J Assess	examin ge of a possibl ment o	nation (approx. 45 minute ssessment: English or Ge e, decide to hold assessi ffered: Once a year, winte	es) erman (assessment w ment in German) er semester	vill be held in English	n; in addition, the examiner may,
Allocat	ion of p	olaces			
Additio	onal info	ormation			
Worklo	ad				
150 h					
Teaching cycle					
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)	
Module	e appea	irs in			
Master Master	's degre 's degre	ee (1 major) Applied Earth ee (1 major) Applied Earth	n Observation and Ge n Observation and Ge	eoanalysis (EAGLE) (2 eoanalysis (EAGLE) (2	2016) 2018)



Module Catalogue for the Subject Applied Earth Observation and Geoanalysis (EAGLE) Master's with 1 major, 120 ECTS credits

Soft Skills (5 ECTS credits)

Module title				Abbreviation					
Advanced applied Project management / Scientific presentation / Scientific Writing			ation / Scientific	04-GEO-SOS1-162-m01					
Module	e coord	inator		Module offered by					
holder	of the F	Professorship of Remote	Sensing	Institute of Geograp	ohy and Geology				
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)					
5	(not) s	successfully completed							
Duratio	on	Module level	Other prerequisites						
1 seme	ster	graduate							
Conten	ts								
Existing appear tations	g prese ance of will be	ntations will be discusse f presentations and poste part of it as well. Alterna	d and evaluated with er will be discussed a tive presentation me	regard to visual app nd guidelines provid thods will be introdu	bearance. Moreover design and ded. Individual training of presen- uced (e.g knitr, beamer).				
Intende	ed learı	ning outcomes							
Present	tations tations	and articles will be discu as well as articles.	issed with regard to i	ts scientific content	and goal to ensure high quality				
Course	S (type, n	number of weekly contact hours, l	anguage — if other than Ger	man)					
S (2) Module	e taugh	t in: English							
Method module is	d of ass s creditab	sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether				
a) pres b) prep c) term d) log (Langua where p Assess	entatio paring a paper 2 to 3 p ge of a possibl ment o	n (approx. 30 minutes) o poster (approx. 10 hours (approx. 15 pages) or pages) ssessment: English or Ge e, decide to hold assess ffered: Once a year, winte	r s total) or erman (assessment w ment in German) er semester	ill be held in English	ı; in addition, the examiner may,				
Allocat	ion of p	olaces							
Additio	onal inf	ormation							
Worklo	ad								
150 h									
Teaching cycle									
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)								
Module	e appea	ars in							
Master	's degr	ee (1 major) Applied Earth	n Observation and Ge	oanalysis (EAGLE) (2	Master's degree (1 major) Applied Earth Observation and Geoanalysis (EAGLE) (2016)				

Module title					Abbreviation
Advanced skills on the Master's level 04-GE					04-GEO-SOS2-162-m01
Module	coord	inator		Module offered by	
holder	of the F	Professorship of Remote	Sensing	Institute of Geograp	ohy and Geology
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
5	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
Moreov coverec	er scie 1. More	ntific articles will be disc over, general writing guid	ussed and own articl delines, journal guide	es be written. The st elines etc. will be int	ructure as well as wording will be roduced.
Intende	ed learr	ning outcomes			
Present present	ations tations	and articles will be discu as well as articles.	issed with regard to i	ts scientific content	and goal to ensure high quality
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
S (2) Module	taugh	t in: English			
Method	l of ass	essment (type, scope, langua	ge — if other than German, e	examination offered — if no	ot every semester, information on whether
module is	creditab	le for bonus)			
a) prese b) prep c) term d) log (: Langua where p Assessi	entatio aring a paper 2 to 3 p ge of a possibl ment o	n (approx. 30 minutes) of poster (approx. 10 hours (approx. 15 pages) or bages) ssessment: English or Ge e, decide to hold assess ffered: Once a year, winte	r s total) or erman (assessment w ment in German) er semester	ill be held in English	n; in addition, the examiner may,
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
150 h					
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module	appea	irs in			
Master'	s degre	ee (1 major) Applied Earth	n Observation and Ge	oanalysis (EAGLE) (2	2016)
Master'	s degre	ee (1 major) Applied Eartł	n Observation and Ge	oanalysis (EAGLE) (2	2018)

Module title				Abbreviation	
Advanc	ed Inst	ructions on Scientific Wo	orking		04-GEO-SOS3-162-m01
Module	coord	inator		Module offered by	
holder	of the F	Professorship of Remote S	Sensing	Institute of Geograp	bhy and Geology
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
5	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
Moreov coverec	er scie 1. More	ntific articles will be disc over, general writing guid	ussed and own articl delines, journal guide	es be written. The st elines etc. will be int	ructure as well as wording will be roduced.
Intende	ed leari	ning outcomes			
Present present	ations tations	and articles will be discu as well as articles.	issed with regard to i	ts scientific content	and goal to ensure high quality
Course	S (type, n	umber of weekly contact hours, la	anguage — if other than Ger	man)	
S (2) Module	taugh	t in: English or German			
Method	l of ass	essment (type, scope, language	ge — if other than German, e	examination offered — if no	t every semester, information on whether
module is	creditab	le for bonus)			
a) prese b) prep c) term d) log (: Langua where p Assessi	entatio aring a paper 2 to 3 p ge of a possibl ment o	n (approx. 30 minutes) or poster (approx. 10 hours (approx. 15 pages) or bages) ssessment: English or Ge e, decide to hold assessr ffered: Once a year, winte	r s total) or erman (assessment w ment in German) er semester	ill be held in English	n; in addition, the examiner may,
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
150 h					
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module	appea	ars in			
Master'	s degr	ee (1 major) Applied Earth	n Observation and Ge	oanalysis (EAGLE) (2	2016)
Master'	s degr	ee (1 major) Applied Earth	n Observation and Ge	oanalysis (EAGLE) (2	2018)



Thesis (30 ECTS credits)

Module	title		Abbreviation						
Master	Thesis	EAGLE		04-GEO-MA1-162-m01					
Module	coord	inator		Module offered by					
holder	of the F	Professorship of Remote	Sensing	Institute of Geography and Geology					
ECTS	Metho	od of grading	Only after succ. compl. of module(s)						
28 numerical grade									
Duration		Module level	Other prerequisites						
1 semester		graduate							
Contents									
pervision. Defining the aim, the hypothesis and structuring a research topic is the main first content followed by the actual analysis of spatial data (Earth Observation mainly satellite remote sensing but also airborne data or auxiliary data). Defining the methods and describing these including the results and discuss the outcome criti- cally. Moreover an appropriate visual presentation (typesetting and graphics, as well as maps) and writing is ex- pected. The Msc thesis is graded on the difficulty of the topic, on the amount of needed supervision (indepen- dent work is expected as well as regular meetings with the supervisors), the writing and especially the discussi- on of the Msc thesis. The thesis structure can comply to a standard scientific article but should exceed 50 pages									
Intended learning outcomes									
Conducting an independent research topic within 6 months									
Courses (type, number of weekly contact hours, language — if other than German)									
No courses assigned to module									
Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether									
module is creditable for bonus)									
Master's thesis (approx. 60 pages)									
Allocation of places									
Additional information									
Time to complete: 6 months.									
Workload									
840 h									
Teaching cycle									
Referred to in LPO I (examination regulations for teaching-degree programmes)									
Module appears in									
Master's degree (1 major) Applied Earth Observation and Geoanalysis (EAGLE) (2016)									
Master's degree (1 major) Applied Earth Observation and Geoanalysis (EAGLE) (2018) Master's degree (1 major) Applied Earth Observation and Geoanalysis (EAGLE) (2024)									
Master's degree (1 major) Applied Earth Observation and Geoanalysis (EAGLE) (2021)									

Module	title		Abbreviation						
Final Co	olloqui	um on Master Thesis	04-GEO-MA2-162-m01						
Module	coord	inator		Module offered by					
holder of the Professorship of Remote			Sensing	Institute of Geography and Geology					
ECTS Method of grading		Only after succ. compl. of module(s)							
2	nume	rical grade							
Duration		Module level	Other prerequisites						
		graduate							
Contents									
The final colloquium aims to present the aim and results of the Msc thesis to a scientific audience (EAGLE lectur- er and students) who are all allowed to ask questions and discuss the outcome critically. The presentation ought to follow scientific standards and should take 20mins. The presentation is not graded but is needed to finish the Msc.									
Intended learning outcomes									
Presentation of the final Msc thesis									
Courses (type, number of weekly contact hours, language — if other than German)									
K (o) Module taught in: English									
Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus)									
talk (approx. 30 minutes) with subsequent discussion (approx. 15 minutes) Language of assessment: English or German (assessment will be held in English; in addition, the examiner may, where possible, decide to hold assessment in German)									
Allocat	ion of _l	olaces							
Additio	nal inf	ormation							
Worklo	ad								
60 h									
Teaching cycle									
Referred to in LPO I (examination regulations for teaching-degree programmes)									
Module appears in									
Master's degree (1 major) Applied Earth Observation and Geoanalysis (EAGLE) (2016) Master's degree (1 major) Applied Earth Observation and Geoanalysis (EAGLE) (2018) Master's degree (1 major) Applied Earth Observation and Geoanalysis (EAGLE) (2021) Master's degree (1 major) Applied Earth Observation and Geoanalysis (EAGLE) (2024)									