MJ2382 Energy Data, Balances and Projections 6.0 credits

Course Evaluation Analysis HT18

Division Energy System Analysis, KTH

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Overview:

The MJ2382 is offered every year during the autumn semester at KTH. This course is a recommended component of following MSc programs at KTH:

- Master's Programme, Energy Innovation, 120 credits, year 1, SMCS, Recommended.
- Master's Programme, Energy Innovation, 120 credits, year 2, SMCS, Recommended.
- Master's Programme, Innovative Sustainable Energy Engineering, 120 credits, year 2, Mandatory.
- Master's Programme, Sustainable Energy Engineering, 120 credits, year 2, Recommended.

Course Evaluation Analysis:

During Autumn 2018, in total 54 MSc students registered in the course. This compares to 39 students in 2017. This analysis provides the results obtained for the course evaluation done on CANVAS in December 2018 after the completion of the course. 27 students (50%) responded to the evaluation. The analysis is divided into following sections:

Students feedback over course contents in numerical choice questions:

Q1:

How was the course structure and coordination in general?
(1- not good, 5- Excellent).

1		0 %
2		0 %
3	2 respondents	7 %
4	14 respondents	52 %
5	11 respondents	41 %

Q2:

After each lecture and lab session, how motivated were you to work on the lab tasks and project work? (1- not motivated, 5- highly motivated).

1		0 %	
2	1 respondents	4 %	
3	6 respondents	23 %	
4	15 respondents	**58 %**	✓
5	5 respondents	**19 %**	✓
No answer	1 respondents	4 %	

Q3:

Do you think that the lectures and lab sessions from KTH lecturers met your expectations? (1- not at all, 5- Completely).

1		**0 %**	✓
2		0 %	
3	12 respondents	44 %	
4	5 respondents	19 %	
5	10 respondents	37 %	

Q4:

4) Do you think that the lectures and lab sessions from external guest lecturers met your expectations? (1- not at all, 5- Completely).

1	1 respondents	**4 %**	
2	4 respondents	15 %	
3	12 respondents	46 %	
4	8 respondents	31 %	
5	1 respondents	4 %	
No answer	1 respondents	4 %	

Q5:

Were the course passing requirements clear to you all times throughout the course? (1- not clear, 5- very clear).

1		**0 %**	
2		0 %	
3	4 respondents	15 %	
4	1 respondents	4 %	
5	21 respondents	81 %	
No answer	1 respondents	4 %	

Q6:

Did you get enough support from the teachers through the course?

1		0 %
2		0 %
3	3 respondents	11 %
4	4 respondents	15 %
5	20 respondents	74 %

Q7:

Did you like the contents of the course? (1- not at all, 5- yes very much).

1		0 %
2		0 %
3	1 respondents	4 %
4	14 respondents	52 %
5	12 respondents	44 %

Q8:

How informative were the lectures and lab sessions in general? Did you learn something useful for your future profession? (1- not at all, 5- very interactive).

1		0 %
2		0 %
3	2 respondents	7 %
4	18 respondents	67 %
5	7 respondents	26 %

Q9:

Did main project work and theory MCQ examination reflected the overall course contents? (1- not at all, 5- yes completely).

1		0 %
2		0 %
3	1 respondents	4 %
4	7 respondents	26 %
5	19 respondents	70 %

Q10:

After your participation in this course, would you like to recommend this course to any of your friends? (1- not at all, 5- yes very much)

1	1 respondents	4 %	
2		0 %	
3	3 respondents	12 %	
4	9 respondents	35 %	
5	14 respondents	54 %	
No answer	1 respondents	4 %	

Course highlights as copied from the evaluation´s descriptive answers given by students. Each bullet point correspond to a comment of a student:

- *It was my first course in this topic. I learned a lot.*
- *I feel like the topics were fully covered.*
- *Really enjoyed the course content.*
- *The courses were a good support for the project, which has been very instructive.*
- *I think the course is good comparing to other courses.*
- *Thanks for a great course!*
- *In my opinion, overall the class was well structured. The topic was really good.*
- *It is interesting to invite export to join the course*
- *I really like the "learn by doing" approach of the course and even though the number of lectures was not very high I feel like a learnt a lot.*
- *The main highlight is seeing how the theory is applied in the project. Additionally, experts telling us the problems and approximations they make during a study construction was insightful.*
- *I love that we are allowed to choose any country that we like and made our own analysis*
- *Understanding many underlying policies that we have never paid attention to.*

Suggestions for future improvement as copied from the evaluation´s descriptive questions. Each bullet point correspond to a comment of a student:

- *it would be a good idea if the software to be used in the project are given a special lecture before the lab session itself.*
- *Personally, I would have liked the lectures and the labs as well, to be more detailed, complex and specific on the topic. Since I have already learnt a lot, thanks to this course, I am sure that adding a level of complexity could benefit even more the students. Also because, more demanding lab*

sessions and lectures would motivate even more students to review and work on them as well as giving them more instruments to do even a better job with the final project. In conclusion, I want to say that the lectures were really well organized, but I would have liked them even more if they could have gotten more in detail, for example, in the energy balance and energy projections topic.

- *I would prefer having a few more lectures, with a bit more detailed approach to the topics.*
- *The course was maybe lacking a bit of focis on environmentÂ which I think is crucial when talking about environment. There could also be a bit more focus on the statistics behind top-down models. Maybe some understanding of the differences of consumption patterns between developing and developed countries could be added.*
- *I would have liked to have seen more top down methods or how to handle error in the studies.*
- *The guest lectures was a big minus, don't get me wrong. The idea of guest lectures is great and they had rely interesting things to say, the audio and video made it hard to focus on. Next time it would be great if the power point were supplemented by a video of the person giving the lecture, or some thing interactive the lecturer provide,. doing markings with the mouse etc to keep the attention of the students.*
- *The course was generally interesting and very useful. My recommendation though is to invite at least one of the external guest lecturer live in class (not only online)*
- *Perhaps, the course could have 7-8 lectures next year (or even be spread over both terms) instead of the 5 lectures we had.*
- *For the course project I would suggest to pick countries with easily available data in order to avoid frustration and time waste due to unsuccessful data mining.*
- *I think what can be improved is about the guest lecture, I feel that having guest lecture through Skype made me difficult to focus (but I think this is just personal opinion, other person may be okay with it). More than that I think everything is fantastic.*
- *I would suggest to modify the grade of the project per student according to his/her contribution.*

Reflections by course organizers for the improvement of next year edition:

Overall, the course was very well received – which reflects well on the 2-year cycle of restructuring that it went trough. The reviews are better than the 2017 edition of the course, mostly due to the insertion of new material, new guest lecturers, clearer structuring of the course, and continuous communication with the students. Nearly all students ´liked´ the contents of the course, and most felt they have learned valuable skills.

The comments reflect three key areas of improvement. Those are summarized in the table below, together with planned actions for the 2019 edition of the course to address them.

To be improved:	Planned actions for HT 2019
Some students suggest that certain topics could be covered more extensively during the course.	1) A Lab session will be added to the existing ones to better explain with examples the software to be used in the course. 2) Some of the lectures will be reviewed to insert more in-depth theoretical knowledge. Additionally, after each lecture more

	extra reading material will be advised to the students for those willing to learn more on the topic.
The guest lectures on online platforms were good but difficult to follow.	For the 2019 edition the guest lecturers will be invited to come in person to KTH for the lecture. If they will not be able to join in person, we will consider having a recorded lecture for improving the video and audio quality.
Modify the grade of the project per student according to his/her contribution	In the 2018 edition we have already asked students to add a table of contributions by student in the project report. That will be kept for 2019, stating better that this could result in differentiated grading among students in the same project group.

Finally, for the 2019 edition of the course, the course organizers are planning to insert more participatory and flipped classroom methods to improve the students learning.