

Exchange of teachers and teaching units – Bursary

2003-06-21

eduGI.net partners agreed on the extended exchange of personnel (professors, PhD, research assistants). One-week teaching units will organize the exchange. Goals are to

- ?? Improve quality of teaching by offering new, English teaching units to the hosting university
- ?? Improve networking in education and research by personal contacts.

The following standards form the basis of the exchange. The bursary is an ongoing instrument for offering and searching exchange opportunities. We invite the eduGI.net partners to fill in their requests and offers.

Standards

The ERASMUS program offers a funding for the exchange of teachers. The minimum requirements are to teach eight hours within one week. The eduGI.net partners approve the exchange teachers and teaching units. For certification of teaching units and integration in their teaching programs, they require formal regulations:

1. The courses are taught in English.
2. The minimum level of qualification for teachers is the degree (or equivalent) for which the program is offered.
3. The minimum workload is 30 h (8 contact hours at minimum, 22 hours preparation and homework). Extensions are subject of bilateral agreements.
4. Teachers provide information and tasks to students one month in advance, in order to assure the preparation of the students.
5. After the course, teachers provide feedback on student reports via Email.
6. Teachers provide a documentation of students' achievements.
7. Course documentation is made available in the Web for eduGI.net partners (syllabus, materials, documentation, quality standards, evaluation).

Bursary

The following blackboard targets the exchange of teachers and English teaching units within eduGI.net. Mainly, the exchange will be on the base of one-week units with 8 lecture hours, and a total students' workload of 30 h (see "standards").

The bursary provides information about wanted and offered courses.

Wanted courses

Topic	Description	University/ Contact	Time
1. All	We are interested in all kind of courses, especially for summer semester 2003. Please contact us.	IfGI, broxc@ifgi.uni-muenster.de	Any time, especially summer semester
2.			

Offered courses

Topic	Description	Teacher/ University	Time/ Location
1. GI Business	<p>Eight hours of lessons target the following topics in two-hours blocks:</p> <ol style="list-style-type: none"> 1. Business in the GI market 2. Needs of branches for GI 3. Marketplaces for geographic information 4. Services of GI Marketplaces <p>Mini-projects in groups of two or three students (prepared</p>	Christoph Brox, IfGI, broxc@ifgi.uni-muenster.de	Summer 2004, nice and warm city

Topic	Description	Teacher/ University	Time/ Location
	<p>before and finished after the lectures):</p> <ul style="list-style-type: none"> ?? Requirements of banks and insurance companies to a vertical marketplace for geographic information ?? Test of existing GI marketplaces ?? Results: Students presentations, Students papers <p>Targeted audience: 3rd and 4th year students</p>		<p>Executed in Klagenfurt, Austria, May 2003.</p> <p>Evaluation on scale from 1 (very good) to 5 (bad):</p> <p>Concept: 1,1</p> <p>Execution: 1,1</p> <p>Teacher: 1,1</p> <p>Overall: 1</p>
2. Mobile Geo-computing	<p>Eight hours of lessons target the following topics in two-hours blocks:</p> <ul style="list-style-type: none"> ?? Location Awareness and Context Awareness ?? Mobile Networks and Wireless LAN ?? Wave Propagation ?? Positioning ?? Mobile Clients ?? "mobile" Client/Server-Applications ?? "Mobile Society" <p>After the lectures, we will have a project using wireless LAN and mobile devices (compaq ipaq). The students will learn to work with mobile clients connected to a distributed client/server architecture. All necessary hardware will be provided by the lecturer.</p> <p>~ 32 contact hours, workload ~ 45 hours</p> <p>Targeted audience: beginners and advanced students</p>	Ingo Simonis, IfGI, simonis@ifgi.uni-muenster.de	<p>Fall 2003, Lisbon, Athens, Castellón, Zurich, Uppsala</p> <p>If applicable: place, date, documentation, and material of executed eduGI.net exchange</p>

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<p>3. Spatial Cognition and Wayfinding – Theory and Applications</p>	<p>People get lost in buildings such as airports, in hypertext systems such as the WWW, and have problems to interact efficiently with computers! WHY and WHAT IS MISSING?</p> <p>Spatial cognition research has become a hot topic in the area of GIS within the last 10 years. This course deals with topics such as how people perceive and cognize spatial information, how they reason and communicate about it, and how they represent spatial information. It is important to integrate such knowledge and theories into spatial information and design systems to improve system usability and efficiency.</p> <p>In this course we will first review some theoretical foundations of spatial cognition and wayfinding. Then we will look at applications in the areas of Artificial Intelligence, Navigation, and GIS that integrate cognitive theories. Students will therefore see that human cognition is relevant to many aspects of geographic information science.</p> <p>The course will mainly consist of lectures, readings, student presentations, and discussions of material from several disciplines, such as cognitive science, psychology, linguistics, computer science, and artificial intelligence. A written assignment will complement the course.</p> <p>The course will be structured into two parts, which deal with the following topics:</p> <ol style="list-style-type: none"> 1. Theory of spatial cognition <ol style="list-style-type: none"> 1.1 Introduction and motivation 1.2 Psychologies of space 1.3 Representations 1.4 Linguistic concepts 1.5 Ecological approach to perception and behavior 2. Applications <ol style="list-style-type: none"> 2.1 Navigation in the real world 2.2 Navigation in hypertext systems 2.3 Spatial cognition in GIS <p>Results: student presentations, student papers</p>	<p>Dr. Martin Raubal, IfGI, raubal@ifgi.uni-muenster.de</p>	<p>Summer 2004 / Sweden, Portugal, Spain, Switzerland (preferred but not exclusively limited to)</p> <p>If applicable: place, date, documentation, and material of executed eduGI.net exchange</p>

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4. Evaluation of GIS	<p>This course will give students the possibility to actively deal with the evaluation of GIS projects. The goal is to select a GIS for a particular purpose. Both the lectures and the used literature focuses on transferring knowledge necessary during the selection process. The course starts with an introduction into the problem area and gives an overview of different initial situations. It then discusses strategies for introducing a GIS and the organization's / company's information needs and feasibility study. This is followed by the possible positive and negative impact of GIS and the importance of a cost-benefit analysis. Finally, the evaluation process is discussed based on various K.O. and evaluation criteria.</p> <p>Eight hours of lessons target the following topics in two-hours blocks:</p> <ol style="list-style-type: none"> 1. Strategic planning for the introduction of GIS 2. Needs analysis and feasibility study 3. Impact of GIS, cost-benefit analysis 4. Evaluation process, choosing a GIS <p>Mini-projects in groups of two or three students (prepared before and finished after the lectures) will deal with evaluating tenders and choosing a GIS from a case study. Results: student presentations, student papers Vision for hosting university: Start-up for a project with a company that wants to introduce a GIS, start-up for a diploma thesis.</p>	Dr. Martin Raubal, IfGI, raubal@ifgi.uni-muenster.de	<p>Summer 2004 / Sweden, Portugal, Spain, Switzerland (preferred but not exclusively limited to)</p> <p>Executed in Klagenfurt, Austria, May 2003.</p>
5.	A. The nature of geographic data (geographic entities,	Dr. Emmanuel	?

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Geographic Database Systems	<p>dimensions of geographic entities, types of attributes)</p> <p>B. Information Systems and Databases (data and information, introduction to Information Systems and Databases, Database Management Systems, development of Database Systems)</p> <p>C. Database Systems (conceptual, logical and physical modeling, ER and Extended ER models, relational and object-oriented models, UML, database languages SQL, OQL, basic data structures and algorithms)</p> <p>D. Geographic Database Systems (representation models, geographic/spatiotemporal data models, spatial data structures, topological data structures, computational geometry and algorithms)</p> <p>E. Commercial Geographic Database Systems (GIS architectures, commercial GIS and spatial database systems, Oracle Spatial, etc.)</p> <p>F. Research Issues in Geographic Data Systems (modern decision support systems, semantic web, spatial information retrieval, information integration, spatial knowledge discovery)</p>	Stefanakis, U Harakopio, Athens, estef@hua.gr	<p>Executed in Münster, Germany, May 2003.,</p> <p>Evaluation on scale from 1 (very good) to 5 (bad):</p> <p>Relevance: 1,5</p> <p>Execution: 2,1</p> <p>Teacher: 1,25</p> <p>Overall: 2,0</p>
6. Navigation	I will offer a one-week-course in Navigation Modeling in the	Prof. Dr.	?

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	<p>framework of eduGI.net. Location-based services will more and more center the automatic route guidance aspect. There are a lot of challenges in modeling networks such that algorithms can analyze, select, and communicate routes in a way easy to understand for a user in a specific context: e.g., costs in edges and nodes, time-dependent costs, or landmarks. The nature of the problems is not (alone) a technical one, considering the human user with her / his specific cognitive abilities. Some experiments will demonstrate the relevance of this dimension.</p> <p>I plan to structure the course in two parts, starting with lectures showing relevant (classical and recent) structures and algorithms, and then letting implement small Java applets demonstrating specific topics. At the end of the week we should have a webpage presenting our results.</p>	<p>Stephan Winter, TU Vienna, winter@geoinfo.tuwien.ac.at</p>	<p>Executed in Münster, Germany, July 2003.,</p> <p>Evaluation on scale from 1 (very good) to 5 (bad):</p> <p>Concept:</p> <p>Execution:</p> <p>Teacher:</p> <p>Overall:</p>
7.			<p>If applicable: place, date, documentation, and material of executed eduGI.net exchange</p>
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