



## Course analysis of VT19-5HI020 course

After the course has ended, the course leader fills in this template. This is an important part of the quality assurance of the programme. The programme director decides whether the template should be supplemented with further information/questions.

<b>Course code</b> 5HI020	<b>Course title</b> Standardisation within health informatics	<b>Credits</b> 5
<b>Semester</b> 2	<b>Period</b> 2	

<b>Course leader</b> Stefano Bonacina	<b>Examiner</b> Sabine Koch
<b>Other participating teachers</b> Sabine Koch, Eneimi Allwell-Brown	<b>Other participating teachers</b>

<b>Number of registered students</b> 49	<b>Number passed after regular session</b> 26 (as some group assignments had to be fixed) 45 after the amendments	<b>Response rate for course survey (%)</b> 63.27 %
<b>Methods for student influence other than course survey</b> Feedback and comments on the schedule and the agenda.		

### Note that...

This analysis shall (together with a summary of the quantitative results of the students course survey) be submitted to the LIME educational committee.

This analysis have been submitted to the LIME educational committee on this date:

## 1. Description of any implemented changes since the previous course based on previous students' comments

Compared with the previous edition of the course (i.e. VT18 5HI020), additional sessions on the installation and usage of the software tools have been added. Due to the high number of students, some students from the second year were hired as assistants during the lab sessions to give technical assistance.

## 2. A brief summary of the students' evaluations of the course

(Based on the students' quantitative answers to the course evaluation and comments. Quantitative compilation and possible graphs attached.)

Thirty-one (31) out of 49 students have completed the course evaluation survey. Twenty-six students have clinical background education, and five have technical background education, according to the collected answers. For each question of the survey, mean, standard deviation and coefficient of variation, as a percentage, are presented in Table 1.

#	Question	Mean	Standard Deviation	Coefficient of Variation (%)
1	In my view, I have developed valuable expertise/skills during the course.	3.1	1.0	33.6 %
2	In my view, I have achieved all the intended learning outcomes of the course.	2.9	0.9	32.5 %
3	In my view, there was a common theme running throughout the course – from learning outcomes to examinations.	3.2	1.0	32.8 %
4	In my view, the course has promoted a scientific way of thinking and reasoning (e.g. analytical and critical thinking, independent search for and evaluation of information).	3.0	1.2	39.5 %
5	In my view, during the course, the teachers have been open to ideas and opinions about the course's structure and content.	2.8	1.3	48.1 %
6	Teaching was based on real examples to develop students' professional knowledge.	3.1	1.2	37.6 %
7	This course built on knowledge I had acquired during the programme's previous courses.	2.8	1.0	36.1 %
8	My previous knowledge was sufficient to follow the course.	2.7	1.1	38.8 %
9	The course was challenging enough for me.	3.7	1.0	26.6 %

*Table 1. Summary of the students' evaluation of the course.*

In Table 1, the mean value of the answers ranges from 2.7 to 3.7, while the standard deviation ranges from 0.9 to 1.2. Finally, the coefficient of variation ranges from 26.6 to 48.1 per cent. From those numbers, it appears students' views are quite heterogeneous.

In the following part, I have listed the aspects to improve from the students' comments, adding some reflections and possible actions to take. They are as follows:

- Teaching style of theoretical parts, also in relation to the students' background;
- Instructions on the individual assignment;
- The practice hours and exercises could be extended;



- Unavailability of software for non-Windows based laptops;

Theoretical parts can be delivered in connection with practical scenarios. Those scenarios can be defined according to students' preferences and background. According to the size of the class, teaching style of theoretical parts could include "flipped classroom" and "World Café" conversational process.

As for the instructions of the assignment, written feedback will be asked to the students, in order to share the same understanding about the content and the requests of the assignment.

Then, to include more practical sessions, it appears the timeframe of the course has to be extended. At present the length of the course is three weeks, in a row. To extend the timeframe, "User needs, requirements engineering and evaluation" course - the preceding course - and "Standardisation within health informatics" course should start and end concurrently. In this way, learning sessions can be planned to offer more practical sessions and exercises.

Finally, unavailability of software for non-Windows based laptops can be solved if the software used in the course can be practised within web browsers, i.e. software as service. To this end a specific infrastructure as to be designed and implemented, as the software should be used by the students from outside KI network, as well. A computerised room with fifty or more workstations is currently unavailable.

### **3. The course-responsible reflection on the course implementation and results**

As for the implementation, the course was composed by five different parts, as follows:

- General part on standards within Health Informatics, including some recaps on medical terminology (i.e. SNOMED CT, LOINC, UMLS);
- Health Level 7 standard, v.2.x, including an installation session of software to generate HL7 v.2 messages, a demonstration session, a practical session with exercises to do in groups, and submit as assignment;
- Fast Healthcare Interoperability Resources (FHIR) standard, including an installation session of software to generate and check FHIR resources, a demonstration session, a practical session with exercises to do in groups, and submit as assignment;
- OpenEHR standard, including an installation session of software to generate template and archetypes, a demonstration session, a practical session with exercises to do in groups, and submit as assignment;
- Guideline Definition Language (GDL), including an installation session of software to generate coding of guidelines, a demonstration session, a practical session with exercises to do in groups, and submit as assignment;

Guest teachers gave lectures on standards organisations and their functioning (e.g. SIS, CEN, ISO standard development organisations), and on the application of standards for implementing the Swedish eHealth Infrastructure.

As for the results, the students have shown their ability to face problems within the subject, and propose reasonable solutions. 26 out of 49 students (53.06 %) passed the course after regular session, i.e. with the individual assignment and group assignments passed without the need for amendments. Additional 19 out of 49 students passed the course after the amendments. Three students (6.12 %) have not yet submitted the individual assignments (at the time of writing this report).



***Course strengths:***

- Laboratory sessions on HL7, FIHR, OpenEHR and GDL.

***Course weaknesses:***

- Teaching style of theoretical parts, also in relation to the students' background;
- Instructions on the individual assignment;
- Limited practice hours and exercises;
- Unavailability of software for non-Windows based laptops;

**4. Other comments**

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**5. The course-responsible conclusions and any proposals for changes**

(If any changes are proposed, please specify who is responsible for implementing these and a time schedule.)

For the course, changes at syllabus level have not been proposed. However, the comments from the students and the reflections from the course-responsible allow updating some aspects of the new edition of the course (semester VT20), please see section 2 above.