
Overall Course Evaluation Report by Pilot Students

Course: GIS and RS for Environmental Protection

Executive Summary

This document presents briefly a synthesis of the evaluation questionnaires submitted by EPCA Course 1: GIS and Remote Sensing for Environmental Protection pilot students.

The piloting phase of EPCA Courses took place from October 2019 to mid-November 2019, a seven-week time period for students to follow the syllabus, study the materials, and deliver all the exercises/projects of the course. Pilots ran in parallel for each course independently, and four students enrolled in each course (12 total) coming from all partnership universities. The objective of the pilots was to assess course contents and effectiveness and to gain insights depending on the performance of students regarding the course complexity and workload.

Introduction

The evaluation questionnaire given to pilot students upon completion of the course consists of six questions. The questionnaire is common to all courses. It adopts a mixture of closed and open-ended questions in an attempt to provide course developers with insights on the course outline, content, quality, and effectiveness. All closed-ended questions however, have an open-ended part that accompanies them, where students are asked to comment on their choices. Question 3 has six follow up questions. The list of questions is the following:

1. Do you think that the aim, as described above, has been reached well in this course?
2. How was the workload of the course?
3. How do you grade the course as a whole?
 - 3.1. Mark the strongest weeks of the course
 - 3.2. Why these weeks are strongest?
 - 3.3. Mark the weakest weeks the course:
 - 3.4. Why these weeks are most weak?
 - 3.5. Which parts of the course do you recommend to omit?
 - 3.6. What parts of the course do you recommend to add?
4. How was your background knowledge to this course? Was the course too easy or too complicated for your knowledge?
5. Grade the quality of contacts with lectures:
6. How do you evaluate the course?

Results

To the GIS and RS for Environmental Protection course four pilot students enrolled, one European and three Central Asian. Three of them managed to complete the course on time. Two of them are from Uzbekistan (Urgench State University and Karakalpak State University) and the other is from Greece (National Technical University of Athens). In what follows, a brief synopsis of the pilot students' answers to the questionnaire is presented.

When questioned whether the course reached its aim (Question 1), pilot students' answers range from 4 to 5 on the rating scale, showing positive reception of the course on behalf of the pilot students. Commenting



on and justifying their answers they said that they learned a lot from both the lectures (theoretical part) and the exercises (practical implementation of knowledge gained).

Regarding course overload (Question 2), since answers present variation between 3 and 5 (from fair to high) rating scales, results are a bit inconclusive. We can definitely state that for at least one of the pilot students, the course seemed to have heavy workload especially with regards to two specific exercises. Meanwhile, for the other two, the workload seemed fair. Since one of these comes from a European University, Central Asian pilot students are split concerning that question. One thing is sure though: none of our pilot students assessed course workload falling on the left side of the rating scale, meaning that no one found course workload to be less than fair. This finding enables us to say that the course is robust and serves both undergraduate and postgraduate levels.

Overall assessment of the course quality and content (Question 3) reached the highest score (very good) with a consensus among students. Quoting one student: "I have further strengthened my practical and theoretical skills by performing any assignments during the course" proves that both theoretical and practical parts of the course intertwined with each other to form a coherent course in terms of content, quantity, quality, and complexity when needed. Follow up questions concerning strongest and weakest weeks of the course (Questions 3.1 – 3.4), show again variance among students. However, week 4 has been selected (by both Central Asian University students) as being the strongest, while weeks 2, 3 and 5 have all been characterised as such, at least once. Justifying weeks 4 predominance, both students mentioned that the assignments were complicated and they needed much theoretical knowledge in order to understand and complete the exercises. Meanwhile, for the weakest week, opinions are also split. Week 3 is mentioned twice, the reason being that students found the exercises fairly easy; "simple and understandable". For the same reason, weeks 1 and 2 are also assessed by students as weak at least once. Moreover, two students follow this further by suggesting that weeks 1 and 2 respectively should be entirely omitted from the course (Question 3.5). Finally, one suggests to omit a particular exercise from week 2. When asked what they would add to the course (Question 3.6), pilot students replied three different things: 1) more difficult exercises for the Remote Sensing module of the course, 2) better instructions of the software used for performing the exercises, and 3) explicitly guiding the students on which software instructions to install. From these three points, it can be deduced that most difficulties students faced are related to software installation and use. Especially, since these two comments come from Central Asian Universities students, who may face issues on internet connections, speed, and even, in cases, availability. Anyhow, answers suggest that the course could be improved in an effort to accommodate different students' needs and special characteristics.

Regarding question 4, on whether the course addresses, meets, or extends students' background knowledge, students highlighted that the course needs a reasonable background knowledge especially in informatics, geography, geology, cartography, and geodesy -i.e., geospatial science. This especially holds for the two Central Asian students, who in addition, had issues with English, hence had to seek mentoring and often had to translate exercise instructions to their native languages. The European student had a Bachelor in Geography and an MSc. In Geoinformatics and had no problem following the course smoothly. She, in fact, has asked for more complex exercises (see paragraph above). Since the course is addressed to Central Asian students, their opinion is mostly valued and we assume that not only pilot students but also future ones will not have the background knowledge that will allow them to follow the course effortlessly. Nevertheless, with the mentoring of Central Asian University Professors involved in the project, they will be able to perform course tasks adequately enough.

As it concerns communication and contacts between course teachers and students (Question 6) students' answers range from 4 to 5 on the rating scale, indicating overall good collaboration. Most teachers managed to answer to students' questions, guide them through the course, and grade their works effectively and on time throughout the piloting phase.

Finally, through Question 6 students are asked to evaluate the course as a whole. Difficulties and misunderstandings have undoubtedly emerged in the pilot process, especially since not all students have strong geospatial science background. In this sense, the gradual complexity of the course contents, materials, and tasks during the seven-week period is justified. There is consensus among students on the quality of content provided to them for performing the tasks required. They especially highlighted the diversity of educational material given to students which includes internet links, open access references, videos, power points presentations, text lectures, graphics and maps, datasets, etc. Another strong point of the course as inferred from their answers, is the variety of software used for the exercises such as QGIS, SNAP, XYZWin, SQL, PostGIS, pgAdmin among other. Positive aspect of the course is that it triggers students to search for new GIS, RS, and Environmental Protection theoretical issues and applications that were hitherto unknown to them. This is achieved both by reading the relevant bibliographies provided, as well as by searching for additional ones. It is no surprise that all students state that they learned a lot from the course which reveals that the course has reached its goal.

To sum up, the following points should be brought into the spotlight:

1. The course is evaluated positively in almost all of its aspects.
2. The course builds new and extends previous students' knowledge.
3. The course content and structure meet the course developers' initial aims and objectives.

Taking upon these, we can state that the course although somewhat difficult is significant in shaping students' knowledge in GIS and Remote Sensing as well as in applying this knowledge to Environmental Protection issues and application in Central Asia and beyond.

On behalf of the Course coordinating team,

Dr. Eleni Tomai, National Technical University of Athens



Overall Course Evaluation Report by Pilot Students

Course: GIS and RS for Disaster Risk Management

Executive Summary

This document presents briefly a synthesis of the evaluation questionnaires submitted by EPCA Course 2: GIS and Remote Sensing for Disaster Risk Management pilot students.

The piloting phase of EPCA Courses took place from October 2019 to mid-November 2019, a seven-week time period for students to follow the syllabus, study the materials, and deliver all the exercises/projects of the course. Pilots ran in parallel for each course independently, and four students enrolled in each course (12 total) coming from all partnership universities. The objective of the pilots was to assess course contents and effectiveness and to gain insights depending on the performance of students regarding the course complexity and workload.

Introduction

This course is targeted to students of environmental studies, physical geography, engineering, landscape ecology, and sustainability of both undergraduate and graduate levels. This course aims at providing an in depth account of the use of Geographic Information System (GIS) and Remote Sensing (RS) as valuable resources for disaster risk management. Learners will be familiarized with concepts, techniques, algorithms, and tools to use in their professional endeavor for handling issues related to Disaster Risk Management (DRM).

The amount of Course **ECTS credits is 10**. Course hours distribution by methods of studies is as follows: Lectures – 30, Exercises – 154, Individual study – 96 (Total - 280).

The evaluation questionnaire given to pilot students upon completion of the course consists of **six questions**. The questionnaire is common to all courses. It adopts a mixture of closed and open-ended questions in an attempt to provide course developers with insights on the course outline, content, quality, and effectiveness. All closed-ended questions however, have an open-ended part that accompanies them, where students are asked to comment on their choices. Question 3 has six follow up questions. The list of questions is the following:

1. Do you think that the aim, as described above, has been reached well in this course?
 2. How was the workload of the course?
 3. How do you grade the course as a whole?
 - 3.1. Mark the strongest weeks of the course
 - 3.2. Why these weeks are strongest?
 - 3.3. Mark the weakest weeks the course:
 - 3.4. Why these weeks are most weak?
 - 3.5. Which parts of the course do you recommend to omit?
 - 3.6. What parts of the course do you recommend to add?
 4. How was your background knowledge to this course? Was the course too easy or too complicated for your knowledge?
 5. Grade the quality of contacts with lectures:
 6. How do you evaluate the course?
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Results

Four pilot student were enrolled to the GIS and RS for Disaster Risk Management course, one European (from VGTU) and three from Central Asia (1 from Uzbekistan and 2 from Kyrgyzstan). Nobody of them managed to complete the course on time. The best result was shown by Iroda – 87% completeness (52 tasks from 60) and Rokas – 75% completeness (45/60). Results of another students are worse: Atai – 52% (31/60), Begaiym – 33% (20/60).

In what follows, a brief synopsis of the pilot students' answers to the questionnaire is presented.

When questioned whether the course reached its aim (Question 1), pilot students' answers range from 4 (2 answers) to 5 (also 2 answers) on the rating scale, showing positive reception of the course on behalf of the pilot students. Commenting on and justifying their answers they said that they learned a lot from both the lectures (theoretical part) and the exercises (practical implementation of knowledge gained).

Regarding course overload (Question 2), one answers is 3, and three answers are 5. So we can definitely state that the course seems to have heavy workload. In fact, course is master degree level, 10 ECTS, so workload is really huge. Also could be noted, that workload evaluation as fair was given by student from European university.

Overall assessment of the course quality and content (Question 3) did not reached a consensus among students: one evaluation is 3, one – 4, and two – 5.

Course creators could be glad, that students opinions are “The course materials can be used not only in the sphere of disaster risk reduction but also in land management, water management systems and forestry as an approach of forecasting, evaluating and monitoring.” Or “I personally did enjoy the course and learned a lot.” However, creators of the course should pay attention to such remarks as “But, sometimes the exercises are too challenging. Special conditions must be created. Otherwise, lack of good internet freezes the programs and you just cannot work etc. Some exercises demand better computer resources. The overall layout of the course is confusing. Does not align with the MOODLE page with AC system.” Or “The concept of the course is very good, you just need to correct its content. And on MOODLE you need to structure the course.”

The additional questions concern strongest and weakest weeks of the course (Questions 3.1 – 3.4). Answers are different among students, however, week 3 was mentioned by three students, and week 4 – by two students. Again, weeks 2, 4, 6 and 7 were selected as weak. Here we can obtain some collision in evaluation, because some students evaluated weeks 2, 4 and 6 as strongest. Here I ould like to mention some remarks done by students: “It is the weakest week due to the theoretical part was not connected and completed with related exercises. The exercise itself is not clear.” “A lot of time was spent reading the theory. It is necessary to reduce the amount of information and simplify the practical part.” “The content of lectures does not fully correspond to the content of exercises”. It is necessary to pay attention to these remarks during process of improving the course materials.

Students do not suggest to omit any part of a course (Question 3.5). However two students prefer to simplify a course. When asked what they would add to the course (Question 3.6), pilot students did not suggested any part. However they would like to have more clear instructions of the software used for performing the exercises, also they want more explicitly guiding for software installation process. Anyhow, answers suggest that the course could be improved in an effort to accommodate different students' needs and special characteristics.



Regarding question 4, on whether the course addresses, meets, or extends students' background knowledge, students highlighted that the course needs a reasonable background knowledge especially in informatics, geography, geology, cartography, and geodesy -i.e., geospatial science. Students answers are absolutely different: "My background is sufficient enough to understand some lectures and practical works." Vs. „Well, I was absolutely new to this field. So the course was very complicated to me. But I was eager to learn and study. It has taken all my free time."

As it concerns communication and contacts between course teachers and students (Question 6) three answers are 4, and one answer - 5 on the rating scale, indicating overall good collaboration. Most teachers managed to answer to students' questions, guide them through the course, and grade their works effectively and on time throughout the piloting phase.

Finally, through Question 6, students are asked to evaluate the course as a whole. Three students did very extended evaluation analyzing each part of course in details. There is consensus among students on the quality of content provided to them for performing the tasks required. They especially highlighted the diversity of educational material given to students which includes internet links, open access references, videos, power points presentations, text lectures, graphics and maps, datasets, etc. Another strong point of the course as inferred from their answers, is the variety of software used for the exercises such as QGIS, SNAP, XYZWin, SQL, PostGIS, pgAdmin among other. Positive aspect of the course is that it triggers students to search for new GIS and RS usage areas, for example, "The materials of the course can easily be implemented. For instance, the evaluation of water resources can be applied in the following fields:

To evaluate industrial pollution.

To evaluate the influence of drainage and collectors condition.

To evaluate the dynamics of the lakes.

To understand the reason for agricultural pollution. "

However, the main remark is, that "Very big un-clarity with exercise numbering in informative systems and in the exercise packages. Numbering of exercises and lectures should be identical everywhere (packages, EPCA, Moodle, etc.)." Developers should correct this situation as soon as possible.

To sum up, the following points should be brought into the spotlight:

1. The course is evaluated positively in almost all of its aspects.
2. The course builds new and extends previous students' knowledge.
3. The course content and structure meet the course developers' initial aims and objectives.
4. The course developers got excellent inspiration to improve course materials.

Taking upon these, we can state that the course although somewhat difficult is significant in shaping students' knowledge in GIS and Remote Sensing as well as in applying this knowledge to Disaster Risk Management issues and application in Central Asia and beyond.

On behalf of the Course coordinating team,

Prof. Eimuntas Parseliunas, Vilnius Gediminas technical university



Overall Course Evaluation Report by Pilot Students

Course: Spatial Data Infrastructures for environmental protection and disaster risk management

Executive Summary

This document summarizes the pilot students evaluation of the EPCA course 3.

The piloting phase of EPCA Courses took place from October 2019 to mid-November 2019, a seven-week time period for students to follow the syllabus, study the materials, and deliver all the exercises/projects of the course.

Pilots ran in parallel for each course independently, and four students enrolled in each course (12 total) coming from all partnership universities. The objective of the pilots was to assess course contents and effectiveness and to gain insights depending on the performance of students regarding the course complexity and workload.

Introduction

The evaluation questionnaire given to pilot students upon completion of the course consists of six questions. The questionnaire is common to all courses. It adopts a mixture of closed and open-ended questions in an attempt to provide course developers with insights on the course outline, content, quality, and effectiveness. All closed-ended questions however, have an open-ended part that accompanies them, where students are asked to comment on their choices. Question 3 has six follow up questions. The list of questions is the following:

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4. How was your background knowledge to this course? Was the course too easy or too complicated for your knowledge?
5. Grade the quality of contacts with lectures:
6. How do you evaluate the course?

Results

Three students were able to complete the course. This report is based on the evaluation provided by these three students.

Question 1

All pilot students answered 4, when questioned if the course reached its aim. This score shows a positive evaluation, but two of them provided comments with some additional



distinction between the theoretical part and the practical one. Both commented that the theoretical part reached its aim more than the practical one.

Question 2

Regarding course overload, all rated it as high. Since this rate was unanimous, and since there were comments about the difficulty of the exercises, the assignments should be filtered and simplified to cover the key concepts without overwhelming the student.

Question 3

The average grade was 3.3. To improve this, we definitely need to simplify some exercises that were considered difficult, unclear and confusing. The later question on the students evaluation form (question 3.4 and 3.5) provided us better insights about the parts that were less clear and more difficult to follow.

All students pointed our week 2 as the best one. Week 3 was also tagged as strong.

Regarding the weakest weeks of the course, there is no consensus among the students. Since the students are from very different countries and provided different backgrounds, each one has different difficulties in different parts of the course.

To have a deeper understand of the difficulties, we analysed the detailed comments of each student. From the detailed comments, we have to further develop some contents on these weeks (specially on week 4) and to review the exercises (on weeks 4 and 5). On week 1 and week 6, only minor changes are needed, mostly to improve the readability of the existent contents.

We have exercises based on Geonode, that requires its installation. Following student comments, we should avoid this requirement and rewrite the exercises to use an existing installation available on the web. The Geonode installation was a major challenge for two students. We have to remove such difficulties.

Only one student recommend some additional topics to add and it was to enhance the Web Services component. But the Web Services were also the major bottleneck for some other students. The course has been evaluated with a high difficulty level, so we can not add more contents related with this technology, even if Web Service and Web GIS is becoming more and more important.

Question 4

None has evaluated the course as easy. All said that there are lots of new contents in the course. From the previous points already discussed, if we rewrite or even eliminate the most difficult parts, we will improve the overall feeling of difficulty.

Question 5

We had two completely different evaluations: from one student, the first to do the course, which complained about the lack of feedback. At the beginning, no notifications were received by the lectures. Former students evaluated the feedback very positive,



mostly because the notification system was already configured and notifying the lectures when questions or submissions were uploaded.

Question 6

The final summary provided by the pilot students pointed the same points already mentioned in the evaluation questions and comments.

The pilot students comments were very helpful and their contribution to the evaluation is really helpful to improve the course.

From the coordinator's perspective, the evaluation is positive. If we remove specific bottlenecks pointed out the the students related to some exercises, the course will became much better.

The course coordinator,

Jorge Gustavo Rocha
Minho University