Product Development in the life sciences VT23

Respondents: 37
Answer Count: 27
Answer Frequency: 72,97 %

In my view, I have developed valuable expertise/skills during the course.

In my view, I have developed valuable expertise/skills during the course.	Number of responses
to a very small extent	0 (0,0%)
to a small extent	0 (0,0%)
to some extent	0 (0,0%)
to a large extent	10 (37,0%)
to a very large extent	17 (63,0%)
Total	27 (100,0%)

	Mean	Standard Deviation	Coefficient of Variation	Min	Lower Quartile	Median	Upper Quartile	Max
In my view, I have developed valuable expertise /skills during the course.	4,6	0,5	10,6 %	4,0	4,0	5,0	5,0	5,0

In my view, I have achieved all the intended learning outcomes of the course.

In my view, I have achieved all the intended learning outcomes of the course.	Number of responses
to a very small extent	0 (0,0%)
to a small extent	0 (0,0%)
to some extent	2 (7,4%)
to a large extent	8 (29,6%)
to a very large extent	17 (63,0%)
Total	27 (100,0%)

	Mean	Standard Deviation	Coefficient of Variation	Min	Lower Quartile	Median	Upper Quartile	Max
In my view, I have achieved all the intended learning outcomes of the course.	4,6	0,6	14,1 %	3,0	4,0	5,0	5,0	5,0

In my view, there was a common theme running throughout the course – from learning outcomes to examinations.

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to a very small extent	0 (0,0%)
to a small extent	0 (0,0%)
to some extent	0 (0,0%)
to a large extent	7 (25,9%)
to a very large extent	20 (74,1%)
Total	27 (100,0%)

	Mean	Standard Deviation	Coefficient of Variation	Min	Lower Quartile	Median	Upper Quartile	Max
In my view, there was a common theme running throughout the course – from learning outcomes to examinations.	4,7	0,4	9,4 %	4,0	4,5	5,0	5,0	5,0

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).

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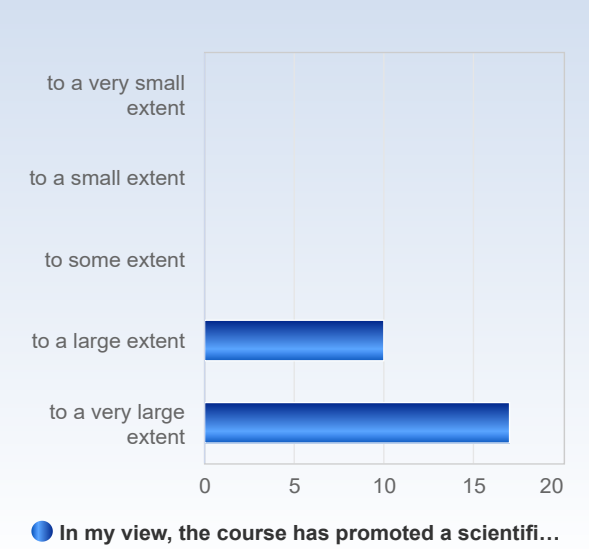
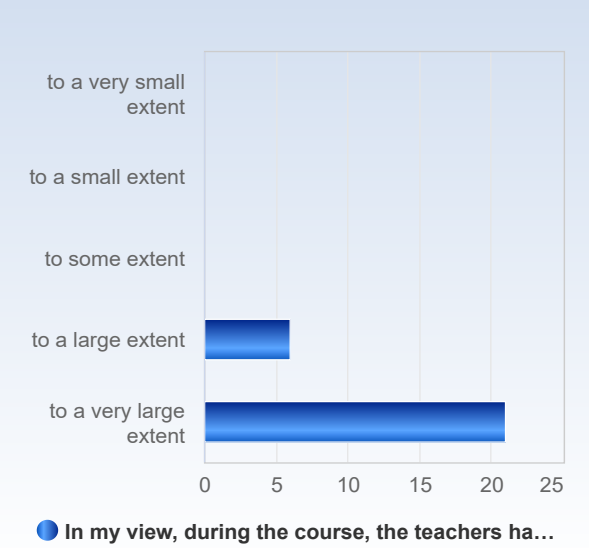
to a very small extent	0 (0,0%)
to a small extent	0 (0,0%)
to some extent	0 (0,0%)
to a large extent	10 (37,0%)
to a very large extent	17 (63,0%)
Total	27 (100,0%)



	Mean	Standard Deviation	Coefficient of Variation	Min	Lower Quartile	Median	Upper Quartile	Max
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).	4,6	0,5	10,6 %	4,0	4,0	5,0	5,0	5,0

In my view, during the course, the teachers have been open to ideas and opinions about the course's structure and content.

In my view, during the course, the teachers have been open to ideas and opinions about the course's structure and content.	Number of responses
to a very small extent	0 (0,0%)
to a small extent	0 (0,0%)
to some extent	0 (0,0%)
to a large extent	6 (22,2%)
to a very large extent	21 (77,8%)
Total	27 (100,0%)



	Mean	Standard Deviation	Coefficient of Variation	Min	Lower Quartile	Median	Upper Quartile	Max
In my view, during the course, the teachers have been open to ideas and opinions about the course's structure and content.	4,8	0,4	8,9 %	4,0	5,0	5,0	5,0	5,0

I was given the opportunity to reflect on what I have learned during the course.

I was given the opportunity to reflect on what I have learned during the course.	Number of responses
to a very small extent	0 (0,0%)
to a small extent	0 (0,0%)
to some extent	0 (0,0%)
to a large extent	9 (33,3%)
to a very large extent	18 (66,7%)
Total	27 (100,0%)

	Mean	Standard Deviation	Coefficient of Variation	Min	Lower Quartile	Median	Upper Quartile	Max
I was given the opportunity to reflect on what I have learned during the course.	4,7	0,5	10,3 %	4,0	4,0	5,0	5,0	5,0

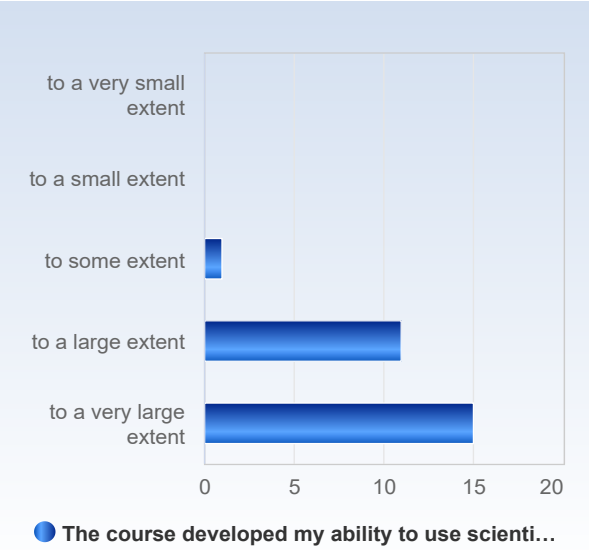
The course developed my ability to search for data and scientific evidence.

The course developed my ability to **search** for data and scientific evidence.	Number of responses
to a very small extent	0 (0,0%)
to a small extent	0 (0,0%)
to some extent	0 (0,0%)
to a large extent	10 (37,0%)
to a very large extent	17 (63,0%)
Total	27 (100,0%)

	Mean	Standard Deviation	Coefficient of Variation	Min	Lower Quartile	Median	Upper Quartile	Max
The course developed my ability to **search** for data and scientific evidence.	4,6	0,5	10,6 %	4,0	4,0	5,0	5,0	5,0

The course developed my ability to use scientific methods.

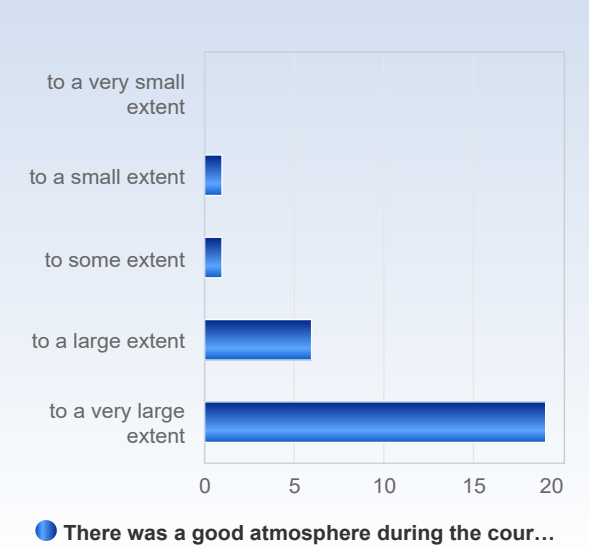
The course developed my ability to **use** scientific methods.	Number of responses
to a very small extent	0 (0,0%)
to a small extent	0 (0,0%)
to some extent	1 (3,7%)
to a large extent	11 (40,7%)
to a very large extent	15 (55,6%)
Total	27 (100,0%)



	Mean	Standard Deviation	Coefficient of Variation	Min	Lower Quartile	Median	Upper Quartile	Max
The course developed my ability to **use** scientific methods.	4,5	0,6	12,8 %	3,0	4,0	5,0	5,0	5,0

There was a good atmosphere during the course.

There was a good atmosphere during the course.	Number of responses
to a very small extent	0 (0,0%)
to a small extent	1 (3,7%)
to some extent	1 (3,7%)
to a large extent	6 (22,2%)
to a very large extent	19 (70,4%)
Total	27 (100,0%)



	Mean	Standard Deviation	Coefficient of Variation	Min	Lower Quartile	Median	Upper Quartile	Max
There was a good atmosphere during the course.	4,6	0,7	16,3 %	2,0	4,0	5,0	5,0	5,0

Kommentar
Very motivating
I believe the course is amazing. It was definitely my favorite subject. However it is very intense and the last two weeks prior the exam are very stressful. Mostly because you feel a bit burned out after the report.
collaborative approach of teaching with different opportunities for teamwork, fruitful lectures and workshops are held by teacher and guest lecturer increased our awareness about the product development process, opportunities and challenges.
the lecturer helps to accommodate the needs of every group and we really appreciate it
The teacher gave us so much space to discuss
Great management and course leadership. The course was structured and clear. It gave room for a lot of discussions, both in groups and in class as a whole. The daily blinkist was a great way to warm-up and gather the class before each lecture. Overall, this helped create a safe and fun environment!
I am very much inspired by the Caroline"s way of teaching and involving every person in the class. From day 1 , the course was interesting and kept me engaged through out the process of learning.
The atmosphere during the course was very good. We were in some extent able to create our own groups, and we were free to choose who to cooperate with for the tech case. Also the guest lectures were very interesting and everyone participated.
A bit stressfull but otherwise good
I like the lecturer but I am confused in most of the courses. Of course the lecturer announced what we need to do in the coming 3 months, but I couldn't remember all the things she told us in the first class. And when she asked me to do sth in the next course, I was confused:why I need to do this? Which step I am in? How I should do? So I really suggest the lecturer could tear the final report into parts and distribute each part in respective class, so each class could solve one specific problem and students are always asked to bring their thoughts to the next class. Thus, before the class begins, the student has already know what they are gonna do and they are motivated.

The psychosocial environment during the course was good (psychosocial environment includes among other things well-being, support, stress, equal treatment and discrimination)..

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to a very small extent	0 (0,0%)
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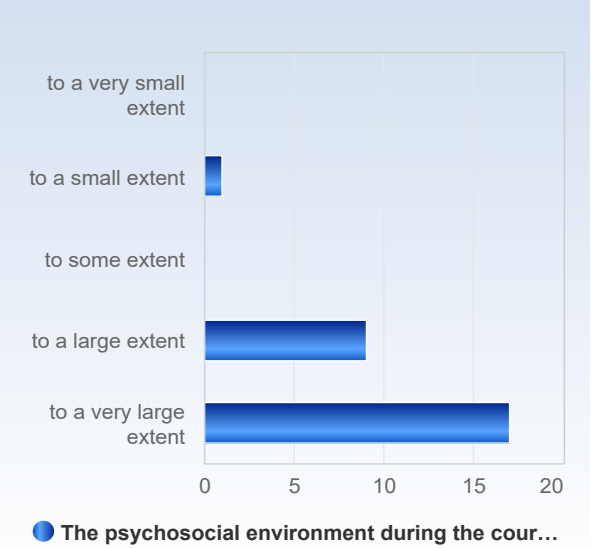

	Mean	Standard Deviation	Coefficient of Variation	Min	Lower Quartile	Median	Upper Quartile	Max
The psychosocial environment during the course was good (psychosocial environment includes among other things well-being, support, stress, equal treatment and discrimination)..	4,6	0,7	15,3 %	2,0	4,0	5,0	5,0	5,0

Kommentar
I experienced equal treatment and an overall very good psychosocial environment. I felt that I could always come to Caroline with problems.
Caroline provided a very good environment for our development. She made sure that all feedbacks is noted and all people have chance to speak. She also provided us with lots of stakeholders contacts.
I think students should be given a chance to miss one mandatory class if they communicate it to the professor prior to class. For example, i don’t think it’s fair to have to do a makeup assignment for missing one mandatory class for an extenuating circumstance which you have communicated prior to the class. I am aware it’s not for this course in particular!
Very stressed in the last a few days before deadline...

Relevant ethical issues were discussed during the course.

Relevant ethical issues were discussed during the course.	Number of responses
to a very small extent	0 (0,0%)
to a small extent	0 (0,0%)
to some extent	5 (18,5%)
to a large extent	8 (29,6%)
to a very large extent	14 (51,9%)
Total	27 (100,0%)

	Mean	Standard Deviation	Coefficient of Variation	Min	Lower Quartile	Median	Upper Quartile	Max
Relevant ethical issues were discussed during the course.	4,3	0,8	18,1 %	3,0	4,0	5,0	5,0	5,0

The course helped me prepare to deal with the ethical considerations I might face.

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to a very small extent	0 (0,0%)
to a small extent	1 (3,7%)
to some extent	5 (18,5%)
to a large extent	6 (22,2%)
to a very large extent	15 (55,6%)
Total	27 (100,0%)

	Mean	Standard Deviation	Coefficient of Variation	Min	Lower Quartile	Median	Upper Quartile	Max
The course helped me prepare to deal with the ethical considerations I might face.	4,3	0,9	21,2 %	2,0	4,0	5,0	5,0	5,0

Please describe how the course could be improved. Be as constructive as possible.

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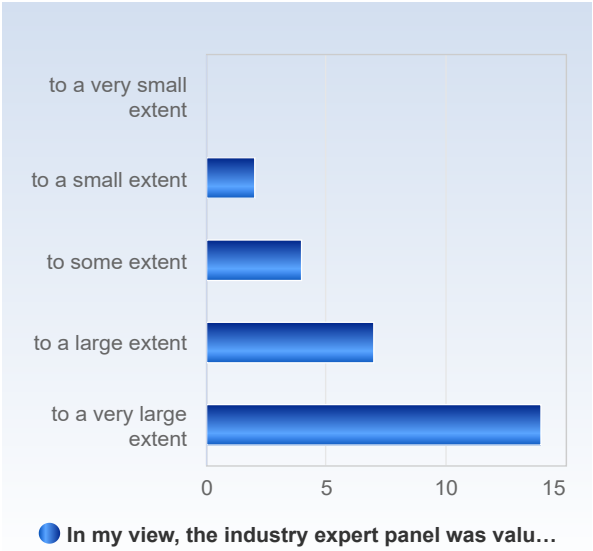
Allowing more time to spend in development of a viable product. This course might very well be 1 year. Subjects such as theory in Bioentrepreneurship could be reduced in order to allow more time for practical matters such as this. This is the real core of the program
The course can be combined with the Market Analysis course to have a longer and more well balanced approach towards developing a product by doing a more appropriate need searching and identification.
Rather than a big exam, it will be nice to have mini exams after each topic delivery such as IP, Regulatory, BioDesign, Pharma. It will help with fully understanding the contents and makes the students study the materials and grasp the concept well and not leave it to the last minute until the exam.
1. It could take more effective ways and time on the need analysis and proposed solution parts because I think it's the difficult parts to master the knowledge well but it's the most important parts for an entrepreneur to apply in his business idea. 2. Suggest to engage more interviews with different stakeholders to understand the needs from the real world which is important for a product to be accepted by markets. 3. Add one exporter from an investment company to check the product feasibility.
The course is very good
- making all guest lectures mandatory - combining Market analysis course with PD. Using the Biodesign method. Comming up wth own need statement, visit to the hospital, etc.
It would be great if market analysis and product development were combined as each team changed the need statement a lot. Additionally, it would be really valuable to do the observation step of the biodesign process.
- I believe, as this course is based on “medical needs”, that it could be beneficial for the course to have 1 or 2 medical doctors as course assistant or as panelist at least in the presentation part (product development project and tech case). Since I noticed that many of the solutions had very good constructions regarding the Ipp strategy / regulatory affaris / etc) however when focusing in the solution, as an MD i saw some shortcomings or inconsistencies. These , can be noted by any MD (general doctor) or even more from an specialist. But for the purposes of the course i think it will help to have the counseling/ coaching of a medical doctor at least during the presentations. - the ethic workshop can be done at Karolinska and not by zoom. Depending on how it is the approach of an ethic workshop, i believe it can be more useful to have it in person.
Some basic programming skills should be introduced if possible.
I love this course, not only for the course but the lecture :)
I loved this course, it is the best university course I have ever had. One improvement could be in regards to the workshop at KTH. It was a lot of fun to go there and get introduced to the working place and to the 3D printing design website. However, the time was too short for the groups to work on anything and we did not get to 3D print. One thing that could elevate the course could be for each group to make and print a prototype, which could be shown to the class during the presentation.
The only thing to consider would be the time period of the course which is considerably short. The course is quite intense and lot to learn in short period. I would suggest to extend few more weeks so it would not be exhausted and students can enjoy the whole learning process.
I believe and agree with my peers that the Tech Case report (word document) was too much of an extra burden to go along with the classes and the group project. The showcase and the technology brief were very helpful for the ideation process, but not a complex comprehensive report that only distracted us from the main group project
The tech case report was very usefull, however, I feel like it was a bit too much work to do next to our large project report. As mentioned during class, maybe the tech show case would be enough, and to hand in the slides that we made as the assignment.
I think it would be good to have more time for product development because there is a lot to do. It takes a lot of time to even only develop the idea. I enjoyed the brainstorming session with my groups and it would be great if we have more time to do it.
The tech case assignment kind of really felt like something we just had to do without any actual meaning. I think the presentations was interesting but that we had to write a whole assignment about it just felt extra. would have been enough with just presentations and handing in a PP. Would also be good if the assignment was a bit more open to different kind of products, since my group onlt did a software where some mandatory parts wouldn't be applicable in real life.
I think the tech report was a lot of work on top of everything else and would have been just as informative to do the tech case presentations to the class instead of writing up a detailed report too
I suggest there could be a READY FOR A REAL ONE? circle which permit students to share their commercial war experience voluntarily regardless of if it is their personal experience. Illustrating the dark and cruel side of business world, letting students walk out of ivory tower, terminating illusion of unicorn flying in the sky

Which three (3) guest lectures did you find most rewarding?

Which three (3) guest lectures did you find most rewarding?
Christopher heartland
Potter Clarkson IP software lecturer (he also helped in the expert panel) Paraxel for reimbursement (specifically Julio Sosa) Proliance regulatory (German speakers, both really good) In that order
PRV, Pro-liance, workshop at KTH
IP from Potter Clarkson EMA Patents by PRV
Per Arvidsson Christopher Hartland Anna-Karin Andermo
Julio Sosa, Marie Österlund, Christopher Hartland
- IP software team - PotterClarkson - IP Pharma - Hoiberg - Sweden eHealth strategy part - Karina
TLV, Perexel, CE lecture
- Potter Clakrson (afternoon) - key2compliance - Parexel
The 2 Potter Clarkson lectures absolutely stood out and taught me a lot
All lectures give us the opportunity to expand our knowledge in various areas such as IP protecrion, marketing authorisation in pharmaceutical industry and medical devices etc..
- Ip strategy in life sciences from Potter : Chris Cadman - Christopher Hartland - Leonor Enes
Sadly quite missed the names but hope the descriptions help. - The software IP expert - The KTH prototyping instructor was very interesting - The lecture on digital health in Sweden was enormously useful to me.
Ip software, tlv and hoiberg
Overall, the guest lectures were amazing. It was very inspiring to have all these experienced people come and share their expertise. What caught my interest the most was the way most of them engaged with the audience (the class) in terms of language, rhetoric, body-language etc, which was a big contrast compared to the lectures in my bachelor's. The two lectures which had strong public speakers and high audience engagement were the reimbursement/health economics lecture by Parelex and the IP lecture by PotterClarkson's Christopher Hartland. Lastly, the lecture (+ workshop), that gave me the most was PRV's introduction to patents and Espacenet, as that helped me a lot in finding and reading patents.
Potter Clarkson- IP strategy Parexel - Reimbursement
1. Sweden's e-Health Strategy 2025 2. IP strategy in life sciences & IP for software 3. Reimbursement and Health economics in practice
The lectures Chris and Christopher from Potterclarkson were very interesting and helpful, and the lecture about Espacenet with the workshop.
1. Christopher Hartland for Digital IP 2. Pro-liance for medical device software (Dr.Milica Bajagic and Dr.Julia Rohrberg) 3. Hoiberg for Pharma IP
The one delivered by Key2Compliance

In my view, the industry expert panel was valuable for the Product Development Project.

In my view, the industry expert panel was valuable for the Product Development Project.	Number of responses
to a very small extent	0 (0,0%)
to a small extent	2 (7,4%)
to some extent	4 (14,8%)
to a large extent	7 (25,9%)
to a very large extent	14 (51,9%)
Total	27 (100,0%)



	Mean	Standard Deviation	Coefficient of Variation	Min	Lower Quartile	Median	Upper Quartile	Max
In my view, the industry expert panel was valuable for the Product Development Project.	4,2	1,0	23,1 %	2,0	4,0	5,0	5,0	5,0

How can we develop the industry expert panel for 2023?

How can we develop the industry expert panel for 2023?
Provide some brief of our project before consulting. The most useful was undoubtedly Potter Clarkson
More time on expert consultations for each group
Perhaps the industry experts can get a basic synopsis of each group's solution prior to the panel discussion so that the individual time slots can be maximised.
We should have provided them with the summary of our solutions and questions in advance for them to decipher so we do not waste time explaining to them. They can have more time providing us with suggestions.
1. Increase the time for business part or add one more exporter for business 2. Improve the design part 3. Add one exporter from an investment company
I would recommend to share a brief of projects with experts before the panel to read and prepare, extension the duration of the panel, and holding the panel a little earlier to have maximum effect on the students' thought.
Give the panel more time. Design panel was not essential, could maybe be left out.
They should be more familiar with the content beforehand. Time slots were not enough. Expert for Design was not helpful at all, we were only describing what we are trying to do.
give the experts an introduction to the case (PPP or 1-page pdf explaining the Product) before the meeting. having an engineer that can verify the producibility/feasibility of the idea.
/
- the expert panel is strong item of the course. In my group we needed more time with some of them, maybe the time can be expanded and also can be 2 days dedicated to that since it is kind of exhausting for the students explaining the project many times and for the experts listening to all cases.
I was satisfied with it.
Give our report project presentation or draft report first, then the expert panel will know at least what's our project and can help with suggestions or recomendations
The expert panel provided valuable input and suggestions for the project. However, there was not enough time for each respective expert to give their full feedback or for the group to ask relevant questions as half of the time went to explaining the invention. Two improvements have already been mentioned by the class, these are: 1) longer time slots and/or 2) the experts get to look into the inventions before the day of the panel so they already have some insight of what each group is working with.
Maybe to give the experts already some kind of information of the projects that we are working on, so we have more time to discuss with them instead of us presenting our project for half of the time. And a longer lasting expert panel!
I think it would be better to put the expert panel at the middle of finding the solution because then we could have more time to revise according to advice from the expert.
Maybe have them a bit earlier.
Maybe if we had more Time with the experts
20 mins are not enough. 30 mins is ok.

In order to create the best possible Product Development Project solutions, do you have any suggestions for how teams should be put together?

In order to create the best possible Product Development Project solutions, do you have any suggestions for how teams should be put together?
You need to allow people to choose for themselves and explore the field. Teams of 4-5 people ideally.
Teams should be made by the professor. However taking into account that there are always “free riders” and students who do not contribute towards a group work and also have built a reputation for themselves. Randomised groups gives opportunities for us to work with people we may have not worked with before.
I could not give any suggestion for this course but I would like to share my plan to form my team. In my team there should be one person with professional knowledge in life science, one person with sale or marketing experience, at least one person with strong desire to learning new things and one person good at organising and coordinating in the team.
I think the way we have chosen our project was proper.
People should be able to choose. Already implement teams in market analysis.
doing like this year makes sense in my opinion, that people should have their personal goals or preference without intervention from other people, and like this year that everyone being able to change their group based on their personality also complement the grouping system since I can see most of the teams in this year really comfortable in their group and almost everyone can show their best effort (reduce free-rider in groups). In this way, everyone also can maximize their potential and learn a lot
-
as this year, anyone can choose their own group
/
- how it was done this year i think is s good option.
I suggest students should be informed to choose their needs more of their interests/backgrounds rather than on lines of who they are friends with.
I think how the team’s created was good and fair
Due to the extensiveness of the project (in both time and work), it is essential that the groups get along professionally and/or personally. The way in which it was done this year created a bigger focus on choosing an area based on group rather than interest, as there are some individuals in the class that are impossible to work with and communicate with both on a professional and personal level. The main suggestion would be that the class gets to choose their groups, however, then there is the issue with "A-team" and "B-team". If possible, one suggestion is to make the group formation similar to how the pairs for the practical placement were done. They were based on the individual area of interest and took into consideration which individuals in the class one would not be able to work with.
According to background of the group participants if possible (it was useful to have an expert in the group)
I think it worked out great as it did. We were able to pick our own interest topic, and it was very flexible to change the teams up a bit.
I think the team should be same from market analysis until product development since the projects are the same. The teams will have more time to discuss and they don't have to repeat learning the market analysis section.
I think it is good that people can at least partly choose themself since the project is so big and by this time you have already been put in a lot of different teams and know which people do not work. Or that you choose project like this time, but then consider who are put where so that not some people come in a group with only "free riders", but since we changed the groups this time anyway it was fine. Also maybe a bit wierd that one group got to choose from the beginning this time but not everyone, should be the same for everybody at least.
Students should definitely be able to have a say what team they work with, which we did!
Before the allocation of team members, students could tell the lecturer who they don't want to work with in an anonymous way.

The one thing I liked the least about the course was ...

The one thing I liked the least about the course was ...
The fact that it is not longer. Also at some point I got burned out, maybe follow a more paced teaching.
I would like this course to be longer
Some lectures could be replaced with mandatory readings or clubbed with other lectures.
Not having had the time to read the literature prior to starting the course
Blinking was very useful and achieved its goal in the beginning of the course and I am using it to learn English now.
I rather to have more workshops, because I think workshops are more effective than lectures.
The fact that the need were fixed.
the lecturer become a great role model for us, showing hard work, being thoughtful to everyone, accommodate all of our needs and making sure that we all learn our best in the class
Guest lecture about E-health in Sweden
...That the individual reflection was this strongly structured, I would have prefered an open format.
Focusing more on the report requirements versus valuable solutions to actual problems
I found every aspect of the course interesting and useful.
I wish I had one but not quite. If I will stretch to, I’d say perhaps we should use a longer time to do the course.
It was really intense and short in time, it would be better if we can go with longer time. But, in general, I love the course
Almost everything was really good - valuable, insightful, practical and very interesting! Especially our teacher(s) - many thanks to Caroline, you've made this course amazing!
Honestly, there was not something I didn't like about the course, it was one of the best and most interesting courses I have ever had, and I want to thank Caroline for this amazing time! :)
The time that is too short
Tech case report. Also maybe that it was so serious since it is a school project but it was like make it a real product, but at the same time do all mandatory parts as a school project which wouldn't be our product if we were to make it.
Democratic and open-minded. No matter how an idea sounds stupid, everyone still listens to it and give their advice sincerely

super happy with the course, memorable and useful. The best one so far!