

# Planetary Health Report Card (Pharmacy):

## Hacettepe University Faculty of Pharmacy



#### 2024-2025 Contributing Team:

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### **Summary of Findings**

С

C+

**B**+

B-

### **Overall Grade**

#### Curriculum

- Planetary health holds a significant place in modern healthcare and stands out as a topic that should be more thoroughly integrated into our curriculum. At the Faculty of Pharmacy, Hacettepe University, topics related to planetary health are briefly covered in the core curriculum, and they are further supported and deepened through elective courses and specific seminars on related issues. However, the environmental impacts of equivalent therapies and the carbon footprint of the pharmaceutical industry should be more extensively addressed. Additionally, greater emphasis on sustainability steps is important.
- **Recommendations:** Although planetary health topics are explained in-depth by our instructors in class, they are not included in lecture notes or categorized as part of the exam content, leading to a lack of attention from students. To overcome this issue, it is recommended that more space be given to planetary health topics in lecture notes and that these subjects be briefly included in exams. This approach would help reinforce students' knowledge in this field more effectively. Additionally, sustainability and environmental topics should be more closely associated with health and the healthcare industry in educational courses.

### **Interdisciplinary Research**

- Hacettepe University hosts faculty members in the Faculty of Pharmacy whose primary research focuses include planetary health studies and the sustainability of healthcare services. "The Hacettepe University Sustainable Campuses Coordination Office", operating within the university, provides a comprehensive website that consolidates various campus resources to support planetary health research. Additionally, since 2023, the Sustainability Seminars have been organized, addressing planetary health and sustainability issues from an interdisciplinary perspective. These initiatives strengthen the university's scientific contributions to sustainable healthcare services and environmental responsibility.
- **Recommendations:** Our institution has not established a systematic process or undertaken any initiatives to ensure that communities disproportionately affected by climate change and environmental injustice contribute to our research agenda. Additionally, our institution is not a member of any international planetary health or environmental sustainability/justice (ESH/ESV) organization. In this context, joining international organizations dedicated to planetary health, incorporating these organizations into our conferences, and actively participating in academic events organized by such institutions would enhance our institution's academic engagement and scientific contributions in the field of planetary health.

### **Community Outreach and Advocacy**

• Community outreach and advocacy are essential for integrating planetary health into education and practice. Hacettepe University Faculty of Pharmacy collaborates with organizations like EPSA and Esmiyor to promote sustainability. Events such as the Pharmaceutical Development Days highlight environmental health topics. While there are no dedicated community-facing courses planetary health is covered in some classes and research initiatives. A post-graduate certificate program on sustainable development is also available. Additionally Hacettepe University Hospitals provide accessible educational materials on climate change **and** health impacts. • **Recommendations:** Strengthening partnerships and expanding sustainability education will improve planetary health advocacy within the institution. Our institution needs to increase accessibility to sustainability-related research and resources for students and faculty. Establishing new collaborations with environmental organizations to strengthen advocacy efforts can help students understand the importance of planetary health.

### Support for Student-Led Initiatives

Within our faculty, student groups carry out various academic, social, and environmental activities entirely on their own initiative, without receiving any official support from the faculty. Students develop projects independently, organize their events, secure their own resources, and engage in sustainability-focused initiatives to raise environmental and social awareness. In this context, sustainability efforts rely entirely on students' voluntary participation, their ability to generate creative solutions, and their spirit of collaboration. Despite the absence of direct contributions from the faculty administration, students take significant steps toward developing long-term and impactful projects through the communities they establish.

#### **Campus Sustainability**

There are offices and projects within our faculty and university that support sustainability. While recycling is effectively maintained, sustainability-focused guidelines for certain actions are lacking. Additionally, there is insufficient legislation regarding carbon footprint and fossil fuel usage.

D

D

### **Statement of Purpose**

Planetary health is human health.

The Planetary Health Alliance describes planetary health as "a solutions-oriented, transdisciplinary field and social movement focused on analysing and addressing the impacts of human disruptions to Earth's natural systems on human health and all life on Earth." This definition is intentionally broad, intended to encompass the multitude of ways that the environment can affect health, including water scarcity, changing food systems, urbanisation, biodiversity shifts, natural disasters, climate change, changing land use and land cover, global pollution, and changing biogeochemical flows. The health of humanity is dependent on our environment, and our environment is changing rapidly and in disastrous ways. Although the World Health Organization has called climate change "the greatest threat to global health in the 21st century," many medical school's institutional priorities do not reflect the urgency of this danger to human health.

As future health professionals, we must be prepared to address the impacts of human-caused environmental changes on our patients' health. This preparation is in the hands of the institutions providing our medical training. It is imperative that we hold our institutions accountable for educating medical students about the health impacts of climate change and other anthropogenic environmental changes, generating research to better understand health impacts and solutions, supporting related student initiatives, embracing sustainable practices as much as possible, and engaging with surrounding communities that are most affected by environmental threats. Because climate change and environmental threats disproportionately affect vulnerable populations (for example, communities of colour, older adults sensitive to health threats, and individuals in low-resource settings), these issues are inherently ones of equity and justice.

With the purpose of increasing planetary health awareness and accountability among health professional schools, we have created a Planetary Health Report Card that students internationally can use to grade and compare their institutions on an annual basis. This student-driven initiative aims to compare health professional schools nationally and internationally on the basis of discrete metrics in five main category areas: 1) planetary health curriculum, 2) interdisciplinary research in health and environment, 3) university support for student planetary health initiatives, and 4) community outreach centred on environmental health impacts 5) medical school campus sustainability.

### **Definitions & Other Considerations**

#### **Definitions:**

- Planetary Health: is described by the Planetary Health Alliance as "the health of human civilisation and the state of the natural systems on which it depends." For example, topics such as climate change, declining biodiversity, shortages of arable land and freshwater, and pollution would all fall under the realm of planetary health. Both planetary health and traditional 'environmental health' examine the relationship between human health and the external environment, including extreme temperatures, chemicals, vector-borne diseases, etc. Planetary health explicitly concerns itself with the potential health harms associated with human-caused perturbations of natural systems. Therefore, the human health focus of planetary health makes the field well-adapted for the context of medical school education. Throughout this report card, we use the term planetary health to refer to this broad swath of topics, but resources do not need to explicitly include the term "planetary health" to satisfy the metric.
- Sustainable Healthcare: As defined by the Academy of Royal Colleges, sustainable healthcare involves ensuring the ability to provide good quality care for future generations by balancing the economic, environmental, and social constraints and demands within health care settings. A sustainable healthcare system maintains population health, reduces disease burden and minimises use of healthcare services.
- Education for Sustainable Healthcare (ESH): is defined as the process of equipping current and future health professionals with the knowledge, attitudes, skills and capacity to provide environmentally sustainable services through health professional education, thus working to decrease the enormous environmental impact of the healthcare industry. Planetary Health Education is an integral part of this education rather than an end in itself. This is because knowledge on Planetary Health is required to be able to fully understand the necessity of sustainable healthcare as well as being part of the broader knowledge needed to fully protect and promote health. In summary, ESH is covered by the three Priority Learning Outcomes of the first learning objective and is a fundamental requirement to achieve learning outcomes 2 and 3:
  - 1. Describe how the environment and human health interact at different levels.
  - 2. Demonstrate the knowledge and skills needed to improve the environmental sustainability of health systems.
  - 3. Discuss how the duty of a doctor to protect and promote health is shaped by the dependence of human health on the local and global environment.
- Pharmacy Shool/Department vs. Institution: When "Pharmacy school" is specified in the report card, this only refers to curriculum and resources offered by the School/department of pharmacy and does not include offerings from other parts of the university (e.g. undergraduate departments (USA), other related departments (e.g. Public Health, Population Health departments). In contrast, when "institution" is specified in the report card, we are referring to

the university more broadly including all of its campuses. Any resource reasonably accessible by pharmacy students, no matter where in the institution the resource comes from or if it is specifically targeted for medical students, can meet this metric.

- Environmental history (Metric #19 in Curriculum Section): This is a series of questions students are taught to ask during medical encounters that elicits patients' exposures and environmental risk factors. Historically, this has included consideration of exposures like pesticides, asbestos, and lead, though in the modern era shaped by climate change, it can be expanded to include things like wildfire smoke exposure, air pollution and mould after flooding. Key components include place of residence over the lifecourse, occupational history, food and water sources (e.g. meat from industrial feeding operations, regular fishing in contaminated water, access to clean drinking water), and exposure to air pollution. Please be as specific as possible when providing evidence for this metric.
- **Elective:** The word "elective" refers to an optional course or lecture series that a medical student can opt to take part in but is not a requirement in the core curriculum. Generally, these elective courses take place in the preclinical curriculum but vary by school.
- **Core Curriculum:** This refers to taught material that is develoered to the entire cohort of students in one year.
- **Clerkship** / **Outreach:** This is a term used in the USA to refer to placements that medical students go on e.g. Pediatrics, General medicine, Psychiatry. In the UK these are referred to as rotations, outreach or placements. This is a relatively short (approximately 4-8 weeks) period of study and patient-centred clinical experience that takes place as part of the undergraduate programme.
- Clinical rotation: This is a term used to refer to placements that students go on (e.g., ophthalmology, surgery, cardiology).
- **Physiotherapy vs Physical Therapy:** For the purposes of this report card these terms are considered interchangeable. However, physiotherapy will be used primarily.
- **Community organisations:** For most institutions, there are existing groups that are not directly affiliated with the university and exist as a product of what the community the institution exists in cares about or needs. These specific community organisations relevant to this report include those that are focused around some aspect of climate and health preservation. These community organisations can include but are not limited to local mutual aid initiatives, underserved-resource distribution groups, clean-up and nature conservation groups, community gardeners, and other environmental-related organisations. If your institution does not have access to local volunteerships with community groups, please report any community organisations your institution or school has collaborated with.
- Climate justice: The idea that certain population groups and geographical locations which are disproportionately more impacted by climate change are already economically and socially disadvantaged. This double vulnerability sits alongside pre-existing social justice concerns and should therefore shift policy and practice to mitigate the inequitable effects of the climate crisis.

- **Extractivisim:** The removal of natural resources typically in large quantities. Within anthropology this term is often used in the context of colonialism to refer to the historic seizing of natural resources, a practice which has developed business models tied to ecological degradation and loss of biodiversity.
- **Global South:** Nations that often have less economic and industrial development and are typically in the southern hemisphere. These nations have been found to be disproportionately impacted by the climate crisis.
- Low socioeconomic status (SES): An individual or geographical area that across a variety of socioeconomic factors (e.g., income, education, race/ethnicity) is considered vulnerable. This vulnerability has been correlated to more adverse health outcomes often as a consequence of encountering more barriers in accessing and receiving healthcare.
- Low and Middle-Income Countries (LMIC): Countries that have lower degrees of economic affluence.
- Anthropogenic: Created through human activity
- **Marginalized communities:** Groups excluded from mainstream economic, educational, social, and/or cultural experiences due to race, gender identity, sexual orientation, age, physical ability, language, and/or immigration status (Sevelius et al., 2020).

#### **Other considerations:**

• If there are more than one "tracks" at your institution with two different curricula (for example, Harvard Medical School has a Pathways and HST curriculum track), you can choose to fill out a report card for each track, or fill out just one report card and average the scores received by each track in cases where the scores are different (see the 2021 Harvard or Oxford report cards as examples). Where possible please indicate the proportion of students that are on each track.

Completed in 2022 a <u>Literature Review by Metric</u> is available for the 2022 medicine report card metrics. We are in the process of updating this review and making it more applicable to all the disciplines. However the review serves as a rough collection of references for further learning and a resource for those advocating for increased planetary health engagement at their institutions.

### **Planetary Health Curriculum**

<u>Section Overview:</u> This section evaluates the integration of planetary health topics into the pharmacy school curriculum. Today's pharmacy students will be on the frontlines of tackling the health effects of climate and other environmental changes. Therefore, it is critical that pharmacy students understand planetary health issues and principles.

**1.1 Does your pharmacy school curriculum address the impacts of extreme weather events on individual health and/or on healthcare systems?** 

This topic was explored in depth by the core curriculum. (3 points)

This topic was **briefly** covered in the **core** curriculum. (2 points)

This topic was covered in elective coursework. (1 point)

This topic was **not** covered. (0 points)

Score Assigned:

In the "Pharmaceutical Toxicology II" course at Hacettepe University Faculty of Pharmacy, the topic of "Air Pollution" was covered by discussing its sources and the problems it causes from various perspectives. Additionally, in terms of health, the symptoms of a condition called "Sick Building Syndrome" and the factors contributing to this condition were explained. Lecture notes: https://drive.google.com/file/d/10CUZzWRXNxeIpo4dk34\_B4PKaolkd0IG/view?usp=drivesdk

3

In the **"Pharmaceutical Care II"** course, the lecture on **"Asthma"** examined articles related to asthma development due to weather changes. Lecture notes: https://drive.google.com/file/d/1fH0Ab44rECUn6hYGdiqbMq7DOIKPO1sb/view?usp=sharing

In the "Quality Assurance and Regulations" course, a Turkish pharmacist working at the World Health Organization (WHO) gave a presentation covering the One Health approach, air pollution, and climate change. The WHO's efforts in these areas were also discussed.

In the "**Pharmaceutical Care I**" course, the lecture on "**Hypertension**" briefly examined the effects of weather changes on blood pressure. Lecture notes: <u>https://drive.google.com/file/d/14BOmWKeaAD113-1KthIq-Rk7jmTKa7lK/view?usp=sharing</u>

**1.2** Does your pharmacy school curriculum address the environmental impact of medicines in terms of their pollution, ecological impact and contamination of water systems?

This topic was explored **in depth** by the **core** curriculum. (3 points)

This topic was <b>briefly</b> covered in the <b>core</b> curriculum. (2 points)	
This topic was covered in elective coursework. (1 point)	
This topic was <b>not</b> covered. (0 points)	
Score Assigned:	3
-	

In the "Pharmaceutical Toxicology II" course at Hacettepe University Faculty of Pharmacy, the topic "The Effects of Water and Soil Pollution on Human and Environmental Health" covered the definitions of water and soil pollution, along with the factors causing them. Information was provided on past events that have profoundly impacted humanity, with a focus on the aspects of these issues related to the field of pharmacy. Possible actions were listed to raise awareness about sustainable production and consumption practices and waste management solutions. Lecture notes: https://drive.google.com/file/d/liyeHda9W0G\_7ErTyT\_o-WE2OhsmRb3Cp/view?usp=drivesdk

In the "Pharmaceutical Care II" course, the lecture on "Asthma" covered the change in Ventolin's pharmaceutical formulation, where chlorofluorocarbon (CFC) gas was replaced with hydrofluoroalkane (HFA) gas due to the former's greater environmental harm. Lecture notes: https://drive.google.com/file/d/1fH0Ab44rECUn6hYGdiqbMq7DQIKPQ1sb/view?usp=sharing

## **1.3 Does your pharmacy school curriculum address the health effects of pharmaceutical industry- and manufacturing-related environmental toxins?**

This topic was explored in depth by the core curriculum. (3 points)

This topic was **briefly** covered in the **core** curriculum. (2 points)

This topic was covered in elective coursework. (1 point)

This topic was **not** covered. (0 points)

Score Assigned:

In the "Environmental Toxicology" elective course at Hacettepe University Faculty of Pharmacy, the lectures titled "The Effects of Pesticide Use on the Environment and Public Health," "Metals Causing Environmental Contamination and Treatment Approaches," and "Evaluation of Nitrates and Nitrites in Terms of Environmental Pollution and Human Health" explore in detail the effects of toxins used directly and indirectly in the pharmaceutical industry and production on human health, as well as the resulting illnesses and their treatments. These topics cover the toxicity mechanisms of heavy metals, heavy metal poisoning and treatments, the effects of pesticides on the environment and human health, nitrates, nitrites, and the nitrogen cycle.

1

You can find the lecture notes at the following links:

• <u>https://drive.google.com/file/d/19thGwehOQmzorvaTT9xL0MmQFjQ3YE4q/view?usp=drivesdk</u>

- <u>https://drive.google.com/file/d/1-ohcqJjZNx-Mosnxy6wd8KXlOR7-VOyi/view?usp=drivesd</u> k
- <u>https://drive.google.com/file/d/13MqThjPgNzThIWLh9zqdDq3GTYc85p3r/view?usp=drive</u> <u>sdk</u>

## **1.4.** Does your pharmacy school curriculum address the carbon footprint of healthcare systems?

This topic was explored in depth by the core curriculum. (3 points)

This topic was **briefly** covered in the **core** curriculum. (2 points)

This topic was covered in elective coursework. (1 point)

This topic was **not** covered. (0 points)

Score Assigned:

0

Score explanation: Insert explanation here.

## **1.5.** Does your pharmacy school curriculum address the impact of climate change on the changing patterns of infectious diseases and increased antimicrobial resistance?

This topic was explored **in depth** by the **core** curriculum. (3 points)

This topic was **briefly** covered in the **core** curriculum. (2 points)

This topic was covered in **elective** coursework. (1 point)

This topic was **not** covered. (0 points)

Score Assigned:

As part of the **Pharmacology Department Seminars** at the Faculty of Pharmacy, the topic "Antimicrobial Resistance in the World and Turkey" was discussed. The seminar covered both the effects of climate change and other contributing factors.

2

**1.6.** Does your pharmacy school curriculum address the respiratory health effects of climate change and air pollution?

This topic was explored in depth by the core curriculum. (3 points)

This topic was **briefly** covered in the **core** curriculum. (2 points)

This topic was covered in elective coursework. (1 point)	
This topic was <b>not</b> covered. (0 points)	
Score Assigned:	3

In the "Pharmaceutical Toxicology II" course at Hacettepe University Faculty of Pharmacy, the topic "Respiratory Toxicity" was covered. First, the pulmonary system was explained as a primary target organ in toxicity. The acute responses and chronic diseases caused by toxic substances in the pulmonary system were discussed. The toxic mechanisms of benzene, toluene, methanol, carbon monoxide, and cyanide were explained, along with information on their antidotes.

You can find the lecture notes at the following link: <u>https://drive.google.com/file/d/19K82lvYVovm-HLQfeNhkRhnnW3kp--L3/view?usp=drivesdk</u>

## **1.7.** Does your pharmacy school curriculum address the cardiovascular health effects of climate change, including increased heat?

This topic was explored **in depth** by the **core** curriculum. (3 points)

This topic was briefly covered in the core curriculum. (2 points)

This topic was covered in elective coursework. (1 point)

This topic was **not** covered. (0 points)

Score Assigned:

Score explanation: Insert explanation here.

In the "Pharmaceutical Care I" course, the lecture on "Hypertension" briefly examined the effects of weather changes on blood pressure. Lecture notes:

2

https://drive.google.com/file/d/14BQmWKeaAD113-1KthIq-Rk7jmTKa7lK/view?usp=sharing

In the "Environmental Toxicology" elective course at Hacettepe University Faculty of Pharmacy, the lecture titled "Global Environmental Issues" covered environmental problems caused by climate change, types of environmental pollution, their classification, and their effects on various organs and systems in the human body, including the cardiovascular system. Lecture notes:

https://drive.google.com/file/d/1WQCW5OC4PsTlaWdNiOcR8Ck8kkPd\_oVc/view?usp=drivesdk

**1.8.** Does your pharmacy school curriculum address the relationship between climate change and allergies?

This topic was explored in depth by the core curriculum. (3 points)

This topic was briefly covered in the core curriculum. (2 points)

This topic was covered in elective coursework. (1 point)

This topic was **not** covered. (0 points)

Score Assigned:

0

Score explanation: Insert explanation here.

**1.9.** Does your pharmacy school curriculum address the mental health and neuropsychological effects of environmental degradation and climate change?

This topic was explored in depth by the core curriculum. (3 points)

This topic was **briefly** covered in the **core** curriculum. (2 points)

This topic was covered in elective coursework. (1 point)

This topic was not covered. (0 points)

Score Assigned:

0

Score explanation: Insert explanation here.

1.10. Does your pharmacy school curriculum address the unequal regional health impacts of climate change nationally and globally, including the impact of social inequality?

This topic was explored in depth by the core curriculum. (3 points)

This topic was **briefly** covered in the **core** curriculum. (2 points)

This topic was covered in elective coursework. (1 point)

This topic was **not** covered. (0 points)

Score Assigned:

2

Score explanation: In the 'Pharmaceutical Toxicology II' course at Hacettepe University Faculty of Pharmacy, climate change is associated with an increase in the frequency of natural disasters under the topic 'Disaster Toxicology and Physical, Chemical, and Biological Factors Causing Disasters.' It has been emphasized that disasters often exacerbate social inequalities and disproportionately affect vulnerable communities. It was noted that, particularly in low-income regions, climate change can lead to significant challenges in accessing healthcare, clean water, or food. These deficiencies negatively impact global health on a broad spectrum, primarily by contributing to the emergence of infectious diseases. You can find the mentioned course notes at the link below:

https://drive.google.com/file/d/1cvQa3my4sxlB5MeoSi2EuN\_sS4eUJ9dG/view?usp=drivesdk"

At Hacettepe University Faculty of Pharmacy, public health is defined within the scope of the 'Public Health' course as a science that aims to improve environmental conditions and social activities to provide every individual with a standard of living that sustains health, prevents diseases, and enhances physical well-being. It emphasizes that individuals are interconnected with their environment and that the causes of diseases are also related to social factors. It is highlighted that a stable ecosystem, sustainable resources, peace, social justice end equality are milestones in promoting a healthy life.

You can find the mentioned course notes at the link below.

https://docs.google.com/presentation/d/1vL4MbRB5oavvPIvoVr\_cFozJ8B1OVsn-/edit#slide=id.p6

## 1.11 Does your pharmacy school curriculum address the relationship between climate change and social determinants of health (e.g., reduced nutritional value of food)?

This topic was explored in depth by the core curriculum. (3 points)

This topic was briefly covered in the core curriculum. (2 points)

This topic was covered in elective coursework. (1 point)

This topic was **not** covered. (0 points)

Score Assigned:

Score explanation: This topic is addressed in one of our core courses, ECF487 Pharmaceutical Toxicology. Climate change is one of the significant social determinants of health today, and pharmacists must closely observe and be aware of its impacts on health. Climate change can lead to increased temperatures, intense rainfall, drought, and natural disasters. For example, heatwaves can exacerbate respiratory problems, while the depletion of water resources can trigger waterborne diseases. The reduction in water resources can indirectly decrease soil fertility, leading to a decline in the nutritional value of food. Infertile soils and low-quality food can, in turn, affect pharmaceutical raw materials. Additionally, climate change deepens social and economic inequalities, creating greater challenges in accessing healthcare services.

3

Pharmacists evaluate the impacts of climate change on the healthcare system, considering the increased incidence of diseases and difficulties in the supply of medicines to meet patient needs. In this context, pharmacists play a crucial role in combating climate change to protect and improve public health. You can find the mentioned course notes at the link below:

https://drive.google.com/file/d/1qvXPwKVzf6Ke1ePkRgzuKAEBL0eJQf0D/view

## **1.12.** Does your pharmacy school curriculum address the environmental and health co-benefits of a plant-based diet?

This topic was explored in depth by the core curriculum. (3 points)

This topic was **briefly** covered in the **core** curriculum. (2 points)

This topic was covered in elective coursework. (1 point)

This topic was **not** covered. (0 points)

Score Assigned:

Score explanation: This topic is briefly mentioned in our elective course, ECF303 Traditional Treatment Systems Around the World. Throughout human history, plants have been used in many different areas. Plants consumed as food are in traditional food forms. Plant-based nutrition has several positive effects on both the environment and health from a pharmaceutical perspective. The plant-based diet model supports environmental sustainability by reducing the consumption of animal products. It can mitigate the negative impacts on the environment. Additionally, plant-based nutrition can lower the risk of chronic diseases such as heart disease, obesity, and type 2 diabetes, offering a non-pharmacological alternative treatment option.Rich in high fiber content, antioxidants, and vitamins, plant-based foods improve overall health and provide a preventive approach in terms of well-being. Therefore, pharmacists can promote plant-based nutrition to support environmental sustainability while helping individuals maintain their health. You can find the mentioned course notes at the link below:

1

https://docs.google.com/file/d/1sNrf51D1Kuu3Vupveazl11pwobQD5YY/editusp=docslist\_api&filety pe=mspresentation

1.13. Does your pharmacy school curriculum cover these components of sustainable clinical practice? (1 point each)	
Waste production within the healthcare system and strategies for reducing waste in clinical activities such as single use plastic and packaging. (1 point)	0
Patient counselling on safe disposal of medications. For example, what can be disposed of and how to locate recycling schemes, in addition to certain drugs or drug classes that are most important to dispose of properly (e.g. hormonal contraceptives, drugs that are excreted unchanged/active metabolites). (1 point)	1
The impact of extreme heat, on patients on medications which can interfere with thermoregulation. (1 point)	0
The impact of anaesthetic gases on the healthcare carbon footprint. (1 point)	0

The environmental impact of pharmaceuticals and over-prescribing as a cause of climate health harm. Alternatively, teaching on de-prescribing where clinically appropriate and its environmental and health co-benefits would fulfil this metric. (1 point)	0
The health and environmental co-benefits of non-pharmaceutical management of conditions where appropriate such as exercise or yoga classes for type 2 diabetes; social group activities such as gardening for mental health conditions; active transport such as bicycle schemes for obesity. This is commonly known as social prescribing in the UK. (1 point)	1
The impact and benefits of benign by design pharmaceuticals through exploring medicinal chemistry concepts and/or discussing implications of excretion of active metabolites/unchanged drug products on ecological system. (1 point)	1

#### Score explanation:

1: Our faculty offers a course titled "ECF513 Pharmacy Management" in the 5th-year Fall Semester, taught by Assoc. Prof. Dr. Mine SİLİNDİR GÜNAY. In this course, she teaches about "Radioactive Pharmaceutical Waste Management." However, there is no specific course that covers waste management for all types of pharmaceutical forms. The course presentation is provided in the attachment.

https://drive.google.com/file/d/1pd7hWR-h0V255TPVgOU9DXQFcoDG9S-6/view?usp=drivesdk

1: Our faculty's 5th-year Fall Semester course "ECF584 Pharmaceutical Care 2" is taught by Assoc. Prof. Dr. Nadir YALÇIN, who covered the topic "Diabetes & the Role of the Pharmacist." He discussed the risk factors for Type 2 diabetes, noting that individuals who are overweight, work in stressful jobs, or have hormonal disorders are more susceptible to developing the disease. As a non-pharmacological treatment approach, engaging in exercise and seeking psychological help for stress can help prevent these conditions. Exercise is a crucial activity that offers numerous physical and mental benefits, positively affecting overall health. In diabetes, exercise improves insulin sensitivity, helps maintain a healthy weight, and supports proper breathing, digestion, and metabolism. When diabetes is well-controlled, exercise can lower blood sugar levels. Furthermore, exercise provides environmental benefits by reducing the use of motor vehicles, which helps improve air quality and decrease the carbon footprint. The course presentation is attached here. https://drive.google.com/file/d/1tGJK10QpM7bqNpFrh1-OU3GdZAHzuVrr/view?usp=drivesdk

1: In our faculty's course "ECF344 Pharmaceutical Toxicology," it was emphasized that some xenobiotics, can be transformed into compounds with higher environmental persistence as a result of biotransformation. However the effects of benign by design pharmaceuticals are not mentioned. The course presentation is attached here.

https://drive.google.com/file/d/1\_hg2V3HD1dsuipRoGHlj7a6ojJZkhCg\_/view?usp=sharing

**1.14.** Does your pharmacy school curriculum discuss the environmental implications of various dosage forms, medication delivery devices, and/or excipients?

This topic was explored in depth by the core curriculum. (3 points)

This topic was **briefly** covered in the **core** curriculum. (2 points)

This topic was covered in elective coursework. (1 point)

This topic was **not** covered. (0 points)

Score Assigned:

Score explanation: In the Pharmaceutical Care II course, which is one of our basic courses, it was verbally conveyed that while CFC gas was generally used in inhalers, hydrochloroalkane gas was used instead due to its high environmental damage. The relevant lecture notes can be accessed from the link below:

2

https://drive.google.com/drive/folders/1iQVbX63HKwg\_7mQis9uMN5LsFKOmhZlB

In the pharmaceutical technology 2 course, it was mentioned that the use of CFC gases is restricted due to their negative effects on the ozone layer and human health within the scope of aerosols. The relevant course notes can be accessed from the link below:

https://drive.google.com/drive/folders/ltLfMGYrDS2XzYMAMY7t-bM2cUbMUnzAJ

1.15. In training for patient communication, does your pharmacy school's curriculum introduce strategies for having conversations with patients about the health effects of climate change?

Yes, there are clear and detailed strategies introduced for having conversations with patients about climate change in the core curriculum (3 points)

Yes, having conversations with patients about climate change is briefly mentioned in the core curriculum. (2 points)

Yes, there are some examples of having conversations with patients about climate change in elective coursework. (1 point)

No, there are not strategies or examples for having conversations with patients about climate change (0 points)

Score Assigned:

0

Score explanation: No, there are not strategies or examples for having conversations with patients about climate change.

1.16. Does your pharmacy school curriculum guide students to consider the environmental impact of medications as a factor in addition to safety, efficacy, cost, and pill burden when comparing equivalent therapies?

This topic was explored **in depth** by the **core** curriculum. (3 points)

This topic was <b>briefly</b> covered in the <b>core</b> curriculum. (2 points)	
This topic was covered in elective coursework. (1 point)	
This topic was <b>not</b> covered. (0 points)	
Score Assigned: 0	
Score explanation: This topic was <b>not</b> covered.	

**1.17.** Is your pharmacy school currently in the process of implementing or improving Education for Sustainable Healthcare (ESH)/planetary health education?

Yes, the school is currently in the process of making major improvements to ESH/planetary health education. (4 points)

Δ

Yes, the school is currently in the process of making minor improvements to ESH/planetary health education. (2 points)

No, there are no improvements to planetary health education in progress. (0 points)

Score Assigned:

Score explanation: Our faculty is currently in the process of implementing or improving Sustainable Health Education (SHE)/planetary health education. With the planetary health report card we created within the scope of PHRC 2023-2024, a detailed evaluation was made for the first time in our faculty under the headings of "curriculum, planetary health research, community outreach and advocacy, support for student-led initiatives, campus sustainability" on Planetary Health and Sustainability. Thanks to this evaluation, we had the opportunity to see our situation and deficiencies in all these areas mentioned. As the PHRC team, we held a meeting with our advisor on what we could do to improve our planetary health report card. We discussed the improvements we determined could be made in detail in another meeting with our dean and determined the steps we could take specifically for our faculty. At the same time, it was also among the discussions at the meeting that we could progress more comprehensively by interacting with other faculties. As the PHRC team, our faculty stated that we aim to share spot information and increase the visibility of our activities on campus. We created a social media account called huef phrc because we thought that this would be a good idea. Apart from this, our school also offers learning opportunities related to the subject outside of the curriculum. For example, most of the guests who come to our faculty as speakers mention One Health in their presentations. For example, Prof. Dr. Murat Akova's seminar on Antimicrobial Resistance in the World and in Turkey, Melda Keçik who works at WHO, her presentation on Pharmacists in International Organizations, and many speakers who came to our faculty to make a presentation on Rational Drug Use, especially focusing on One Health, have been effective in raising awareness on this topic.

**1.18.** Does your pharmacy school have a member of faculty to incorporate planetary health and sustainable healthcare as a theme throughout the curriculum ?

Yes, there is/are a member(s) of faculty whose role is directly responsible for the incorporation of planetary health and sustainable healthcare as a theme throughout the curriculum (4 points)

Yes, there is/are member(s) of faculty who are incorporating planetary health and sustainable healthcare as a theme throughout the curriculum as well as doing their principle role (2 points)

There are no members of faculty who are incorporating planetary health and sustainable healthcare as a theme throughout the curriculum (0 points)

4

Score Assigned:

Score explanation: Green chemistry, also called sustainable chemistry, is a field of chemistry that focuses on the design of products and processes that will minimize or eliminate the use and production of hazardous substances. Green chemistry investigates ways to reduce the consumption of non-renewable resources, develops technological approaches to prevent pollution, and focuses on the environmental impact of chemistry. In the ECF 254 Separation and Chromatography in Pharmaceutical Analysis Course, it was mentioned that although greening processes in analytical chemistry are commonly tried in GC and HPLC methods, there are methods that green all the process steps from sample preparation to chromatographic separation. Greening approaches for chromatographic separations depend on the type of chromatography. In gas chromatography, it is recommended to move away from the use of helium as a carrier gas, as it is not a renewable resource. GC separations use low thermal mass technology (LTM), which can be greened because it saves energy. In liquid chromatography, approaches such as reducing solvent consumption and replacing toxic and environmentally harmful solvents with better alternatives have been emphasized. The relevant lecture notes can be accessed from the link below:

https://drive.google.com/drive/folders/16s8eAxX4KEZmmWpPcgyvyMkVyGkyZgmZ

**1.19.** Does your pharmacy school curriculum offer clinical practice experiences (for example, IPPE/APPE rotations in the U.S. or placement opportunities in the UK) that allow for the exploration of planetary health topics?

There are multiple clinical practice experiences/placements that allow for direct exposure to planetary health topics. (3 points)

There is one available clinical practice experience/placement that allows for direct exposure to planetary health topics. (2 points)

There are available clinical practice experiences/placements that allow for indirect exposure to planetary health topics. (1 point)

No, there are no such clinical practice experiences/placements available through the pharmacy school. (0 points)

Score Assigned:

Score explanation: No, there are no such clinical practice experiences/placements available through the pharmacy school.

1.20. Does your pharmacy school curriculum acknowledge a disparity in the effects of climate change? Specifically, does your curriculum address groups more vulnerable to environmental impacts, such as BIPOC, immigrant groups, low income populations, children, elderly, persons with disabilities, persons with pre-existing or chronic medical conditions?

This topic was explored in depth by the core curriculum. (3 points)

This topic was **briefly** covered in the **core** curriculum. (2 points)

This topic was covered in elective coursework. (1 point)

This topic was **not** covered. (0 points)

Score Assigned:

Score explanation: This topic is covered in several different lessons.

In the Pharmaceutical Toxicology II course, climate change was associated with increasing frequency of natural disasters in the topic titled "Disaster Toxicology and Physical, Chemical and Biological Components Causing Disasters". It has been stated that in low-income regions, especially due to the effects of climate change, there may be significant difficulties in accessing health services, clean water or food. These deficiencies negatively

3

affect global health in a wide spectrum, especially by causing the formation of infectious diseases. You can access the mentioned lecture notes from the link below:

https://drive.google.com/drive/folders/1wQI8cL81D8QxRnDGFVpubNysLbSnFzVi

Within the scope of ECF584 Pharmaceutical Care course, the incidence of diseases such as asthma, diabetes, dementia is higher in groups exposed to inequality. The effects of climate change have the potential to deepen inequalities within society. This effect may particularly affect groups that are more vulnerable to environmental factors such as immigrant groups, low-income populations, children, the elderly, the disabled, and individuals with chronic medical conditions. Climate change outcomes such as high temperatures, increased natural disasters, and depletion of water resources may affect low-income communities and immigrant groups more, as these groups generally do not benefit sufficiently from economic and social resources. Access to health systems and medicines may decrease. In addition, children, the elderly, and individuals with chronic diseases may be more susceptible to health problems caused by climate change. Therefore, when developing strategies to combat climate change, the needs and risks of these vulnerable groups should be addressed as a priority, so that it is possible to reduce inequalities and protect the general health of society. The link to the mentioned lecture notes is given below:

 $https://drive.google.com/file/d/1GQveUJzdjfv\_eDRAdyCq9iWynaRsD61R/view?usp=drivesdk$ 

Section Total (36 out of 66)

54,54%

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### **Interdisciplinary Research**

**Section Overview:** This section evaluates the quality and quantity of interdisciplinary planetary health research at the broader institution. Interactions between health and the environment are complex and multifactorial. While climate change has been extensively studied from an environmental science perspective, planetary health is an emerging field. As leading health institutions with talented researchers and research resources, institutions should fund research studying the health effects of climate change and anthropogenic environmental toxins. This obligation is particularly strong because the public and policymakers are more attentive to climate change when its implications for human health are emphasised.

2.1. Are there researchers engaged in planetary health research and healthcare sustainability research at your <u>institution</u>?

Yes, there are faculty members at the **institution** who have a **primary** research focus in planetary health **or** sustainable healthcare/vetcare. (3 points)

Yes, there are individual faculty members at the **institution** who are conducting research **related** to planetary health or healthcare sustainability, OR are part of a national/international sustainability working group, but it is not their primary research focus. (2 points)

There are sustainability researchers at the **institution**, but not specifically associated with healthcare/vetcare. (1 point)

No, there are **no** planetary health and/or sustainability researchers at the **institution** at this time. (0 points)

3

Score Assigned:

Score explanation: Within the scope of the Biosphere Museum, which operates under Hacettepe University, our esteemed faculty members, Assoc. Prof. Dr. Golshan Zare and Expert Biologist Neziha Yağmur Diker, conduct research and initiatives both in the field of Pharmaceutical Sciences and for the advancement of Planetary Health. You can find further information about the Biosphere Museum, as well as its curators, at the following link:

https://www.biyosfermuze.com/hakkimizda/

Also, our faculty members at the Faculty of Pharmacy, Hacettepe University, Assoc. Prof. Dr. Ayşegül Doğan, Prof. Dr. Nursabah Elif Başçı Akduman, and Prof. Dr. Selen Yeğenoğlu, are actively engaged in research and initiatives focused on sustainable healthcare services on behalf of the Pharmaceutical Profession as well as the improvement of planetary health. You can access their work through the following links:

https://avesis.hacettepe.edu.tr/avseguld

https://avesis.hacettepe.edu.tr/nbasci

https://avesis.hacettepe.edu.tr/selen

### **2.2.** Is there a dedicated department or institute for interdisciplinary planetary health research at your <u>institution</u>?

There is **at least one** dedicated department or institute for interdisciplinary planetary health research. (3 points)

There is **not currently** a department or institute for interdisciplinary planetary health research, but there are **plans** to open one in the next 3 years. (2 points)

There is an **Occupational and Environmental Health department**, but no interdisciplinary department or institute for planetary health research. (1 points)

There is **no** dedicated department or institute. (0 points)

Score Assigned:

Score explanation: "The Hacettepe University Sustainable Campuses Coordination Office" is an organization established with the awareness of the importance of environmental protection and educating individuals who are part of these ecosystems. Aiming to make a meaningful impact, it conducts various research projects, events, seminars, and campaigns that address themes of environment and sustainability. You can access the official website of this department through the link below:

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https://syk.hacettepe.edu.tr/

**2.3.** Is there a process by which communities disproportionately impacted by climate change and environmental injustice give input or make decisions about the research agenda at your <u>institution</u>?

Yes, there is a process in which community members impacted by climate and environmental injustice have **decision-making power** in the climate + environmental research agenda. (3 points)

Yes, there is a process in which community members impacted by climate and environmental injustice **advise** the climate + environmental research agenda. (2 points)

No, but there are **current efforts** to establish a process for community members to advise or make decisions on the research agenda. (1 points)

There is **no** process, and **no** efforts to create such a process. (0 points)

Score Assigned:

0

Score explanation: There is no process, and no efforts to create such a process.

2.4. Does your <u>institution</u> have a planetary health website that centralises ongoing and past research related to health and the environment?

There is an **easy-to-use, adequately comprehensive** website that **centralises** various campus resources related to health and the environment including all of the following: upcoming events, leaders in planetary health at your institution, and relevant funding opportunities. (3 points)

There is a website that **attempts to centralise** various campus resources related to health and the environment, but it is hard-to-use, not updated, or not adequately comprehensive. (2 points)

The **institution** has an **Office of Sustainability website** that includes **some** resources related to health and the environment. (1 point)

There is **no** website. (0 points)

Score Assigned:

Score explanation: The official website established to consolidate and disseminate environmental and sustainability initiatives at Hacettepe University is <u>https://syk.hacettepe.edu.tr/</u>. This platform serves as a central repository for all sustainability-related endeavors on campus, encompassing research projects, academic events, seminars, awareness campaigns, campus sustainability initiatives, and awards. Furthermore, it features "Stfir Attk ve Attk Yönetimi Gazetesi Gündem24" an online journal dedicated to sustainability-related news and developments. You can access this journal through the link below:

3

https://syk.hacettepe.edu.tr/tr/hacettepe\_universitesi\_sifir\_atik\_ve\_atik\_yonetimi\_gazetesi\_-112

2.5. Has your <u>institution</u> recently hosted a conference or symposium on topics related to planetary health?

Yes, the **institution** has hosted at least one conference or symposium on topics related to planetary health in the past year. (4 points)

Yes, the **institution** has hosted at least one conference or symposium on topics related to sustainable healthcare/vetcare in the past year. (3 points)

Yes, the **institution** has hosted a conference on topics related to planetary health / sustianable healthcare/vetcare in the past three years. (2 points)

The **institution** has not hosted any conferences directly, but they have provided financial support for a local planetary health event. (1 point)

No, the **institution** has not hosted a conference on topics related to planetary health in the past three years. (0 points)

Score Assigned:

Score explanation: Since 2023, the Hacettepe University Sustainable Campuses Coordination Office has been organizing conferences under the title "Sürdürülebilirlik Seminerleri (Sustainability Seminars)". These seminars address contemporary ecological challenges within the framework of net-zero emission targets, drawing attention to environmental issues through comparative studies. Additionally, they examine the relationship between climate change, forest ecosystems, and sustainability, emphasizing the necessity of maintaining a balance between human

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activities and the natural environment. For more information on the "Sürdürülebilirlik Seminerleri" please visit the following link:

https://syk.hacettepe.edu.tr/tr/haberler

## **2.6.** Is your <u>institution</u> a member of a national or international planetary health or ESH/ESV organisation?

Yes, the institution is a member of a national or international planetary health **or** ESH/ESV organisation. (1 points)

No, the institution is **not** a member of such an organisation. (0 points)

Score Assigned:

0

Score explanation: No, the institution is not a member of such an organisation.

Section Total (13 out of 17)

76,47%

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### **Community Outreach and Advocacy**

<u>Section Overview:</u> This section evaluates medical school engagement in community outreach and advocacy efforts associated with planetary health. Researching and teaching planetary health is necessary but not sufficient. It is critical that institutions also directly engage with communities most affected by environmental health harms. Although climate change is a problem largely created by those with power and resources, its impacts fall disproportionately on under-resourced populations and communities of colour. Institutions should partner with local communities affected by climate change and pollution to share information about environmental health threats, advocate together for change, and provide opportunities for students to be a part of this work.

## **3.1.** Does your <u>institution</u> partner with community organisations to promote planetary and health?

Yes, the **institution** meaningfully partners with **multiple** community organisations to promote planetary and environmental health. (3 points)

Yes, the **institution** meaningfully partners with **one** community organisation to promote planetary and environmental health. (2 points)

The **institution** does not partner with community organisations, but has participating in community focused events relating to planetary health. (1 point)

No, there is **no** such meaningful community partnership. (0 points)

Score Assigned:

Score explanation: The European Pharmaceutical Students' Association (EPSA), of which our faculty is a member, conducts research on One Health and planetary health. Additionally, the main theme of this year's Annual Congress, held annually, has been designated as "One Health." You can access the website through these link: <u>ONE HEALTH SURVEY</u>, <u>45th EPSA Annual Congress</u>

3

The Farmasötik Gelişim Topluluğu within our faculty collaborated with a community organization called Esmiyor and invited them as speakers to the 7th Pharmaceutical Development Days congress. Furthermore, the 6th Pharmaceutical Development Days focused on sustainability, hosting expert speakers in the field. You can access the website through these link: <u>7th</u> <u>Pharmaceutical Development Days 1</u>, <u>7th Pharmaceutical Development Days 2</u>, <u>6th</u> <u>Pharmaceutical Development Days 1</u>, <u>6th Pharmaceutical Development Days 2</u>

### **3.2.** Does your <u>institution</u> offer community-facing courses or events regarding planetary health?

The institution offers community-facing courses or events at least once every year. (3 points)

The **institution** offers courses or events open to the community at least once per year, but they are not primarily created for a community audience. (2 points)

The **institution** has promoted community-facing courses or events, but was not involved in planning those courses or events. (1 point)

The **institution/medical school** have not offered such community-facing courses or events. (0 points)

Score Assigned:

0

*Score explanation:* The **institution/medical school** have not offered such community-facing courses or events.

**3.3.** Does your <u>institution</u> have regular coverage of issues related to planetary health and/or sustainable healthcare in university update communications?

Yes, all students **regularly** receive communication updates dedicated to planetary health and/or sustainable healthcare. (2 points)

Yes, planetary health and/or sustainable healthcare topics are regularly included in communication updates to **some courses**. (1 point)

Students **do not** receive communications about planetary health or sustainable healthcare. (0 points)

Score Assigned:

*Score explanation:* Yes, planetary health and/or sustainable healthcare topics are regularly included in communication updates to **some courses**. *Our faculty is doing research on the connection between Green Self-Efficacy, Environmental Health Literacy, and Environmental Attitudes in Pharmacy Students. You can access the google form through this link:* <u>https://docs.google.com/forms/d/e/1FAIpQLSe9yFhW6ySnDNkCfMeX256PKL7VTt88vfVOV5We7K</u> <u>-8rL6mOQ/closedform</u>

1

3.4. Does the <u>institution</u> or <u>main affiliated hospital trust</u> engage in professional education activities targeting individuals post graduation with the aim of ensuring their knowledge and skills in planetary health and sustainable healthcare remain up to date during their professional career?

Yes, the **institution** or **main affiliated hospital trust** offers multiple in-person or online courses relating to planetary health and/or sustainable healthcare for post-graduate providers, including at least one with a primary focus of planetary health. (2 points)

Yes, the **institution** or **main affiliated hospital trust** offers one course relating to planetary health and/or sustainable healthcare for post-graduate provider. (1 point)

There are **no** such accessible courses for post-graduate providers. (0 points)

Score Assigned:	1

Score explanation: A paid certificate program titled "Sustainable Development for Climate Change" is offered under the umbrella of Hacettepe University's Lifelong Learning Center. You can access the website through this link: https://yasamboyu.hacettepe.edu.tr/egitimler/iklim-degisikligi-icin-surdurulebilir-kalkinma-sertifik a-programi/

**3.5.** Does your <u>institution</u> or its <u>affiliated teaching hospitals</u> have accessible educational materials for patients about environmental health exposures?

Yes, the **medical school** or <u>all</u> affiliated hospitals have accessible educational materials for patients. (2 points)

Some affiliated hospitals have accessible educational materials for patients. (1 point)

No affiliated medical centres have accessible educational materials for patients. (0 points)

Score Assigned:

Score explanation: The website of Hacettepe University Hospitals redirects patients and visitors seeking information about climate change and its effects on health to the webpage of the Faculty of Medicine's Department of Public Health. You can access the website through this link: <u>https://halksagligi.hacettepe.edu.tr/diger/halkayonelik.php</u>

2

**3.6.** Does your <u>institution</u> or its <u>affiliated teaching hospitals</u> have accessible educational materials for patients about the health impacts of climate change?

Yes, the **medical school** or **all affiliated hospitals** have accessible educational materials for patients. (2 points)

Some affiliated hospitals have accessible educational materials for patients. (1 point)

No affiliated hospitals have accessible educational materials for patients. (0 points)

Score Assigned:

Score explanation:

Hacettepe University Hospitals direct patients and visitors seeking information on climate change and its impacts on health to the website of the Faculty of Medicine's Department of Public Health. On this platform, under the section titled Current Health Information for the Public, resources such as infographics, information notes, posters, presentations, and informational documents aimed at raising public awareness are available. You can access the websites through these links: <u>(Link 1)</u> (Link 2) (Link 3)

2

Section Total (9 out of 14)

64,29%

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### Support for Student-Led Planetary Health Initiatives

Section Overview: This section evaluates institutional support for student-led planetary health initiatives, such as funding, fellowships, programming, and student groups. Planetary health is a young field and, as young people facing a future deeply shaped by climate change, students are often some of the first at an institution to engage with it. Institutions should provide support for students to engage in sustainability quality improvement (QI) initiatives, discover mentors in their area of interest, and receive funding for planetary health projects.

4.1. Does your <u>institution</u> offer support for students interested in enacting a sustainability initiative/QI project?

Yes, the **institution** *either* offers grants for students to enact sustainability initiatives/QI projects *or* sustainability QI projects are part of the core curriculum. (2 points)

The **institution** encourages sustainability QI projects (to fulfil clerkship or longitudinal requirements) and offers resources to help students succeed in these projects, **but** there is no student funding available and there is no requirement to participate. (1 point)

No, **neither** the medical school or the institution offer opportunities or support for sustainability initiatives or QI projects. (0 points)

0

Score Assigned:

Score explanation:

Neither the medical school or the institution offer opportunities or support for sustainability initiatives or QI projects.

**4.2.** Does your <u>institution</u> offer opportunities for students to do research related to planetary health and/or sustainable healthcare/vetcare?

The **institution** has a **specific** research program or fellowship for students interested in doing planetary health/sustainable healthcare/vetcare research. (2 points)

There are research opportunities for students to perform research related to planetary health/sustainable healthcare, but these **require student initiative** to seek these out and carry them out in their spare time. (1 point)

1

There are **no opportunities** for students to engage in planetary health/sustainable healthcare research. (0 points)

Score Assigned:

#### Score explanation:

The students of our faculty are open to working on projects related to planetary health and sustainable healthcare, but due to a lack of available time, no projects have been realized. Apart from this, students like us, who have formed the "PHRC Team" with the goal of obtaining a PHRC, receive sufficient support. When a project in this field is proposed, our academics provide adequate interest and guidance.

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4.3. Does the <u>institution</u> have a webpage where students can find specific information related to planetary health and/or sustainable healthcare/vetcare activities and mentors within the institution? For example, projects achieved, current initiatives underway at the medical school and/or contact of information of potential mentors.

The institution has a webpage with specific information related to planetary health or sustainable healthcare/vetcare that includes up-to-date information on relevant initiatives and contact information of potential mentors. (2 points)

There is an institution webpage that features some information on projects and mentors within planetary health and sustainable healthcare within the medical school, but it lacks key information. (1 point)

There is **no institution** specific webpage for locating planetary health and/or sustainable healthcare projects or mentors. (0 points)

1

Score Assigned:

Score explanation:

*The PHRC Team, which actively operates within our faculty, has an Instagram account called (a)huef\_phrc (<u>https://www.instagram.com/huef\_phrc/</u>) to announce the reports they publish.* 

4.4. Does your <u>institution</u> have registered student groups dedicated towards fostering a culture of planetary health engagement, scholarship, and advocacy on campus, supported by faculty advisors?

1

Yes, there is a student organisation **with faculty support** at my medical school dedicated to planetary health or sustainability in healthcare. (2 points)

Yes, there is a student organisation at my medical school dedicated to planetary health or sustainability in healthcare but it **lacks faculty support.** (1 point)

No, there is **not** a student organisation at my institution dedicated to planetary health or sustainability in healthcare. (0 points)

Score Assigned:

Score explanation:

The students of our faculty are open to working on projects related to planetary health and sustainable healthcare, but due to a lack of available time, no projects have been realized. Apart from this, students like us, who have formed the "PHRC Team" with the goal of obtaining a PHRC, receive sufficient support. When a project in this field is proposed, our academics provide adequate interest and guidance.

4.5. Is there a student liaison representing sustainability interests who serves on a <u>department</u> <u>or institutional</u> decision-making council to advocate for curriculum reform and/or sustainability best practices?

Yes, there is a student representative that serves on a department or institutional decision-making council/committee. (1 points)

No, there is no such student representative. (0 points)

Score Assigned:

0

Score explanation:

There is no such student representative.

4.6. In the past year, has the <u>institution</u> had one or more co-curricular planetary health programs or initiatives in the following categories? (1 point each)	
Projects where students are able to gain experience in organic agriculture and sustainable food systems, such as gardens, farms, community supported agriculture (CSA), fishery programs, or urban agriculture projects.	0
Panels, speaker series, or similar events related to planetary health that have students as an intended audience.	1
Events in which students learn directly from members of a local environmental justice community about the climate and environmental challenges they face, and how health professionals can partner with their community to address these exposures and impacts.	0
Cultural arts events, installations or performances related to planetary health that have students as an intended audience.	0
Local volunteer opportunities related to building community resilience to anthropogenic environmental impacts.	
Wilderness or outdoors programs (e.g., that organise hiking, backpacking, kayaking, or other outings for students)	1
Score explanation:	
As part of the UNI101 course for the 2023-2024 academic year across the university, Dr. Dilara Tüfekçioğlu informed us about "Zero Waste Management." She emphasized the daily amount of	

4.6. In the past year, has the <u>institution</u> had one or more co-curricular planetary health programs or initiatives in the following categories? (1 point each)		
Projects where students are able to gain experience in organic agriculture and sustainable food systems, such as gardens, farms, community supported agriculture (CSA), fishery programs, or urban agriculture projects.	0	
Panels, speaker series, or similar events related to planetary health that have students as an intended audience.	1	
Events in which students learn directly from members of a local environmental justice community about the climate and environmental challenges they face, and how health professionals can partner with their community to address these exposures and impacts.	0	
Cultural arts events, installations or performances related to planetary health that have students as an intended audience.	0	
Local volunteer opportunities related to building community resilience to anthropogenic environmental impacts.	0	
Wilderness or outdoors programs (e.g., that organise hiking, backpacking, kayaking, or other outings for students)	1	
household waste and what percentage of it is suitable for recycling. She also discussed what we can do individually and mentioned that waste management is implemented at the institutional level.		
Additionally, Assoc. Prof. Pinar Gözen Ercan held a talk on the 17 interconnected goals of the 2030 Sustainable Development Agenda (SDA) and what we can do as individuals.		
You can view the content of the talk at this link: <u>https://uni101.hacettepe.edu.tr/soylesiler-2023/</u>		
As students of the Faculty of Pharmacy, we are closely engaged with plants. Therefore, our courses, such as botany and pharmacognosy, include a year-end field trip. At the end of the year, a trip was organized to the forested area of Hacettepe University's Beytepe Campus, where information was provided on wildlife, the drugs derived from this wildlife for		
human use, and the environmental impacts of climate change.		

Section Total (5 out of 15)

33,3%

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### **Campus Sustainability**

Section Overview: This section evaluates the support and engagement in sustainability initiatives by the institution. The healthcare industry is a major contributor to greenhouse gas emissions as well as pollution that harms local, regional, and global ecosystems. While healthcare is, by nature, a resource-intensive endeavour, the healthcare sector is well poised to lead the world to a more sustainable future. This will involve scrutinising every aspect of how our systems operate, from where we source our energy, to how we build our infrastructure, to what companies we invest in. Our medical schools, clinics, and hospitals must set the standard for sustainable practices, and show other sectors what is possible when it comes to minimising environmental impact.

#### 5.1. Does your institution have an Office of Sustainability?

Yes, there is an Office of Sustainability with multiple full-time staff dedicated to campus sustainability. If the Office of Sustainability serves the entire campus, there is **at least one designated staff member** for sustainability at the hospital. (3 points)

There is an Office of Sustainability with one or more full-time staff dedicated to campus sustainability, but **no specific staff member** in charge of hospital sustainability. (2 points)

There are **no salaried sustainability staff**, but there is a sustainability task force or committee. (1 point)

There are **no** staff members **or** task force responsible for overseeing campus sustainability. (0 points)

Score Assigned:

*Score explanation:* 

Hacettepe University Sustainable Campuses Coordination is an organization that sets out with the awareness of the importance of protecting the environment in various fields and raising awareness among individuals who are members of this environment. It aims to make a difference in this ecosystem. On the coordination's website, you can find news on the topic, as well as announcements about events and campaigns.

3

https://syk.hacettepe.edu.tr/

http://sustainability.hacettepe.edu.tr/

#### 5.2. How ambitious is your institution's plan to reduce its own carbon footprint?

The institution has a written and approved plan to achieve carbon neutrality by 2030 (5 points)

The institution has a written and approved plan to achieve carbon neutrality by 2040 (3 points)

The institution has a stated goal of carbon neutrality by 2040 but has not created a plan to reach that goal or the plan is inadequate (1 point)

The institution/medical school does **not** meet any of the requirements listed above (0 points)

Score Assigned:	1
Score explanation:	

As the Faculty of Pharmacy, our university carries out its activities within the framework of the **United Nations Sustainable Development Goals** as stated in https://kalite.hacettepe.edu.tr/fs /files/Raporlar/toplumsalkatkiizlem2021.pdf.

In this context, the **Subhiye Campus**, where our faculty is also located, has been awarded the "**Zero Waste Certificate**", as can be seen at <u>https://syk.hacettepe.edu.tr/tr/sifir atik belgesi sibhiye yerleskesi-68</u>.

At the same time, our university is carrying out efforts to manage its **carbon footprint** in collaboration with **UI GreenMetric**, as presented at https://syk.hacettepe.edu.tr/fs\_/files/Greenmetric\_Rektörlük%20Sunum.pdf.

## **5.3.** Do buildings/infrastructure used by the institution for teaching (not including the hospital) utilize renewable energy?

Yes institution buildings are 100% powered by renewable energy. (3 points)

Institution buildings source >80% of energy needs from off-site and/or on-site renewable energy. (2 points)

Institution buildings source >20% of energy needs from off-site and/or on-site renewable energy. (1 point)

Institution buildings source <20% of energy needs from off-site and/or on-site renewable energy. (0 points)

0

Score Assigned:

Score explanation:

Apart from the solar energy panels within Hacettepe University Beytepe Campus, there are no other on-site renewable energy sources. The Faculty of Pharmacy is not located within this campus, and its energy supply is entirely provided by non-renewable energy sources.

5.4. Are sustainable building practices utilised for new and old buildings on the <u>institution's</u> campus, with design and construction of new buildings and remodelling of old buildings conforming to a published sustainability rating system or building code/guideline?

Yes, sustainable building practices are utilised for new buildings on the intitution's campus and the **majority** of old buildings **have been retrofitted** to be more sustainable. (3 points)

Sustainable building practices are utilised for new buildings on the institution's campus, but most old buildings have **not been retrofitted.** (2 points)

Sustainable building practices are **inadequately or incompletely** implemented for new buildings. (1 point)

Sustainability is **not considered** in the construction of new buildings. (0 points)

Score Assigned:

0

Score explanation: Sustainability is not considered in the construction of new buildings.

#### 5.5. Has the <u>institution</u> implemented strategies to encourage and provide environmentally-friendly transportation options for students and reduce the environmental impact of commuting?

Yes, the institution has implemented strategies to encourage and provide **environmentally-friendly transportation options** such as safe active transport, public transport, or carpooling and these options are well-utilised by students. Alternatively, the campus location is not amenable to unsustainable forms of transportation by default. (2 points)

The institution has implemented **some** strategies to provide environmentally-friendly transportation options, but the options are **unsatisfactorily** accessible or advertised. (1 point)

The institution has **not** implemented strategies to encourage and provide environmentally-friendly transportation options. (0 points)

2

Score Assigned:

Score explanation:

Hacettepe University Faculty of Pharmacy is located within a 25-minute walking distance from *Kızılay Square, which can be considered the center of Ankara, and there are many public transportation stops nearby.* 

In addition, shuttle services are available to facilitate transportation between the university's two campuses (Sihhiye and Beytepe). Apart from the shuttles, transportation is provided by the subway and buses, some of which are electric and can be used by students free of charge.

## 5.6. Does your <u>institution</u> have an organics recycling program (compost) and a conventional recycling program (aluminium/paper/plastic/glass)?

Yes, the institution has **both** compost **and** recycling programs accessible to students and faculty. (2 points)

The institution has **either** recycling **or** compost programs accessible to students and faculty, but not both. (1 point)

There is <b>no</b> compost or recycling program at the medical school. (0 points)	
Score Assigned:	2

Score explanation:

In the Hacettepe University Faculty of Pharmacy building, each floor is equipped with waste and recycling bins, where recyclable waste is separated based on its material type.

Additionally, in the cafeteria, students are required to separate waste into organic and non-organic categories. With the use of composting machines, which play a crucial role in recycling organic waste, and their implementation at the Temporary Waste Center located on the Beytepe Campus by the Hacettepe University Sustainable Campuses Coordination, the university aims to achieve waste reduction goals.

5.7. Does the <u>institution</u> apply sustainability criteria when making decisions about the campus food and beverage selections (e.g. local sourcing, reduced meat, decreased plastic packaging)?

There are sustainability guidelines for food and beverages, but they are **insufficient or optional**. The institution **is engaged** in efforts to increase food and beverage sustainability. (2 points)

There are sustainability guidelines for food and beverages, but they are **insufficient or optional**. The institution is **not** engaged in efforts to increase food and beverage sustainability. (1 point)

0

There are **no** sustainability guidelines for food and beverages. (0 points)

Score Assigned:

Score explanation: There are no sustainability guidelines for food and beverages.

## **5.8.** Does the <u>institution</u> apply sustainability criteria when making decisions about supply procurement?

Yes, the institution has **adequate** sustainability requirements for supply procurement **and** is **engaged** in efforts to increase sustainability of procurement. (3 points)

There are sustainability guidelines for supply procurement, but they are **insufficient or optional**. The institution is **engaged** in efforts to increase sustainability of procurement. (2 points)

There are sustainability guidelines for supply procurement, but they are **insufficient or optional**. The institution is **not engaged** in efforts to increase sustainability of procurement. (1 point)

There are <b>no</b> sustainability guidelines for supply procurement. (0 points)	
Score Assigned:	0
Score explanation: There are no sustainability guidelines for supply procurement.	

#### 5.9. Are there sustainability requirements or guidelines for events hosted at the institution?

Every event hosted at the institution must abide by sustainability criteria. (2 points)

The institution **strongly recommends or incentivizes** sustainability measures, but they are **not required.** (1 point)

There are **no** sustainability guidelines for institution events. (0 points)

Score Assigned:

0

Score explanation:

There are no sustainability guidelines for institution events.

5.10. Does your <u>institution</u> have programs and initiatives to assist with making lab spaces more environmentally sustainable?

Yes, the institution has **programs** and **initiatives** to assist with making lab spaces more environmentally sustainable. (2 points)

There are **guidelines** on how to make lab spaces more environmentally sustainable, but not programs or initiatives. (1 point)

There are **no** efforts at the institution to make lab spaces more sustainable. (0 points)

Score Assigned:

At Hacettepe University Faculty of Pharmacy, green chemistry applications are being studied within the Department of Analytical Chemistry

(<u>https://farmaanalitik.hacettepe.edu.tr/tr/calisma\_alanlari4</u>). These studies have been implemented to reduce not only the chemical methods used in qualitative and quantitative analyses to protect nature but also the amount of chemicals used.

2

5.11. Does your institution's endowment portfolio investments include fossil-fuel companies?

The institution is **entirely divested** from fossil fuels **and** has made a **commitment to reinvest divested funds** into renewable energy companies or renewable energy campus initiatives. (4 points)

The institution is entirely divested from fossil fuels. (3 points)

The institution has **partially divested** from fossil fuel companies **or** has made a **commitment to fully divest**, but **currently** still has fossil fuel investments. (2 points)

The institution has **not divested** from fossil-fuel companies, but faculty and/or students are **conducting organised advocacy** for divestment. (1 point)

Yes, the institution has investments with fossil-fuel companies and there have been **no efforts** to change that. (0 points)

Score Assigned:

0

Score explanation:

There is no information available on this topic. No one working or studying at Hacettepe University is engaged in any activity related to this matter.

Section Total (10 out of 32)

31,25%

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### Grading

#### **Section Overview**

This section focuses on the grading of the report card. The institution received a grade for each of the individual sections as well as an overall institutional grade. Section point totals were tallied, divided by the total points available for the section, and converted to a percentage. The overall institutional grade is a weighted average of the section grades, with curriculum receiving a higher weight owing to its larger number of metrics. Letter grades for each section and the institution overall were then assigned according to the table below.

Letter Grade*	Percentage	
А	80% - 100%	
В	60% - 79%	
С	40% - 59%	
D	20% - 39%	
F	0% - 19%	

\*Within each grade bracket, a score in the top 5% ( $_5$  to $_9$ %), receives a "+", and a score in the bottom 5% ( $_0$  - 4%) receives a "--". For example, a percentage score of 78% would be a B+.

#### Planetary Health Grades for the Hacettepe University Faculty of Pharmacy

The following table presents the individual section grades and overall institutional grade for the Hacettepe University Faculty of Pharmacy on this pharmacy-school-specific Planetary Health Report Card.

Section	Raw Score %	Letter Grade
Planetary Health Curriculum (30%)	$(36/66) \ge 100 = 54,54\%$	C +
Interdisciplinary Research (17.5%)	(13/17) x 100 = 76,47%	B+
Community Outreach and Advocacy (17.5%)	(9/14) x 100 = 64,29%	В-
Support for Student-led Planetary Health Initiatives (17.5%)	(5/15) x 100= 33,3%	D
Campus Sustainability (17.5%)	(10/32) x 100 = 31,25%	D
Institutional Grade tamam	(54,54x0.3 + 76,47x0.175 + 64,29x0.175 + 33,3x0.175 + 31,25x0.175) = 52,27%	С

### **Report Card Trends**

#### **Section Overview**

This graph demonstrates trends in overall and section grades for the years in which Hacettepe University Faculty of Pharmacy has participated in the Planetary Health Report Card initiative. Please note that due to standardisation of sections 2-5 across disciplines, now applying to a whole institution as opposed to an individual school, these scores are artificially inflated.



### Planetary Health Report Card Trends for Hacettepe University Faculty of Pharmacy

Academic Year