
The Preparation of GIS Students at the United Arab Emirates University for the Job Market: Considerations and Challenges

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Introduction

The Geography Program at UAEU launched the GIS track in the 1999- 2000 academic year.

In the 2003- 2004 academic year, the College of Humanity and Social Sciences changed the name of the track from GIS to Geo-informatics.

UAEU has the highest level of resources around the country in terms of staff, computer systems, and GIS software. It also has the highest student numbers.

Objective

This paper discusses the challenges facing UAEU GIS graduates in the job market, and answers this question:

does the GIS track in the Geography program at the UAEU prepare students well for the various challenges of the job market?

Here, two questions emerge:

firstly, how can the quantity of qualified GIS graduates be increased?
secondly how can the quality of qualified GIS graduates be increased?

Methodology

Two questionnaires were prepared by the author and circulated to the GIS track alumni and organizations in the UAE that used GIS applications.

The first step for the alumni survey was to contact the 151 students who had graduated from the GIS track in the past three years.

1st questionnaire (Alumni) sought to surface the quality of the knowledge they received during their studies and whether it had been useful for their jobs.

2nd questionnaire (organizations) investigate the views of employers on the qualities that GIS alumni brought to their organizations and which of these were most useful to them.

Results

The study surveyed alumni who graduated from the academic years of 1999- 2000 to 2002- 2003.

151 students graduated during this four-year period.

Out of them, 51.6 % (78) were unemployed, 15.2% (23) do not use their GIS education in their jobs, 19.2% (29) work in GIS-related fields.

There was no response from the rest (13.9% or 21 individuals).

Among the respondents who use GIS in the field, 44% work in the federal government, 40% in local government, and 16% in the private sector.

Assessment of the GIS track by alumni

Criteria	Assessment					Average
	Excellent	Very good	Good	Marginal	Not adequate	
Satisfaction with the curriculum of program.	-	38%	39%	23%	-	Good
Adequate number of courses in GIS subjects.	-	-	25%	-	75%	Not adequate
Satisfaction with GIS knowledge they learn.	-	-	31%	-	69%	Not adequate
Satisfaction with textbook and material of the GIS courses and related subjects.	-	23%	58%	19%	-	Good
Satisfaction with the facilities of program.	8%	26%	46%	20%	-	Good
Satisfaction with the environment of UAEU.	-	21.5 %	64 %	14.5%	-	Good
Rate the faculty in Geography program (GIS).	19%	37.5%	31%	12.5%	-	Very Good
Internship	-	-	19%	12%	69%	Not adequate
Quality of undergraduate education.	6%	56%	31%	7%	-	Very Good
Prepared for job after graduate.	6%	37.5%	31%	25.5%	-	Good

Weaknesses indicated by alumni and the proposed improvements

Weaknesses	Proposed improvements
Dissatisfaction with program curriculum	<ul style="list-style-type: none">•Review curriculum with the program committee- examine the quality and quantity of the courses.•Change courses (some are out of focus)
Need for new courses	<ul style="list-style-type: none">•Review existing courses with the program committee and suggest the new courses that need to be introduced.•Increase the number of GIS courses in the curriculum from 45% to 60%•Link these courses with the job-market's needs.•Provide more field experience throughout the courses.•Increase the relevance of the courses.
Dissatisfaction with quality of program and knowledge obtained	<ul style="list-style-type: none">•Offer electives in advanced GIS topics.•Place more weight on specialization courses relative to college and university requirements.
Low involvement in conference presentations and technical papers.	<ul style="list-style-type: none">•Provide guidance on research skills.•Pair students and professors together for GIS technical papers.•Advise faculty to encourage students to take part in joint efforts for publishing their work. If the joint work is accepted for presentation in a conference, encourage the student to attend the conference and present the work.

<p>Theoretical aspects emphasized in the program; few links to local industrial projects.</p>	<ul style="list-style-type: none"> • Advise faculty to incorporate local projects in their courses and research. • Integrate the program’s curriculum with the needs of the job-market.
<p>Internships not conducted in suitable organizations; length of internships is insufficient</p>	<ul style="list-style-type: none"> • Internships should take place during one of the semesters of the last year of studies • No courses should be taken up during the semester that the internship is taking place • Convince employers to partner the UAEU’s student internship program. They will benefit by obtaining productive and employable students who have been well-prepared by the University through condensed workshops. • Follow the rules of the UAEU’s Internship and Work-Integrated Learning (iWIL) unit.
<p>Lack of preparation for job market.</p>	<ul style="list-style-type: none"> • Re-evaluate the role of the internship in the curriculum. • Involve GIS administrators to make curriculum suggestions to meet the needs of the job-market. • Create a website where the university and employers can provide students with data on local issues, job opportunities, and interviews with individuals currently working in the GIS field in the UAE.

Weaknesses indicated by GIS administrators and improvements proposed

Weaknesses	Proposed improvements
Areas of specialization are insufficient.	<ul style="list-style-type: none">•Increase number and variety of specializations .•Increase variety of GIS courses
Poor communication between University and job market.	<ul style="list-style-type: none">•Senior GIS professionals could lend their services as guest lecturers.•Local GIS administrators could make curriculum suggestions based on the needs of the job market.•Local GIS data could be provided to students.
Internships too short	<ul style="list-style-type: none">•Increase length of internship to one semester.•Organize internships during summer.•No courses should be taken up during the semester that the internship is taking place
Weaknesses in statistics, computer science and surveying.	<ul style="list-style-type: none">•The GIS course curriculum could include three core courses on each of these fields.
Program should focus on the practical management of a GIS system	<ul style="list-style-type: none">•Increase the variety of GIS management courses.•Invite GIS professionals to be as guest lecturers and introduce projects carried out in their organizations.

Discussion and Recommendation

The alumni reported that, out of the 132 credit hours in the curriculum, only 45 credit hours (made up of 15 courses) were given up for GIS courses, which was much less than was required. This issue needs further consideration, taking into account the diversity of program specializations.

More than 87% of the alumni pointed out that additional practice in the statistics, computer science, and surveying would have improved their undergraduate education.

Internship

create UAEGIS Educational website

- provide data
 - help students obtain information on the local labor market
 - Students will also understand how they can continue learning about their community.
 - encourage students to interview GIS professionals and find out why they chose their present job and what factors they thought were important in choosing a job
 - This will help students learn about interesting job openings, skill and requirements and working hours
 - They would also find out how to contact companies or agencies with job opening
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Professionals Requires in the Job Market

(systems operation, computer science, management skills, information systems, spatial information science, and geographic science)

These are the three key areas where expertise is needed:

Management of GIS projects (GIS project managers)

GIS database skills (database administrators)

Application development for database and users (GIS software analysts)

The GIS course curriculum can become part of the following five faculties at the UAEU:

College of Humanity and Social Sciences: Geography, and Urban Planning.

College of Science: Environmental science, Water resources, Geology, and Mathematical Sciences.

College of Business and Economic: Statistics.

College of Information Technology: Computer Science, Computer System Engineering, Information Systems, Software Engineering, and Network Engineering.

College of Engineering: Civil and Environmental Engineering, and Architectural Engineering.

Summary

The results from the questionnaires indicated that:

- A number of weaknesses were highlighted
 - The curriculum has to be redesigned
 - GIS users are now more interdisciplinary than ever
 - Study the job market requirement
 - The GIS program should also involve industry in the training of students
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Thank you

Discussions!!!
