

# EDUCATION SURVEY RESULTS

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# Outline

**PART 1** Rationale & methods

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**PART 2** Quick demographic facts

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**PART 3** General results

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**PART 4** In-depth results

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**PART 5** Concluding thoughts

# Rationale behind the survey

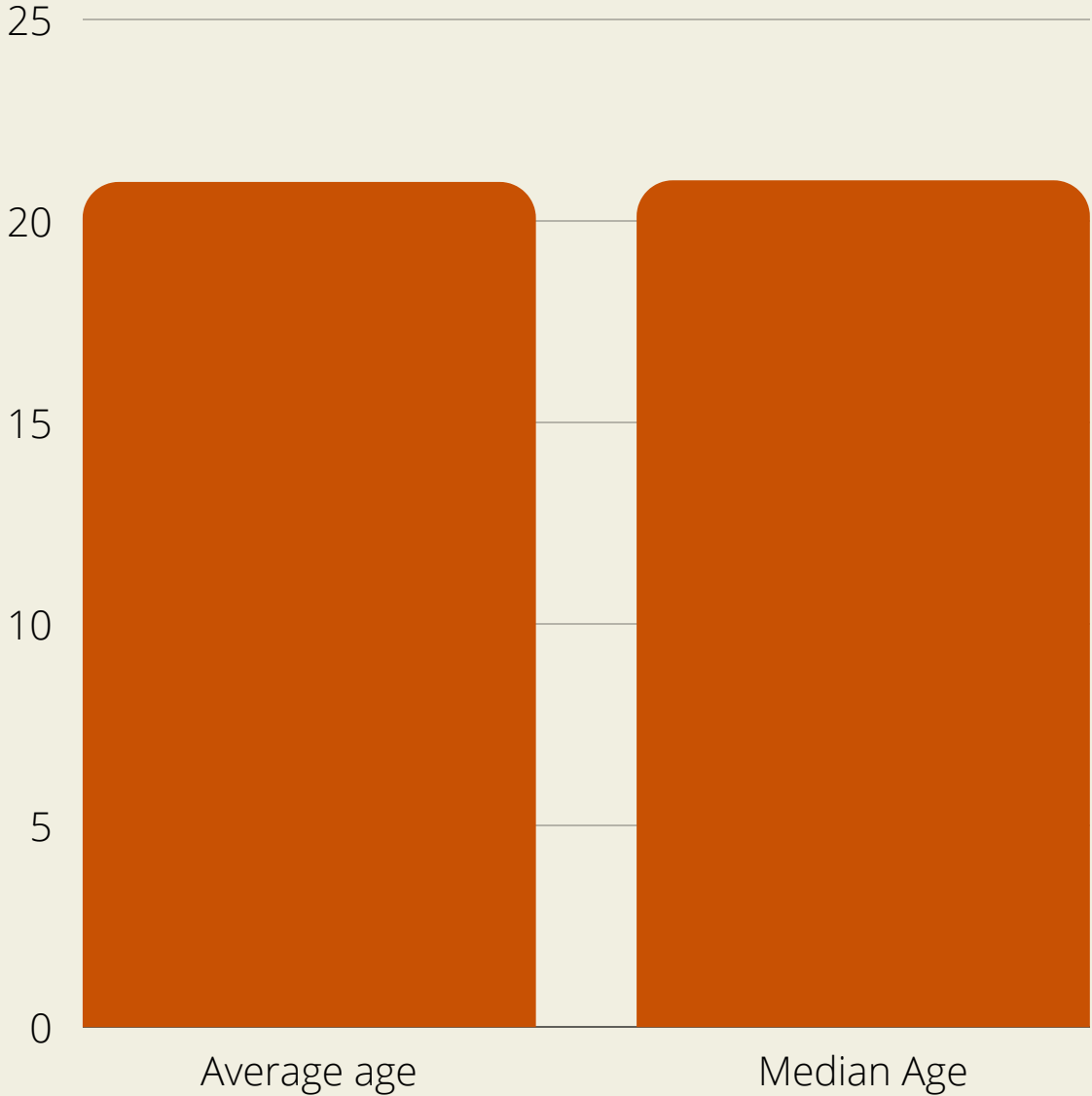
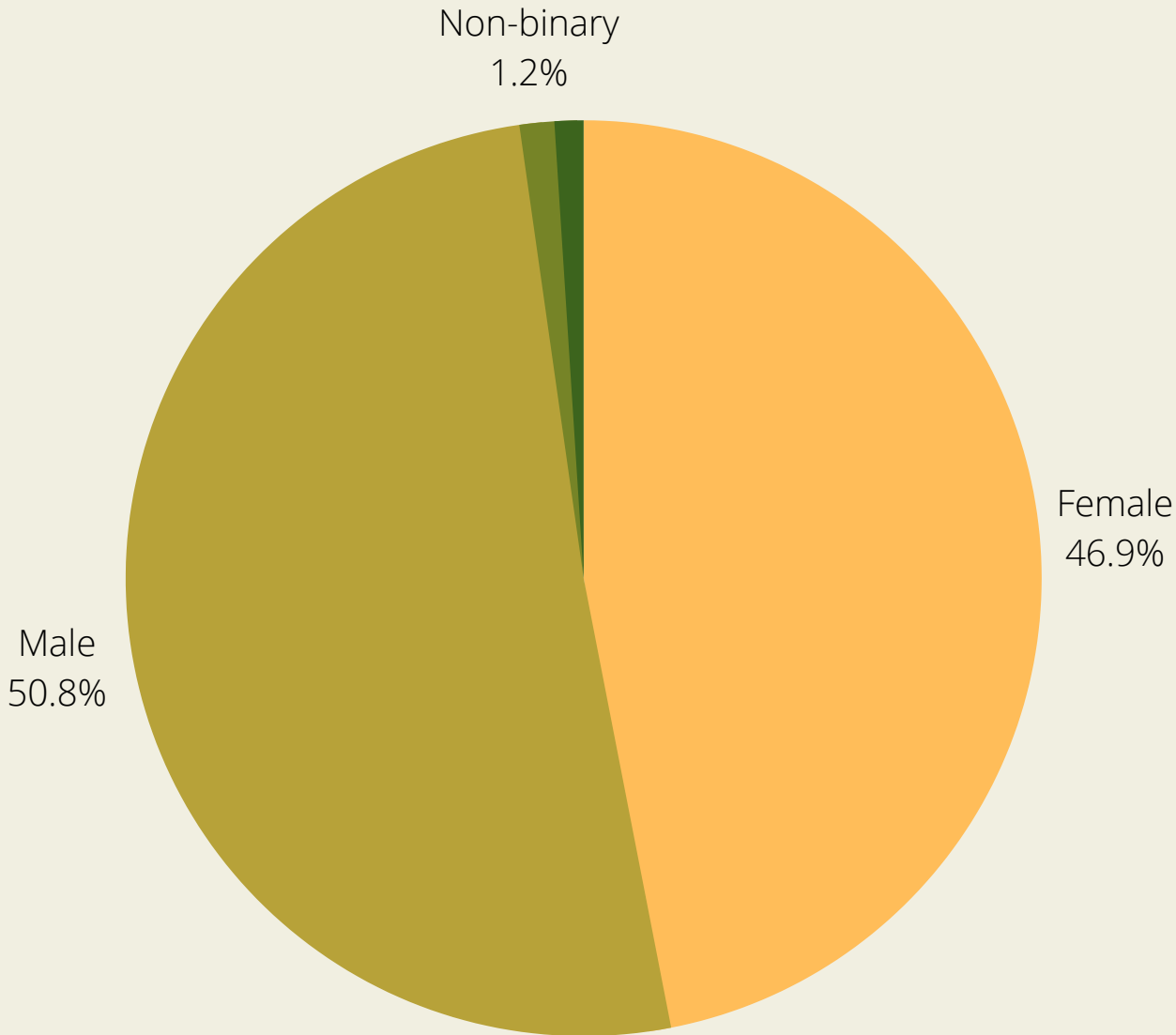
- Sustainability is increasingly more important due to the severity of ongoing climate and ecological crises
- Universities can be driving forces of societal change
- Many other universities have pioneered campus-wide sustainability initiatives
- TU/e ranks poorly both in terms of overall sustainability, as well as in sustainability in education
- The Bachelor College redesign is a great moment to integrate sustainability into bachelor education in a more structured, synchronized, and strategic manner
- The survey gives insight into students' opinion on whether or not sustainability should be more prominent within the TU/e's curriculum, and if yes, how

# Methodology

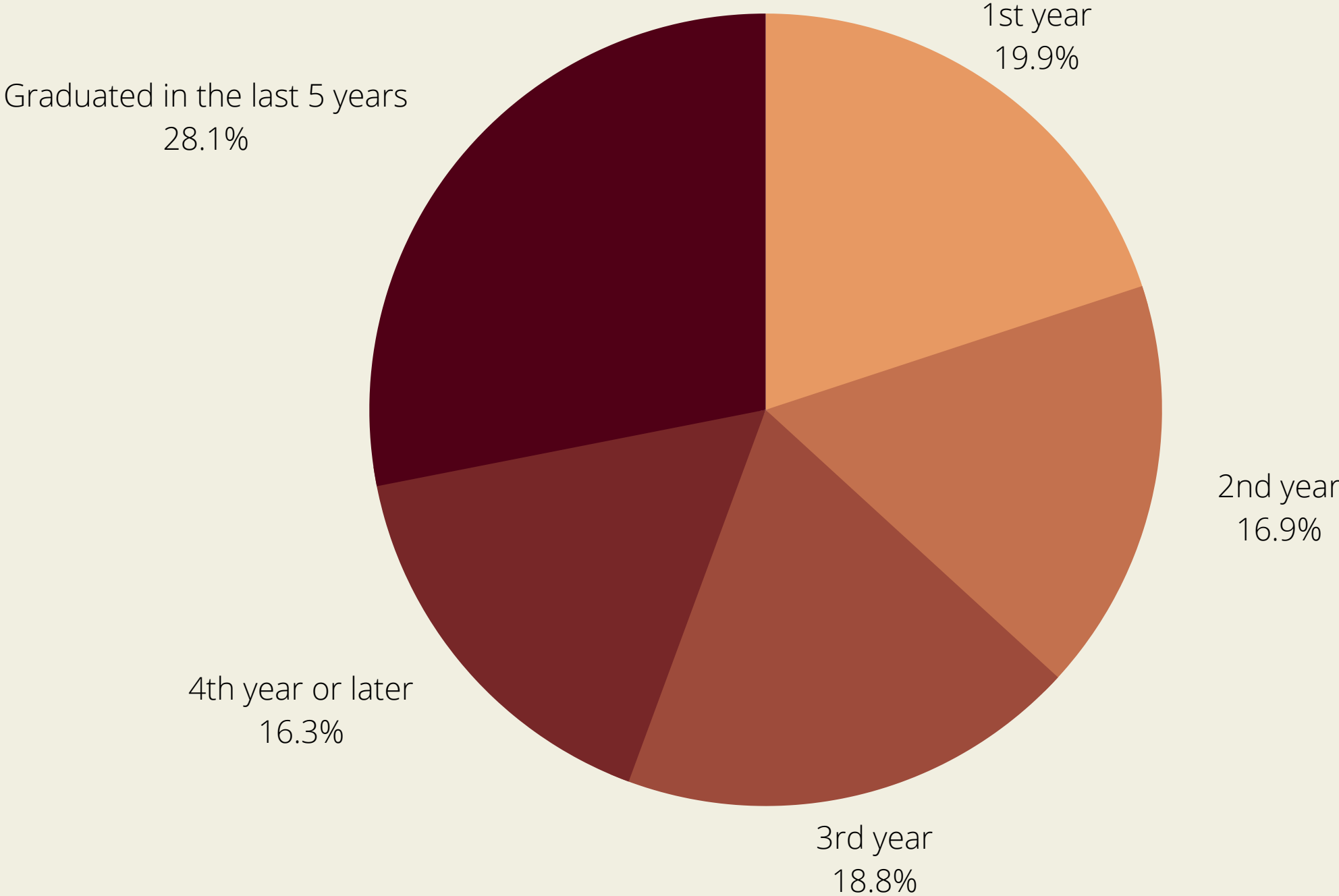
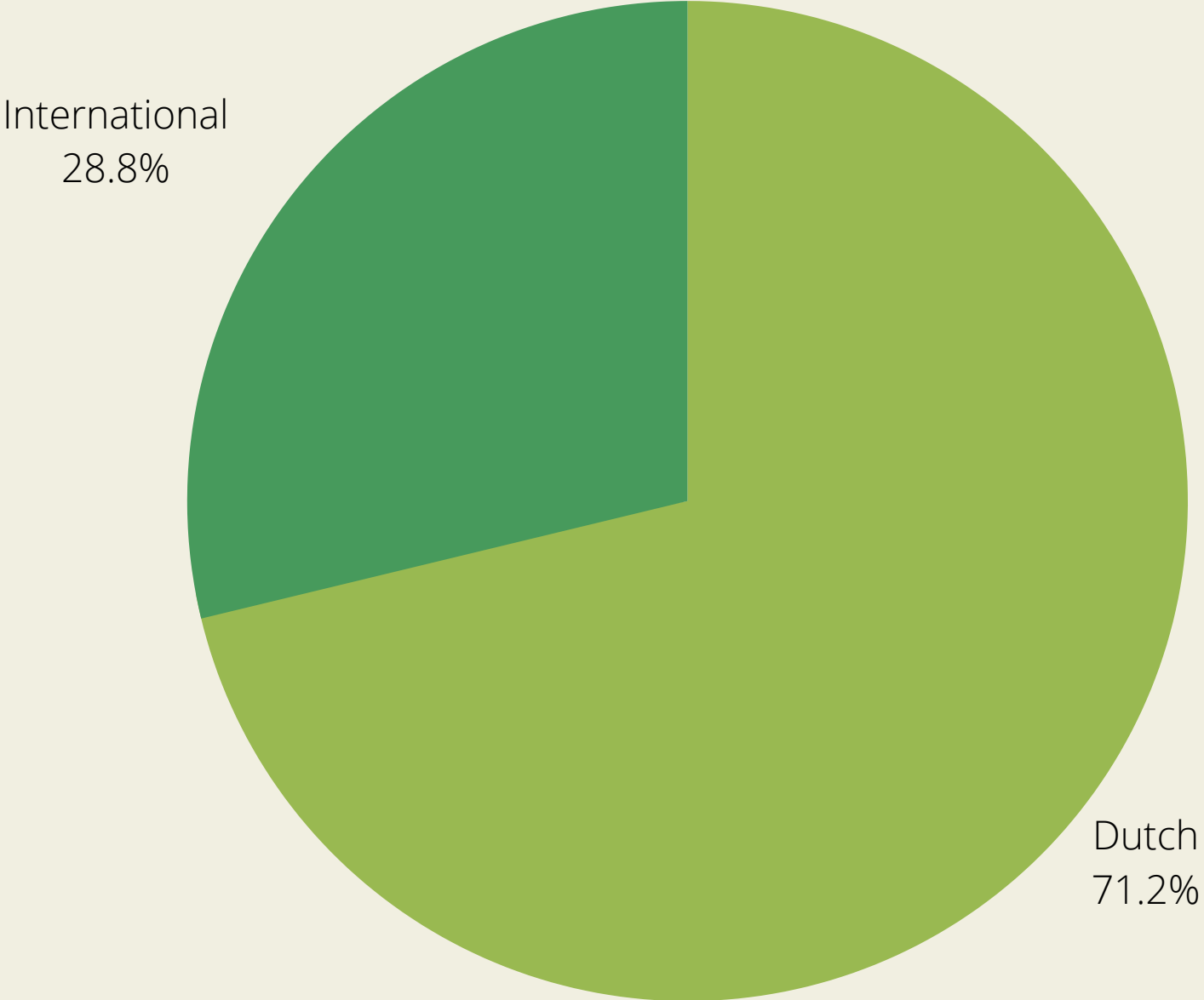
- The content (the questions and statements) were created in collaboration with Soem Zeijlmans from Goodrise, who has conducted a similar survey at Leiden University in March, 2021
- Students were able to participate by filling out the survey on [gogreenoffice.nl/survey](https://gogreenoffice.nl/survey)
- The questionnaire took approximately 5-10 minutes
- To avoid selection bias as much as possible, the survey was promoted as "Education Survey by the GO Green Office"
- The survey was available for two weeks
- The survey was promoted
  - Online
    - On the GO Green Office's platforms
    - By study and student associations
    - By the University Council
    - On TU/e screens
    - By student teams
    - In WhatsApp chats
  - Physically
    - By approaching students during lunch breaks in MetaForum
    - Students were rewarded for filling in the survey by having a chance to win a Hubble gift card
- Analysis of the data was conducted using Excel

# Part 2: Quick facts about respondents

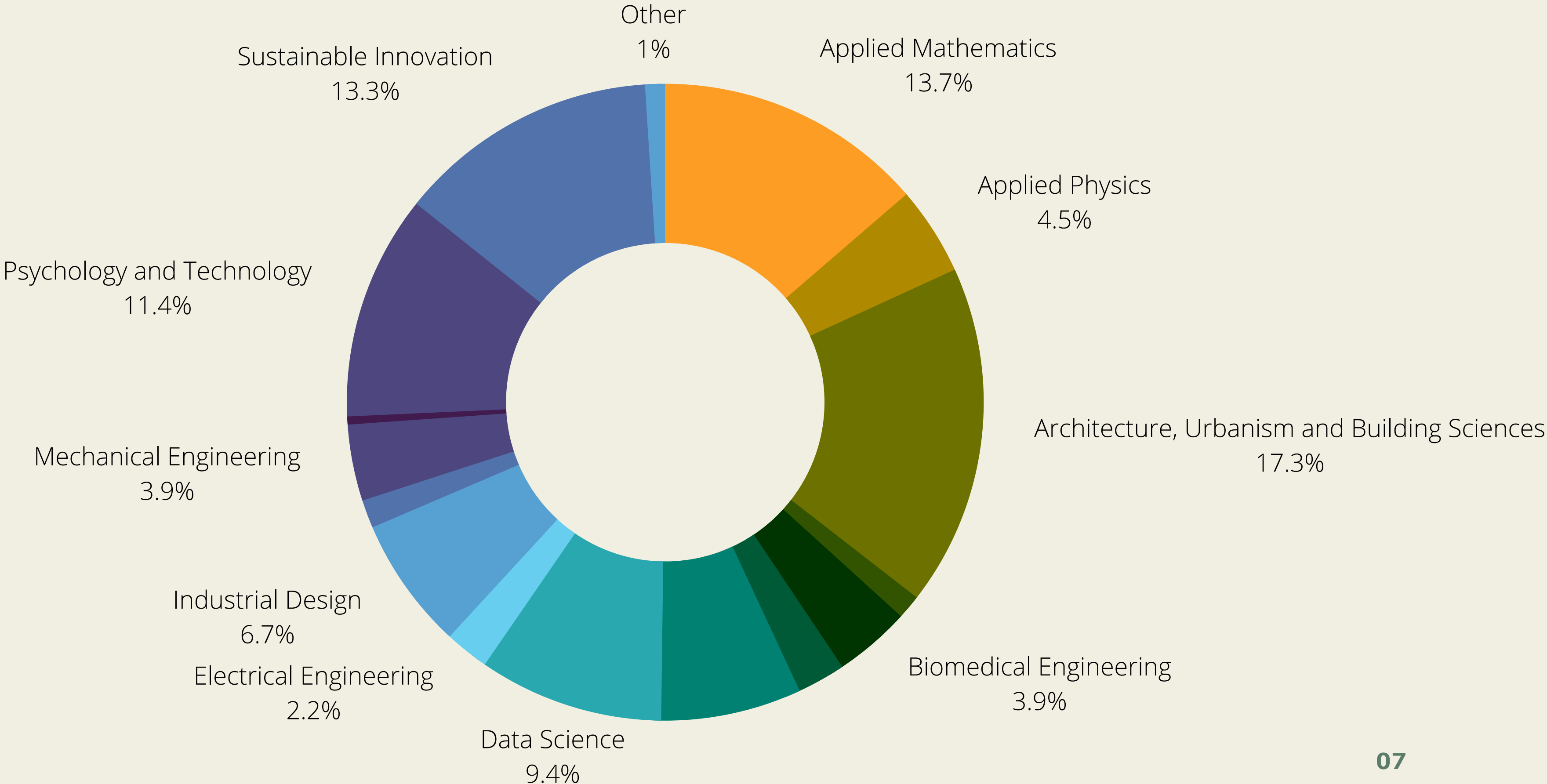
490 entries overall



# Quick facts continued



# Quick facts continued



# SDG's

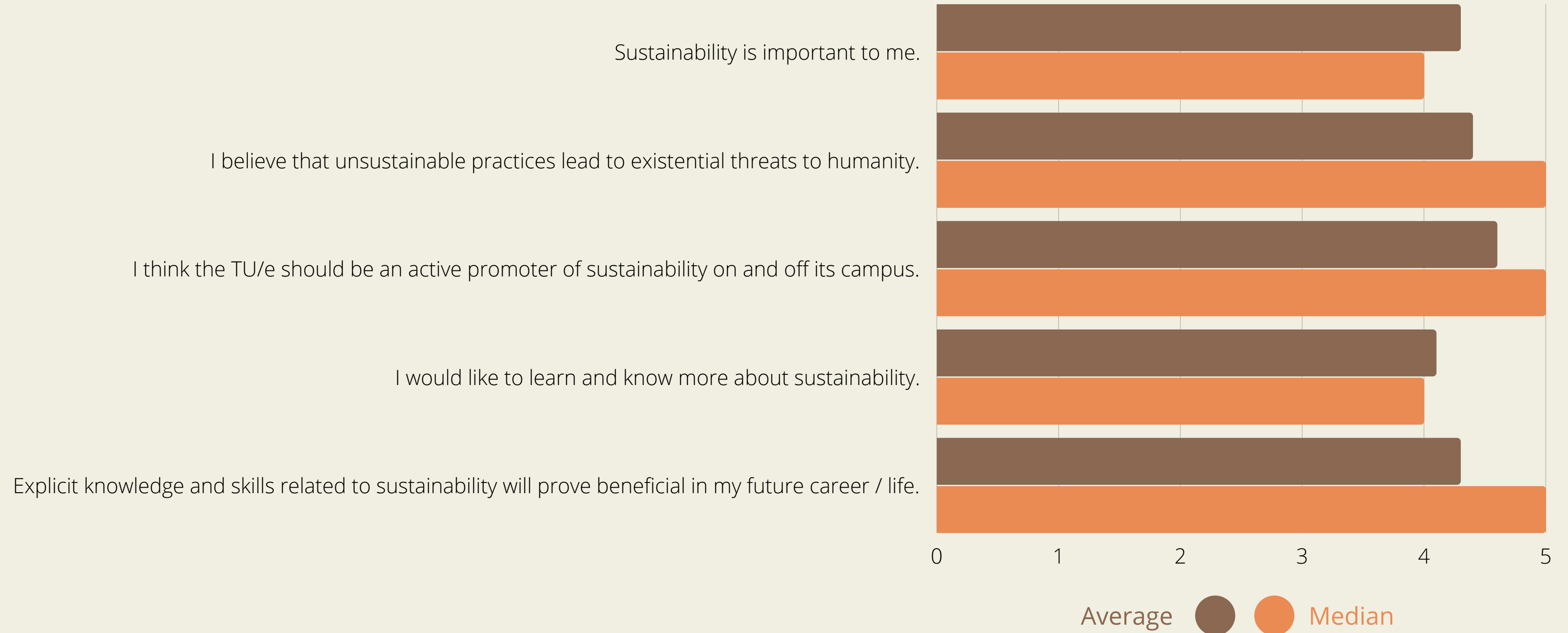
What aspects of sustainability (in this case, categorized by the SDG's) are most important to students? The size of the rectangles corresponds to the frequency of mentions by students





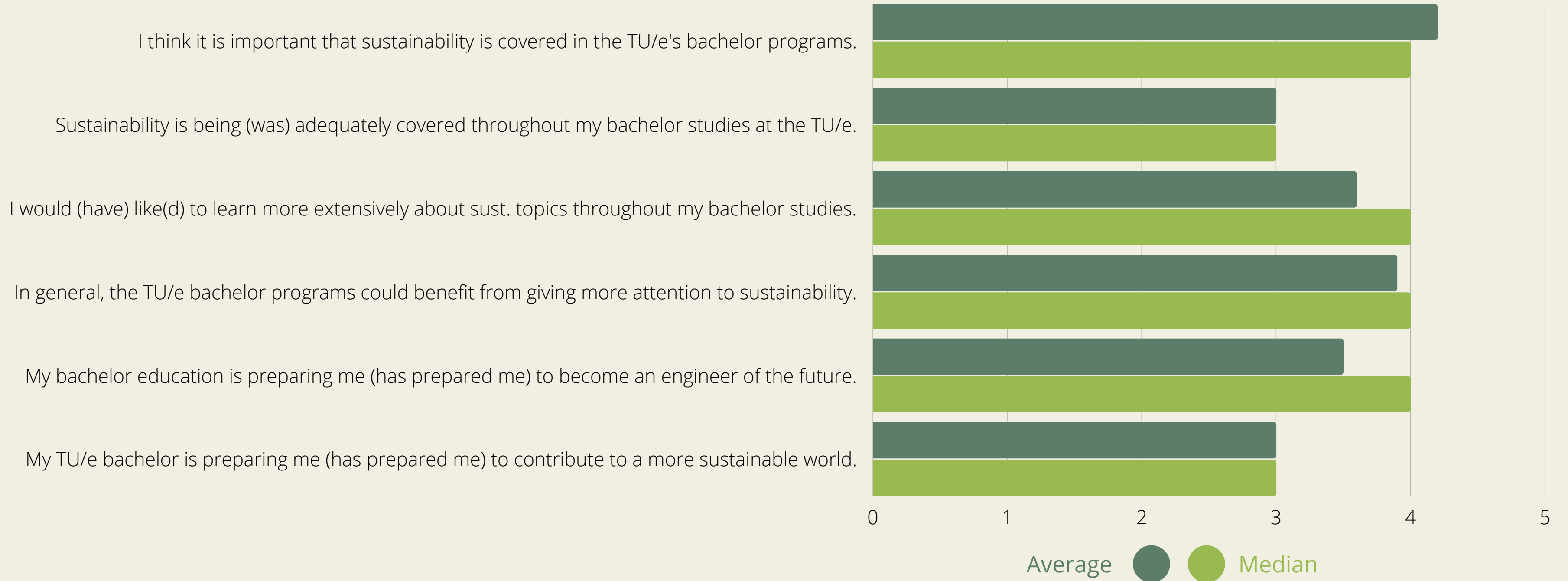
# Part 3: Results

per generic sustainability statements



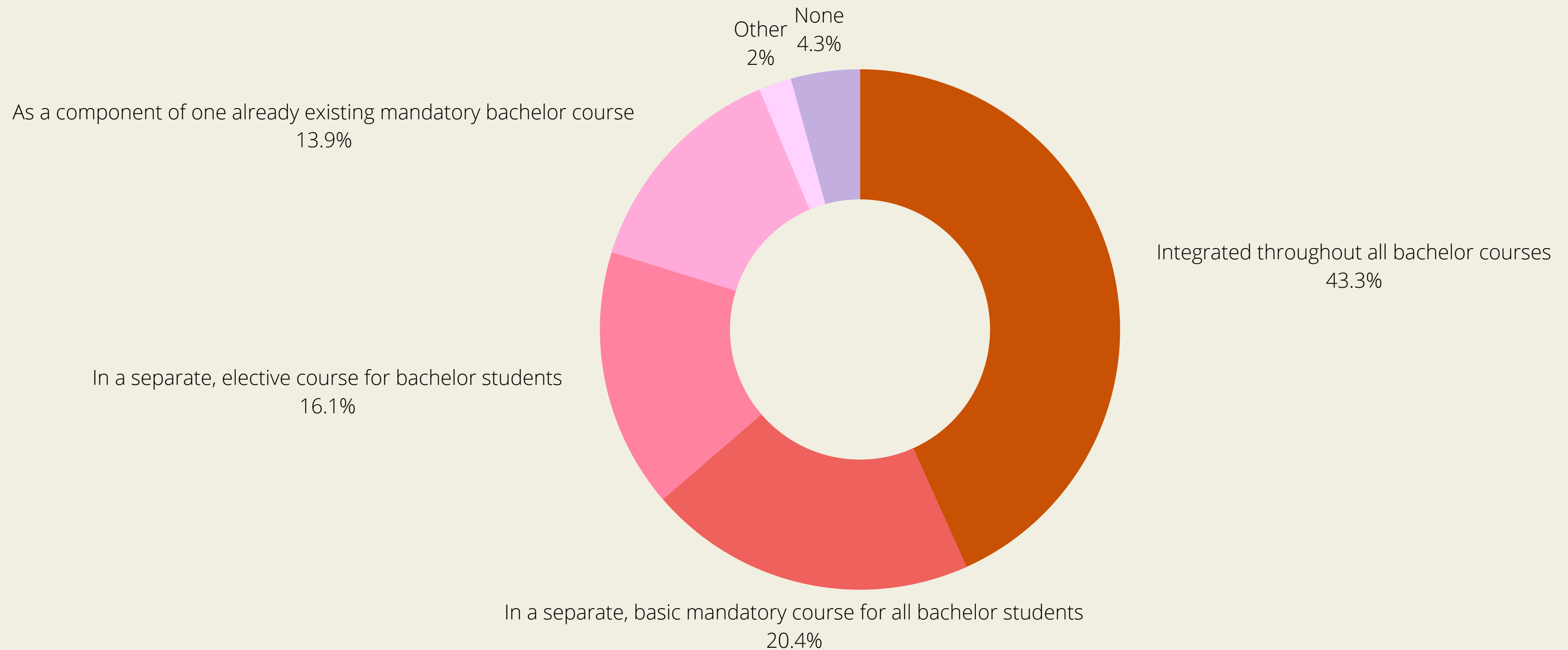
# Results #2

per TU/e bachelor education focused statements



# Results continued

## Opinions on integration into bachelor curriculum



# Ideas from respondents for sustainability integration into existing courses

## USE BASIC

**Mentioned 34 times**

"The USE basic course for sure."

"In a USE trajectory (maybe it can be replaced with the USE basic course for example)."

"Anything related to responsible Engineering, e.g., USE courses"

"Integrated in the first USE course."

"I think USE should cover this, sustainability is very much a sociotechnical problem and as such fits here perfectly."

"Maybe in the USE advanced courses. However, these are not mandatory."

"The USE ethics course. Or a new, separate course."

## ENGINEERING DESIGN

**Mentioned 22 times**

"The course of 4WBB0 Engineering Design might be a good course where the topic of sustainability can be covered. So we can have the design goal of sustainability too and add Sustainability as part of a CBL module of the course."

"Engineering design."

"Engineering design."

"Engineering design."

"Engineering design."

"Engineering design."

## MANDATORY, BACHELOR-DEPENDENT COURSE

**Mentioned 13 times**

"... dislike of university-wide courses (basic courses, USE, Engineering Design), which would be a shame for such an important topic. Students will be much more interested if they learn about the importance and possibilities of sustainability in their specific field."

"...interesting to have a core (mandatory) class which talks about sustainability in general which could be useful to every TU/e student, such as sustainability in a society (more social action) or general engineering sustainability."

## CBL

**Mentioned 3 times**

"I feel like sustainability would greatly benefit from being included in a CBL project."

"It would be great to connect your field of expertise with sustainability in this course and even make the connection with governments and/or companies. So you actually can bring your knowledge into practice (CBL)."

# Part 4: In-depth results

## Faculty specific information

1. "Sustainability is important to me"
    - a. Highest: SI (4.8), AU&BS (4.5), EE (4.5)
    - b. Lowest: IE (3.6) & BE (3.8)
  2. "I believe that unsustainable practices lead to existential threats to humanity"
    - a. Highest: SI (4.8), AU&BS (4.7)
    - b. Lowest: IE (4.0) & AT (4.2)
  3. "I think that explicit knowledge and skills related to sustainability will prove beneficial in my future career/life."
    - a. Highest: Other (4.8) & SI (4.7)
    - b. Lowest: BE (3.7) & ME (3.8)
  4. I think it is important that sustainability is covered in the TU/e's bachelor programs.
    - a. Highest: SI (4.7) & ID + AU&BS + Other (4.6)
    - b. Lowest: DS (3.6) + CS&E (3.7)
  5. I think that sustainability is being (was) adequately covered throughout my bachelor studies at the TU/e.
    - a. Highest: SI (4.2) & AT + AU&BS (3.8)
    - b. Lowest: DS (2.7) & CS & E + ID (2.9)
  6. I would (have) like(d) to learn more extensively about sustainability topics throughout my bachelor studies.
    - a. Highest: ID (4.0) & AU&BS (3.9) & AM (3.8)
    - b. Lowest: BE + IE (3.1)
  7. I think that my bachelor education at the TU/e is preparing me (has prepared me) to contribute to a more sustainable world.
    - a. Highest: SI (4.2) & AU&BS (3.8)
    - b. Lowest: DS (2.7) & CS & E (2.9)
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# Miscellaneous, further input from respondents

"It is a well-researched fact that investing in sustainable solutions is cheaper than not doing anything at this point. The TU/e can and should play a key role in finding these solutions. If the TU/e wants their alumni to be prepared for finding solutions, they should learn about these problems and thus bachelor students should get educated

"Courses need to be updated" about the problems."

"I think the current level is adequate a lot of courses already have some form of sustainability integrated"

"In my idea, the TU/e does not really care about it, at least not that is a general known."

"Some courses definitely need to change and are very bad for sustainability. I think the course of Engineering Design needs to change because at the moment TU/e has a new movement to be zero waste, the 'let's go zero' movement, and yet it is far from reaching it. The course of Engineering design gives the team 70 euros for their product, and there are about 250-300 groups each year. Most of the prototypes get thrown away eventually, resulting in 21,000 euros worth of e-waste, very disappointing. Perhaps it can be more suited with a case study that has sustainability implications."

"I think a sustainability course should differ heavily from major to major. Also maybe replace some USE stuff with it, since it fits in the theme and no one likes USE."

"I would really urge the EB to recognize the problem that we are facing regarding sustainability. If you want to educate engineers of the future, their education must also entail sustainability."

"Please do not make it like USE..."

"I feel like right now it really depends on which bachelor someone is following, how much sustainability is mentioned"

"There is a lack of sustainability education at TU/e"

"I chose the bachelor course physics of new energy, which contributed to my understanding of renewable energy sources. It will be a challenge to implement more topics in an already crammed bachelor but I think it is rather important"

"Its nice you're doing this because I don't know much and this is a bit of a problem"

"For my study you really need to choose for sustainability courses however I would like to see them as something that is mandatory within our bachelor since it is important and relevant."

"I have the feeling some courses focus fully on sustainability which is nice, but if a students 'avoids' those courses then it is possible to finish the studies at TU/e without being educated on sustainability which does not encompass 'the engineer of the future' in my opinion."

"In the case that sustainability is implemented in elective courses, I think it will be repetitive if you take more than one and some will not take any, so it's kinda useless and annoying in that scenario."



# Miscellaneous, further input from respondents #2

"I think the TU/e is doing pretty good."

"As an Applied Physicist I worry about the conversations I have with other fellow TU/e graduates regarding climate action. It concerns me that these people are the future of the Netherlands."

"I'd not like for sustainability to become a great important aspect that the TU/e focuses on, as it is more so the task of your future employers. Totally depends on where you end up working in which way you have to account for sustainability."

"In chemical engineering, sustainability was a large part of the CPT master, in assignments in courses. I am sure that will happen in the bachelor as well if you do more project based courses and give teachers some freedom."

"Whereas I feel it is heavily incorporated in a number of courses or aspects of studies, there are not, as to my knowledge, any specific courses that teach about sustainability specifically"

"I think that a lot of my courses already cover sustainability, however it is posed as more of a challenge than a necessity. For example, in the peristaltic pump DBL we had to use cradle 2 cradle in our design but we did not need to explain why we used this and we also did not get much freedom in trying to achieve it as well as possible".

"The commotion regarding the introduction of sustainability courses in education at Radboud is not fair. The arguments used here should not be arguments for TU/e to not make this decision. When TU/e introduced ethics (through USE) in the education program, that was also not something students were enthusiastic about. It was decided because the TU/e felt it was important. They can do that now with sustainability."

"The only part of sustainability I can remember was in a USE package I did not choose, which I partly regret. Only partly, because the other options were interesting (at that time) too."

"I'm glad it's being considered".

"I really think sustainability should be covered in each study, because now there is some information about companies "going green" but no real substance or way of understanding what they're actually doing."

"I think the USE-Basic course and the USE-Learning lines already offer a good amount of knowledge about sustainability. In projects I think that things as life cycle assessment (LCA) should be more highlighted, this could also be done in courses as engineering design to cover all the bachelor programs."

"It is important to frame sustainability in the context of an individual's field. This ensures the applicability and the relatability of the issue at hand."

"If there were to be a course about sustainability it should not only be a left-winged view on the topic. Include companies and how things were and why. It will give a better overview why things are a certain way without immediately portraying them as bad. Or you will lose interest in the sense that we keep hearing that kind of news on tv and in socials without background knowledge."

"To make it part of all courses emphasizes that it is normal to always take sustainability into account."

# Miscellaneous, further input from respondents #3

"Keep it sensible, overloading the curriculum or making it a central point won't change the world. But creating a broader understanding of what is the current situation and how we can transition (within steps) to a greener more inclusive industry will."

"Sustainability is very broad and can (and should) therefore be easily integrated into all bachelor courses it can be applied to (almost) every subject that you can think of and it therefore is very important that it is integrated into all bachelor courses."

"If it becomes a drag for students, something they have to learn while it feels boring or irrelevant, it might even generate adverse effects. Therefore think we'll about a relevant and interesting implementation."

"Sustainability is not just something that affects the different engineering fields of students, but their everyday life as well, including the energy crisis right now. Therefore, sustainability should be taken a bit broader than e.g. putting a solar panel on a car, but also where the energy for making that car came from, or even broader whether that car was needed in the first place (compact cities circumvent the need for car travel). I'm not sure if we should be doing one dedicated course on sustainability, because the other courses are so fast-paced that I usually need to forget everything I learned to keep up with new courses. So 1 course would force theory to quickly into our heads, while integration might steadily teach students a mindset. But that is my opinion on it."

"Courses outside the Innovation Sciences faculty could incorporate more information about sustainability."

"I think there is a lot information given by the tue, but i feel like these courses are only electives. I would love to see more about sustainability throughout the year and also in all mandatory courses."

"I think a sustainability focus is especially needed in the Mechanical Engineering department!"

"Make another mandatory course like Engineering design, where a small team of students pick a topic of sustainability and design something for it that helps the topic."

"I think the TU/e is dramatically behind on this topic, als compared to other universities and higher education institutions"

"I think in my studies they do not cover it with theories and courses but professors and everyone is very busy with the problem. It would be nice to also have like one mandatory course on sustainability"

"I did one course for USE which was very helpful yet it seemed to me like just a first step but it was the only course."



# General Observations

- TU/e students approach the concept of 'sustainability' as an environmental term and prioritize ecology-related SDG's over others
- While opinions vary, most students care about sustainability and wish to see it further incorporated in their bachelor programs
- Most students (43.3%) believe sustainability should be integrated throughout all bachelor courses
  - Still, many of them want it as a separate mandatory course (20.4%)
- There are small differences between males and females, Dutch and non-Dutch students, and students from different faculties
- Students from more technical bachelors find it less important to include sustainability in their curricula than students from bachelors with more emphasis on social dimension
- Many hold very strong opinions and are advocating for the inclusion of sustainability in bachelor curricula

# Conclusions

- Due to the discrepancy between Dutch and international students, if the TU/e wishes to attract more international students, it is imperative to increase sustainability in education (*the 21/22 Dutch-International bachelor ratio at the TU/e is 79% and 21%, respectively*)
- Similarly, if the TU/e wishes to attract more female students, it is imperative to increase sustainability in education (*the 21/22 female-male bachelor ratio at the TU/e is highly unequal with 29% and 71%, respectively*)
- "Demand" for sustainability topics in education is higher amongst students with more "socially-focused" bachelors, even though they are the ones who are exposed to these issues throughout their studies
  - This suggests that students with more technical backgrounds don't learn AND wish to learn less about these issues
  - This seems to contradict the TU/e's mission to educate engineers of the future, who can AND wish to address major challenges, such as "the sustainability challenge" explained in the TU/e's 2030 Strategy document
- Overall, the survey suggests that TU/e students believe that the TU/e should adjust its bachelor curricula to the needs of the 21st century

With any questions please  
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