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Institute of
Engineering Geodesy IIG

GEOENGINE – THE UNIVERSITY OF STUTTART INTERNATIONAL MASTER PROGRAM WITH MORE THAN 6 YEARS OF EXPERIENCE

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University of Stuttgart

**FIG Working Week 2013
Abuja, Nigeria, 06 - 10 May, 2013**

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Structure

- **Introduction**
- **Development**
- **Internationality**
- **Redesign – New Structure**
- **Integrated Fieldwork**
- **Scholarships**
- **Excursions & Social Events**
- **Summary**


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Introduction to GEOENGINE

- GEOENGINE = Geomatics Engineering
- 2 years international Master program at University Stuttgart
(up to now: 1.5 years)
- Extensive theoretical background knowledge and application related topics
- Geomatics Department at the University of Stuttgart consists of four institutes:
 - Institute of Geodesy (GIS),
 - Institute of Engineering Geodesy (IIGS),
 - Institute of Navigation (INS) and
 - Institute for Photogrammetry (ifp).
- Part of the faculty of Aerospace Engineering and Geodesy


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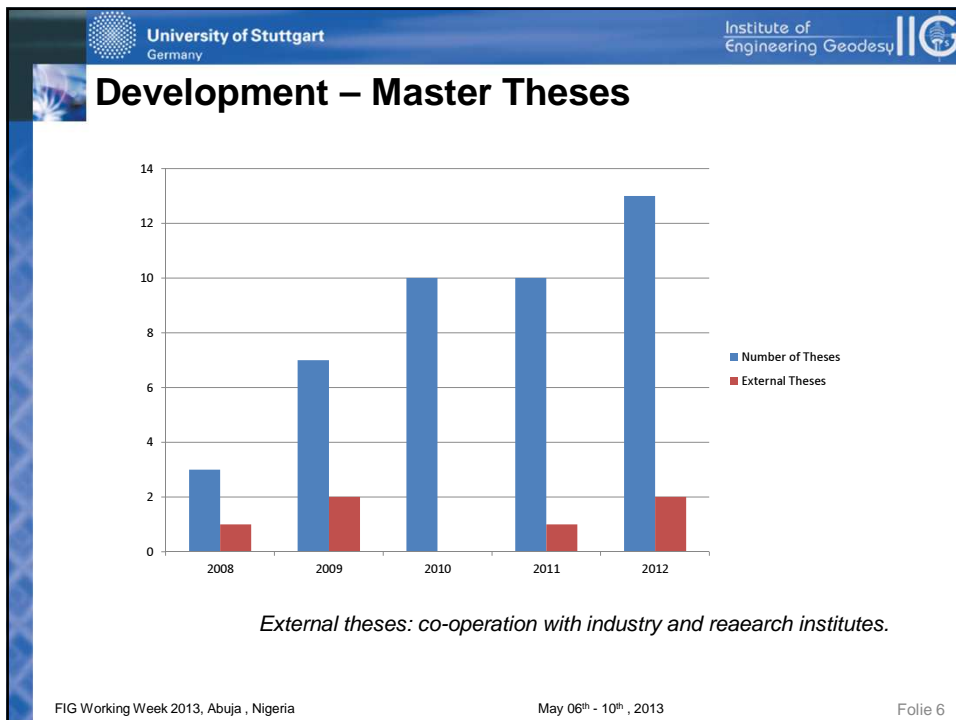
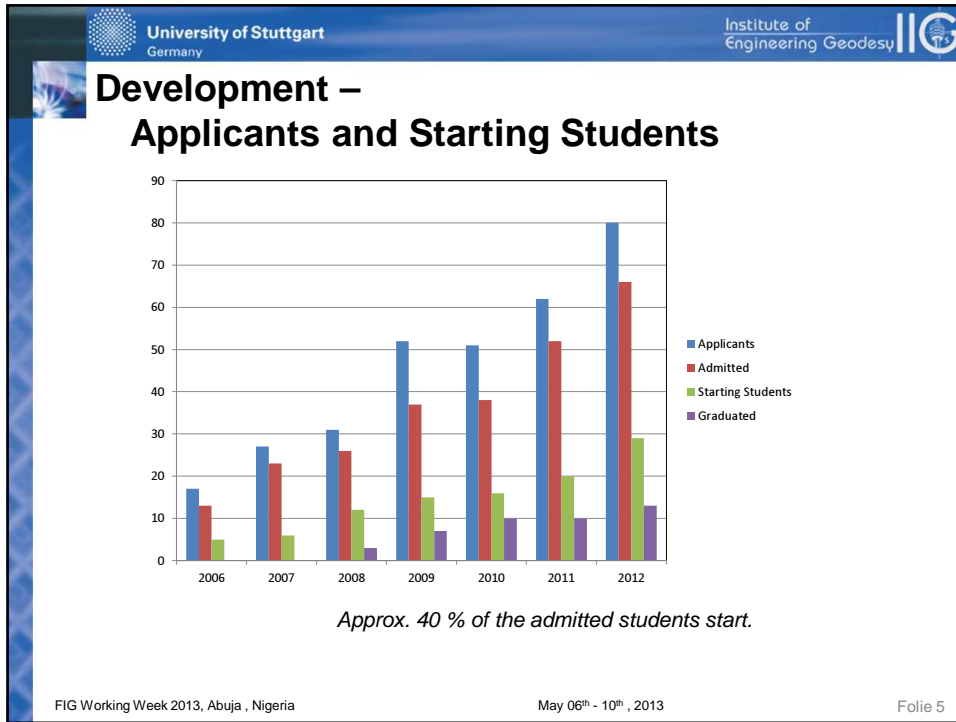
Introduction to GEOENGINE

- Started in 2006 with 5 students;
now around 100 applications per year
- Requirements:
 - Qualified Bachelor of Science degree in Geodesy, Photogrammetry, or Surveying Engineering and
 - English language proficiency (level of 80 points for the internet-based TOEFL test or medium of instruction in home country)
- Other Bachelor studies are welcome: e.g. civil engineering or electronic engineers, computer scientists, physicists
- Online application via:
<http://www.geoengine.uni-stuttgart.de/application/application.html>

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Internationality

Regions of origin (according to Anabin data base)

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- Grp. 1: West-Europe
- Grp. 2: East-Europe & Russia
- Grp. 3: Near/Middle East
- Grp. 4: Asia
- Grp. 5: Africa
- Grp. 6: Australia
- Grp. 7: North-America
- Grp. 8: Middle- & South-America

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Internationality

Number of students per regions of origin and year

Year	W.-Europe	E.-Europe/Rus.	Near East	Asia	Africa	S.-America
WS 06/07	1	0	0	4	0	0
WS 07/08	0	1	0	5	0	0
WS 08/09	1	0	1	10	0	0
WS 09/10	0	0	2	10	3	0
WS 10/11	0	0	3	9	4	0
WS 11/12	1	4	3	9	1	2
WS 12/13	0	1	10	16	1	1

- 50 % from Asia, most from China, then India, Pakistan.
- 2nd largest group: Near East, most from Iran.
- No students from Australia and North America.

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GEOENGINE Re-Design

Change from 1.5 years to 2.0 years study course!

Why ?

- high work load during the three semester course
- two year master is the standard for Universities in Germany (TU9 decision)

What ?

- curriculum more relaxed
- new modules e.g. engineering geodesy
- more elective modules

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GEOENGINE Re-Design: New structure

LP	Semester 1	Semester 2	Semester 3	Semester 4
3	Language	Remote Data Acquisition	Law	MSc Thesis
6	Geomatics Methodology 1 & 2		Representation of Geodata	
9		Geomatics Methodology 3	Technical Elective A	
12	Engg. Geod. 1	Engineering Geodesy 2		
15	Geodesy 1	Geodesy 2	Technical Elective B	
18				
21				
24				
27				
30				
	Core Modules	Supplementary Modules	Technical Elective Modules	

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GEOENGINE Re-Design: Modules

Mandatory Modules

- **Advanced Mathematics (6 CP)**
- **Geomatics Methodology (15 CP)**
- **Engineering Geodesy (9 CP)**
- **Geodesy (9 CP)**
- **Remote Data Acquisition (9 CP)**
- **Representation of Geodata (9 CP)**
- **Law (3 CP)**
- **Language and Culture (6 CP)**
- **Integrated Fieldwork (6 CP)**
- **Master Thesis (30 CP)**

Elective Modules

- **Multisensor Integration**
- **Satellite Geodesy**
- **Navigation**
- **Geo-Telematics**

- 9 CP each,
- two out of four

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Integrated Fieldwork

- Typical structure of a project
- Groups of three to four persons
- Training of team work, project management, presentations and scientific writing
- Different tasks every day, e.g. trigonometric leveling, kinematic survey, three-dimensional reference frame and terrestrial laserscanning
- 2012 project: planning a new water conduit for the pump storage station

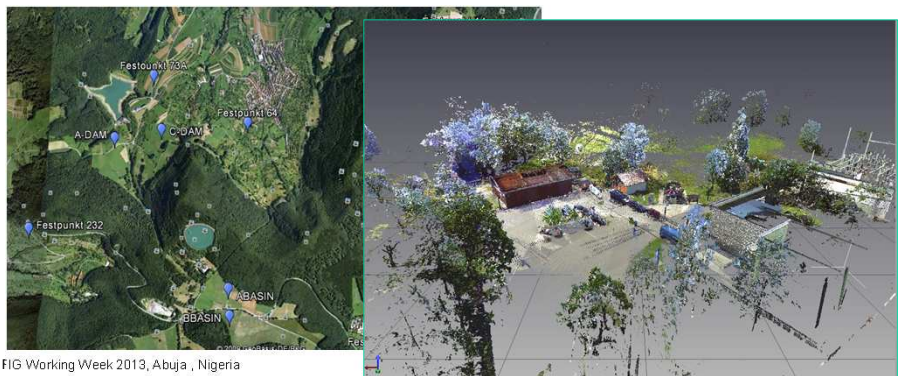




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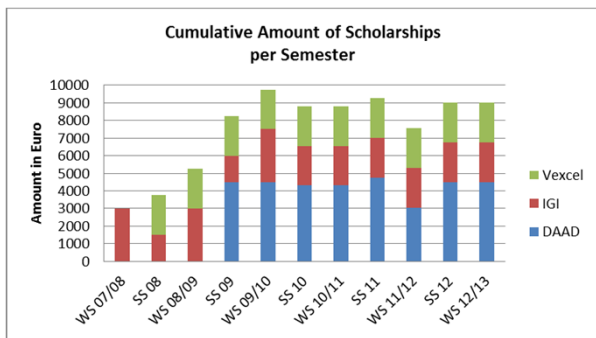
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Scholarships

- IGI Ingenieurgesellschaft für Interfaces mbH
- Microsoft Photogrammetry Vexcel Imaging
- DAAD STIBET scholarships

375 EUR per month,
6 months period,
1 person each

250 EUR per month,
3–5 months period, 3- 5 persons



Semester	DAAD (EUR)	IGI (EUR)	Vexcel (EUR)	Total (EUR)
WS 07/08	3000	0	0	3000
SS 08	1500	1500	0	3000
WS 08/09	3000	1500	1500	6000
SS 09	4500	1500	1500	7500
WS 09/10	4500	3000	1500	9000
SS 10	6000	1500	1500	9000
WS 10/11	4500	2000	1500	8000
SS 11	4500	2000	1500	8000
WS 11/12	3000	2000	1500	6500
SS 12	4500	2000	1500	8000
WS 12/13	4500	2000	1500	8000

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Excursions

- National aeronautics and space research centre of Germany (DLR)
- Leica Geosystems
- Intergraph/ZI company



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Social Activities




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Summary


- M.Sc. in Geomatics Engineering
- Great Success : from 5 students in 2006 to 30 students in 2012
- Students from (almost) all over the world
- 2 years of study / 120 Credit points
- Mandatory and Elective Courses:
great mixture of theory and applications
- Project: Integrated Fieldwork
- Excursions and Social Activities
- Required: Qualified B.Sc. and English knowledge
- Online application possible !

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Thank you very much for your attention!

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