



Planetary Health Report Card (Dentistry):

University of Manchester



The University of Manchester

2024-2025 Contributing Team:

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Summary of Findings

| | |
|---|-----------|
| Overall Grade | B |
| Curriculum | D+ |
| <ul style="list-style-type: none"> The University of Manchester Dental school addresses some aspects of planetary health within some of the years of the degree. However, it lacks a more in depth discussion about important topics about sustainable dentistry. Recommendations: As prevention-based dentistry is a key aspect to the course, there should be an in-depth discussion about its impact to the environment and not just to patient health. | |
| Interdisciplinary Research | A |
| <ul style="list-style-type: none"> The University of Manchester advances planetary health through research, public engagement, and interdisciplinary collaboration via Sustainable Futures. It hosts symposia, seminars, and climate action events and recently joined the Planetary Health Alliance. The involvement of affected communities in research decision-making processes remains uncertain. Recommendations: The University should implement a process in which affected communities have decision-making power over planetary health research. Additionally, the dental school would benefit from researchers with a primary focus on planetary health and from joining a planetary health/ESH organization. | |
| Community Outreach and Advocacy | B+ |
| <ul style="list-style-type: none"> The University of Manchester has meaningful collaborations with external community organisations, and hosts community-facing events and courses about planetary health annually. However, its affiliated Dental Teaching Hospital does not offer educational materials about this topic for patients to refer to. Furthermore, information about planetary health needs to be regularly-circulated around the University. Recommendations: A section dedicated to environmental sustainability should be added in the University-wide and dental school-wide e-newsletters; for the latter, additional focus should be placed on sustainable healthcare. Educational resources, such as posters and leaflets, about (1) the impact of climate change on health and (2) environmental health exposures must be developed for patients. | |
| Support for Student-Led Initiatives | B |
| <ul style="list-style-type: none"> The University of Manchester, Students Union and Dental School support student groups interested in research, volunteering opportunities, engagement and project organisation within planetary health. With the Students Union supporting to fund planetary health related projects and the Division of Dentistry pioneering faculty and student co-produced projects within the University. Recommendations: There is a need for further co-curricular planetary health programs; more obvious access routes to funding for students and student representation within the Dental Division and wider University. | |
| Campus Sustainability | A- |
| <ul style="list-style-type: none"> The University of Manchester prides itself on being a leader in the future of sustainability. With action plans and targets in place to go greener through the new development plans and investments in renewable energy sources, the university as a whole boasts an environmentally-friendly campus. Recommendation: Being a profession known for its not so environmentally friendly practices, there are a multitude of areas which would benefit from further consideration, such as the food available, and the high use of plastic in skill labs. | |

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 health professional 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 health professional training. It is imperative that we hold our institutions accountable for educating health professional 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) 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.
- **Sustainable Oral Healthcare:** As adopted at the FDI World Dental Federation, in its Sustainability in Dentistry Statement (2017), sustainable oral healthcare is the provision of equitable, ethical, high-quality, inclusive and safe care with appropriate, effective and efficient use of resources. Through this, the healthcare opportunities of current and future generations are respected and protected by actively minimising negative environmental impacts. (*Martin, N., Mulligan, S., Shellard, I.J. and Hatton, P.V., 2022. Consensus on Environmentally Sustainable Oral Healthcare: A Joint Stakeholder Statement. Pp. 7–10. York: White Rose University Press. DOI: <https://doi.org/10.22599/OralHealth.c>. CC BY 4.0*)
- **Environmental Sustainability in Dentistry (ESD).** Learning outcomes for Environmental Sustainability in Dentistry (ESD) have been proposed by Joury et al. (2021) based on a review of the literature and adaptation of current learning outcomes in medical education:
 1. Describe concepts and definitions of climate change, carbon footprint and sustainability
 2. Discuss the importance of environmental sustainability for the health of patients
 3. Discuss the carbon hotspots of dentistry and how these can be modified
 4. Evaluate the overall environmental impact of clinical dentistry and how this can be improved through innovation.
 5. Appraise how future healthcare professionals can help shape a sustainable healthcare system, and the knowledge and skills (such as leadership), change management and co-production that they will require.
 6. Evaluate current literature and participate in research on sustainability in dentistry.
- **Dentistry School/Department vs. Institution:** When “dentistry school” is specified in the

report card, this only refers to curriculum and resources offered by the School/department of dental medicine 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 dental students, no matter where in the institution the resource comes from or if it is specifically targeted for dental students, can meet this metric.

- **Environmental history:** 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 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 delivered 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).
- **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.

- **Extractivism:** 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
- **Marginalised 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 Literature Review by Metric 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

Section Overview: *This section evaluates the integration of relevant planetary health topics into the dental school curriculum. Today's students will be on the frontlines of tackling the health effects of climate and other environmental changes. Therefore, it is critical that students are trained to understand the health effects of these changes, as well as planetary health issues and principles more broadly. Topics like the changing geography of vector-borne diseases, the health consequences of air pollution, environmental health inequities, and disaster response principles must be part of every dental school's core curriculum.*

Curriculum: General

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| 1.1. Did your <u>dental school</u> offer elective courses (student selected modules) to engage students in Education for Sustainable Healthcare (ESH) / Environmental Sustainability in Dentistry (ESD) or Planetary Health in the last year? | |
| Yes, the dental school has offered more than one elective whose primary focus is ESH/ESD/planetary health in the past year. (3 points) | |
| Yes, the dental school has offered one elective whose primary focus is ESH/ESD/planetary health in the past year. (2 points) | |
| The dental school does not have any electives whose primary focus is ESH/ESD/planetary health, but there are one or more electives that include a lecture on planetary health. (1 points) | |
| No, the dental school has not offered any electives on planetary health or electives that include ESH/ESD/planetary health topics in the past year. (0 points) | |
| Score Assigned: | 0 |
| <i>Score explanation:</i> <i>The dental school does not offer any elective courses that engage students in Education for Sustainable Healthcare (ESH) / Environmental Sustainability in Dentistry (ESD) or Planetary Health in the last year.</i> | |

Curriculum: Environmental Threats to the Planet

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|---|---|
| 1.2. Does your <u>dental school</u> address the concept of climate change, its causes and its impacts on humankind and biodiversity? | |
| 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 or other learning experiences (1 point) | |
| This topic was not covered. (0 points) | |
| Score Assigned: | 0 |

Score explanation:

Currently, there is no acknowledgement of the concept of climate change, its causes and its impacts on humankind and biodiversity within the dental school curriculum.

1.3. Does your dental school address the concept of pollution, its causes and its impacts on humankind and biodiversity?

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** or **other learning experiences** (1 point)

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

Score Assigned:

1

Score explanation:

The dental school covers the topic through discussing the impact that restorative dental materials have on the environment and its ecosystems.

- *Other than these specific examples, the dental school does not provide a generalised teaching about the concepts of pollution, its causes and its impact on humankind and biodiversity. However, there are other learning experiences that provide opportunities to learn about these concepts through the sustainability challenge which is available to first year dental students on Blackboard - which is the University of Manchester electronic portal that provided resources for students.*

1.4. Does your dental school curriculum address environmental citizenship, the impact of human choices and current and emerging environmental actions?

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** or **other learning experiences** (1 point)

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

Score Assigned:

1

Score explanation:

The concepts of environmental citizenship, the impact of human choices and current and emerging environmental actions are not specifically addressed by the dental school.

Although the dental school does not directly address the concepts mentioned above, there are opportunities for dental students to engage in environmental citizenship, the impact of human choices and current and emerging environmental actions through other learning experiences. This includes the sustainability challenge which is available to first year dental students on Blackboard.

Curriculum: Health Effects of Climate Change

1.5. Does your dental school curriculum address the impacts of climate change, air pollution and extreme weather events (extreme heat) on individuals' general health?

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** or **other learning experiences** (1 point)

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

Score Assigned:

1

Score explanation:

There is very limited referencing to the impact of climate change, air pollution and extreme weather events (extreme heat) on an individual's general health.

The impact of climate change, air pollution and extreme weather events (extreme heat) on an individual's general health are not explicitly discussed within the dental school curriculum. An example of the limited referencing to the subject, is the listing of air pollution as a contributor to respiratory airway disease. In this case, as the topic of air pollution is not discussed any further than this.

1.6. Does your dental school curriculum explore potential links or associations between oral health outcomes 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** or **other learning experiences** (1 point)

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

Score Assigned:

0

Score explanation:

The dental school curriculum does not explore potential links or associations between oral health outcomes and climate change.

1.7. Does your dental school curriculum address the impact of climate change on the changing patterns of infectious diseases?

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

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| This topic was briefly covered in the core curriculum. (2 points) | |
| This topic was covered in elective coursework or other learning experiences (1 point) | |
| This topic was not covered. (0 points) | |
| Score Assigned: | 0 |
| <i>Score explanation:</i> <i>The dental school curriculum does not address the impact of climate change on the changing patterns of infectious diseases.</i> | |

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|---|---|
| 1.8. Does your <u>dental school</u> curriculum address the impact of anthropogenic and/or industry-related environmental toxins on <u>human health</u>? | |
| 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 or other learning experiences (1 point) | |
| This topic was not covered. (0 points) | |
| Score Assigned: | 3 |
| <i>Score explanation:</i> <i>The dental school curriculum discusses specific examples within the field of dentistry on how anthropogenic and/or industry-related environmental toxins affect human health.</i> <ul style="list-style-type: none"> - <i>As part of the core curriculum, the dental school elaborates about the potential impact of mercury from amalgam restorations on human health. Although the teaching highlights that there is limited evidence to suggest that bound mercury in amalgam restorations have harmful implications to human health, it also explores potential exposures to free mercury during placement and removal of amalgam restorations. Furthermore, the teaching acknowledged the large-scale mercury poisoning from the Minamata Bay incident and the subsequent convention to promote the phasing out of mercury-based products including dental amalgam restoration by many countries.</i> - <i>In our second year of teaching, multiple lectures on dental restorative materials are provided as part of the core curriculum. The lecture on amalgam restorations discusses the phasing out of these restoration types and provides explanations about the impact that mercury from this material can have on air, land and water pollution. A reference image from the “Lessons learnt from countries phasing down dental amalgam use” by UNEP (2016) illustrates the impact of mercury on various environmental ecosystems.</i> - <i>Furthermore, the lecture on composite restorations briefly discussed the concerns about the effect of nanocomposites on our environment.</i> - <i>Another example is the teaching of oral presentations of heavy metal poisoning seen in patients who have been chronically exposed in their living or working environments. Although this example was not explored any further, it highlighted the impact of anthropogenic and/or industry related environmental toxins on human health.</i> | |

1.9. Does your dental school curriculum address the outsized impact of climate change, pollution & anthropogenic environmental toxins on marginalised populations such as those with low SES, women, communities of colour, Indigenous communities, children, homeless populations, and older adults?

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** or **other learning experiences** (1 point)

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

Score Assigned:

0

Score explanation:

The dental school curriculum does not address the outsized impact of climate change, pollution, and anthropogenic environmental toxins on marginalised populations such as those with low SES, women, communities of colour, Indigenous communities, children, homeless populations, and older adults.

Curriculum: Sustainability

1.10. Does your dental school curriculum address the concept of environmental sustainability?

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** or **other learning experiences** (1 point)

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

Score Assigned:

2

Score explanation:

When reviewing the content that is available to dental students on the online learning platform Blackboard, a folder on environmental sustainability contained links to the following articles:

- *“Environmentally sustainable dentistry: a brief introduction to sustainable concepts within the dental practice” – Duane et al. BDJ (2019)*
- *“Environmental sustainability – What is the BDA doing to help?”*
- *“Sustainability in Dentistry – 2030 vision by the World Dental Federation*

These articles briefly explored the concepts of environmental sustainability within dentistry. Furthermore, the folder contains lecture slides from a talk given by Dr Vitalia Kinakh on “Environmental sustainability (ES) and Social Responsibility (SR) in dentistry”. The lecture briefly discusses different ways of promoting environmental sustainability within the dental practice and encourages dental students to pledge ways in which they will take action to implement this practice. From other experiences, the Manchester Foundation Trust advocates a gloves-off campaign to promote a reduction in improper use of PPE which ultimately reduces waste and improves

cost-efficiency. Furthermore, dental students are taught through online induction modules and in-person training about the proper waste disposal methods on clinic to ensure that different waste forms are placed in the correct bins. This helps to maximise efficiency in waste disposal by directing greater volumes of waste away from landfills. It also helps ensure that amalgam waste is appropriately disposed of to prevent release of mercury into ecosystems.

1.11. Does your dental school curriculum address the concept & importance of sustainable healthcare?

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** or **other learning experiences** (1 point)

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

Score Assigned:

3

Score explanation:

When reviewing the content that is available to dental students on the online learning platform Blackboard, a folder on environmental sustainability contained links to the following articles:

- *“Environmentally sustainable dentistry: a brief introduction to sustainable concepts within the dental practice” – Duane et al. BDJ (2019)*
- *“Environmental sustainability – What is the BDA doing to help?”*
- *“Sustainability in Dentistry – 2030 vision by the World Dental Federation*

These articles explored the concept and importance of sustainable healthcare in a dental setting. Furthermore, the folder contains lecture slides from a talk given by Dr Vitalia Kinakh on “Environmental sustainability (ES) and Social Responsibility (SR) in dentistry”. This lecture briefly explores the concept and importance of sustainable healthcare.

Another example specific to dentistry, is the focus on antimicrobial stewardship to reduce the development of antimicrobial resistance. These concepts are introduced in 1st year through an EBL case titled ‘Mary’s swollen face’ which discusses the appropriate use of antibiotics in dentistry. Furthermore, antibiotic stewardships lectures are delivered across multiple years by Professor Riina Richardson which highlight the use and misuse of antibiotics in healthcare settings.

Additionally, an [antibiotic stewardship elective module](#) is promoted by Dr Wendy Thompson to 3rd year dental students as part of our training on sustainable use of antibiotics.

These examples highlight some of the ways in which the dental school curriculum covers the topic of sustainable healthcare in their curriculum.

1.12. Does your dental 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)

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| This topic was covered in elective coursework or other learning experiences (1 point) | |
| This topic was not covered. (0 points) | |
| Score Assigned: | 1 |
| <p><i>Score explanation:</i> From the sustainability folder on Blackboard, one article discussed the carbon footprint of dental healthcare systems and highlighted that “In 2014-2015, the carbon footprint of dentistry was calculated to be 675 kilo tonnes carbon dioxide equivalents (CO₂e) with 65.2% related to travel, 15.3% from energy and 19% from procurement”. The article proceeds to explore the carbon footprint of dentistry and make recommendations based on their findings. Since this information does not come from the dental school’s core curriculum, a score of 1 point is awarded to this criterion.</p> | |

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| 1.13. Does your <u>dental school</u> curriculum address the concept & importance of <u>sustainable oral healthcare</u>? | |
| 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 or other learning experiences (1 point) | |
| This topic was not covered. (0 points) | |
| Score Assigned: | 3 |
| <p><i>Score explanation:</i> When reviewing the content that is available to dental students on the online learning platform Blackboard, a folder on environmental sustainability contained links to the following articles:</p> <ul style="list-style-type: none"> • “Environmentally sustainable dentistry: a brief introduction to sustainable concepts within the dental practice” – Duane et al. BDJ (2019) • “Environmental sustainability – What is the BDA doing to help?” • “Sustainability in Dentistry – 2030 vision by the World Dental Federation <p>These articles explored the concept and importance of sustainable healthcare in a dental setting. Furthermore, the folder contains lecture slides from a talk given by Dr Vitalia Kinakh on “Environmental sustainability (ES) and Social Responsibility (SR) in dentistry”. This lecture briefly explores the concept and importance of sustainable healthcare.</p> <p>Another example specific to dentistry, is the focus on antimicrobial stewardship to reduce the development of antimicrobial resistance and preserve the effectiveness of antimicrobials for future generations. These concepts are introduced in 1st year through an EBL case titled ‘Mary’s swollen face’ which discusses the appropriate use of antibiotics in dentistry. Furthermore, antibiotic stewardships lectures are delivered across multiple years by Professor Riina Richardson which highlight the use and misuse of antibiotics in healthcare settings. Additionally, an antibiotic stewardship elective module is promoted by Dr Wendy Thompson to 3rd year dental students as part of our training on sustainable use of antibiotics.</p> | |

A further example is the heavy emphasis on preventative dentistry to reduce the burden of oral disease. There is a lot of evidence-based promotion of preventative strategies, especially through the use of the “Delivering Better Oral Health toolkit” by NHS England. Although the benefits of prevention have never been explicitly linked back towards planetary health, environmental sustainability and sustainable healthcare, these outcomes can be anticipated from the given learning.

1.14. Does your dental school curriculum address the environmental impact of oral healthcare systems and interventions?

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** or **other learning experiences** (1 point)

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

Score Assigned:

3

Score explanation:

As part of the core curriculum, the dental school elaborates about the potential impact of mercury from amalgam restorations on human health and the environment. The teaching acknowledged the large-scale mercury poisoning from the Minamata Bay incident and the subsequent convention to promote the phasing out of mercury-based products including dental amalgam restoration by many countries. Furthermore, the lecture on composite restorations briefly discussed the concerns about the effect of nanocomposites on our environment. However, this was not elaborated any further.

Additionally, dental students are also made aware that nitrous oxide pollution from inhalation sedation practices negatively impacts the environment. However, this subject is not explored any further than an elaboration of the methods used to prevent release of nitrous oxide into the environment.

Furthermore, when reviewing the content that is available to dental students on the online learning platform Blackboard, a folder on environmental sustainability contained links to the following articles:

- *“Environmentally sustainable dentistry: a brief introduction to sustainable concepts within the dental practice” – Duane et al. BDJ (2019)*
- *“Environmental sustainability – What is the BDA doing to help?”*
- *“Sustainability in Dentistry – 2030 vision by the World Dental Federation*

These articles explored the concept and importance of sustainable healthcare in a dental setting. One article discussed the carbon footprint of dental healthcare systems and highlighted that “In 2014-2015, the carbon footprint of dentistry was calculated to be 675 kilo tonnes carbon dioxide equivalents (CO₂e) with 65.2% related to travel, 15.3% from energy and 19% from procurement”. The article proceeds to explore the carbon footprint of dentistry and make recommendations based on their findings.

From other experiences, the Manchester Foundation Trust advocates a gloves-off campaign to promote a reduction in improper use of PPE which ultimately reduces waste and improves cost-efficiency.

1.15. Does your dental school curriculum address the importance of measuring the environmental impact of oral healthcare to identify & reduce contributing factors?

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** or **other learning experiences** (1 point)

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

Score Assigned:

1

Score explanation:

From the sustainability folder on Blackboard, one article discussed the carbon footprint of dental healthcare systems and highlighted that “In 2014-2015, the carbon footprint of dentistry was calculated to be 675 kilo tonnes carbon dioxide equivalents (CO2e) with 65.2% related to travel, 15.3% from energy and 19% from procurement”. The article proceeds to explore the carbon footprint of dentistry and make recommendations based on their findings. This article indirectly highlights to dental students the importance of measuring the environmental impact of oral healthcare to identify and reduce contributing factors.

Curriculum: Sustainability through Good Oral Healthcare

1.16. Does your dental school curriculum address the importance of promotion of good oral health and preventive care in the delivery of sustainable oral healthcare?

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** or **other learning experiences** (1 point)

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

Score Assigned:

0

Score explanation:

From the early years of teaching, the dental school places emphasis on the importance of preventative dentistry over restorative dentistry in reducing the global burden of oral disease. This teaching is delivered in early years through the “Introduction to Dentistry” series of teachings, which covers the concepts of dental caries and periodontal diseases and focuses on promoting prevention of these two diseases. Furthermore, we have had multiple lectures across the years which equally emphasises the importance of prevention in dental disease. This teaching also introduces the concept of “The Restorative Cycle” which elaborates the lifelong cycle of treatment that a patient with dental caries undergoes and emphasises the importance of prevention in the first place. The dental school also advocates for evidence-based interventions and highlights the

“Delivering Better Oral Health toolkit” by NHS England as a fundamental and key foundation to base our practice around. These practices help dental students appreciate the significance of good oral health care and preventative care in the delivery of sustainable oral healthcare.

1.17. Does your dental school curriculum address the environmental significance of delivery of high-quality (operative care) oral healthcare?

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** or **other learning experiences** (1 point)

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

Score Assigned:

0

Score explanation:

The dental school places a huge emphasis on evidence-based interventions and the curriculum is designed to educate dental students on the provision of holistic care for patients. Where available, clinical practice is based around good quality research which includes, for example, systematic reviews and meta-analyses by Cochrane (which is a Manchester-based group). This helps guide high quality oral healthcare which helps reduce the need for repeated treatment in patients with failed treatment outcomes. Furthermore, the concepts of good treatment planning are explored through EBL cases and lectures. These discussions help dental students to design treatment plans using good principles that prevents failure of treatment and the need for repeat treatment. The examples above illustrate that achieving high quality oral healthcare is key at the dental school, however, this has never been explicitly linked back to the positive environmental impact that it yields.

1.18. Does your dental school curriculum address the environmental significance of ‘integrated oral care’?

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** or **other learning experiences** (1 point)

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

Score Assigned:

0

Score explanation:

As part of the core curriculum, we receive training to approach patient care holistically. Dental students are taught to build medical, dental and social contexts of a patient prior to providing any dental care. These foundations help dental students work closely with patients and other healthcare staff to tailor treatment specifically to the needs of each patient. As a result, this promotes high quality and long-lasting patient care, reducing the inefficiencies of care and minimising the

environmental burden from repeated care. However, this association has not been explicitly acknowledged and highlighted by the dental school curriculum.

1.19. Does your dental school curriculum address the importance, environmental & oral health outcomes of individual & dental team's ownership of care?

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** or **other learning experiences** (1 point)

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

Score Assigned:

1

Score explanation:

The University of Manchester dental school addresses this through antibiotic stewardship. Students are informed of the importance of their role in antibiotic prescribing and its impact on both oral health outcomes and broader environmental health. Dr Wendy Thompson is the main member of staff that discusses this topic and the importance of our role.

In addition, effective clinical governance is continuously assessed by the dental school by final year students as they are required to perform an audit which has been done annually.

1.20. In training for patient encounters, does your dental school's curriculum introduce strategies to have conversations with patients about the health effects of climate change?

Yes, there are strategies introduced for having conversations with patients about climate change in the **core** curriculum. (2 points)

Yes, there are strategies introduced for having conversations with patients about climate change in **elective** coursework. (1 points)

No, there are **no** strategies introduced for having conversations with patients about climate change. (0 points)

Score Assigned:

0

Score explanation:

The dental school curriculum does not introduce strategies to have conversations with patients about the health effects of climate change.

Curriculum: Administrative Support for Planetary Health

1.21. Is your dental school currently in the process of implementing or improving Education for Sustainable Healthcare (ESH)/Environmental Sustainability in Dentistry (ESD)/Planetary Health education?

| | |
|--|---|
| Yes, the dental school is currently in the process of making major improvements to ESH/ESD/planetary health education. (4 points) | |
| Yes, the dental school is currently in the process of making minor improvements to ESH/ESD/planetary health education. (2 points) | |
| No, there are no improvements to Planetary Health education in progress. (0 points) | |
| Score Assigned: | 0 |
| <i>Score explanation:</i> <i>The dental school is not in the process of implementing or improving Education for Sustainable Healthcare (ESH) / Environmental Sustainability in Dentistry (ESD) / Planetary Health Education</i> | |

| | |
|--|---|
| 1.22. How well are the aforementioned planetary health/Education for Sustainable Healthcare/Environmental Sustainability in Dentistry (ESD) topics integrated longitudinally into the <u>core</u> curriculum? | |
| Planetary health/ESH/ESD topics are well integrated into the core dental school curriculum. (6 points) | |
| Some planetary health/ESH/ESD topics are appropriately integrated into the core dental student curriculum. (4 points) | |
| Planetary health/ESH/ESD is not integrated and is primarily addressed in (a) standalone lecture(s) . (2 points) | |
| There is minimal/no education for sustainable healthcare. (0 points) | |
| Score Assigned: | 4 |
| <i>Score explanation:</i> <i>There are some teachings of Sustainable Healthcare/ sustainable dentistry through a lecture in second year on Amalgam and more specifically its role on the environments.</i> <i>Similarly, Dr Kinakh's lecture in third year on sustainable dentistry that discusses the role of single use plastics conveys that the teaching is being integrated throughout the year.</i> <i>Finally for final year students, they are required to perform a clinical audit of which some of the topics are related to sustainable dentistry such as the audit topic of 'Teeth/Amalgam waste disposal.'</i> | |

| | |
|--|--|
| 1.23. Does your <u>dental school</u> appoint a member of faculty to specifically oversee and take responsibility for the incorporation of planetary health and sustainable healthcare as a theme throughout the course? | |
| Yes, the dental school has a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare. (1 point) | |

No, the **dental school** does **not** have a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare. (0 points)

Score Assigned:

1

Score explanation:

Dr Vitalia Kinakh has been appointed as the lead for environmental sustainability of the dental school and is responsible for overseeing curricular integration of planetary health and sustainable healthcare.

Section Total (25 out of 70)

35.71%

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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 institution?

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)

Score Assigned:

3

Score explanation:

The institution conducts extensive research on planetary health topics and healthcare sustainability across numerous institutes and departments. For example, [Dr. Christina Picken](#) works on environmentally sustainable polymers with applications in healthcare at the [Sustainable Materials Innovation Hub](#).

Within the Division of Dentistry, there are faculty members who are conducting research related to planetary health, for example Dr Vitalia Kinakh (sustainability awareness in dentistry), Dr Wendy Thompson (promoting antibiotic stewardship) and Dr Marcia Borba (digital dentistry).

2.2. Is there a dedicated department or institute for interdisciplinary planetary health research at your institution?

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: | 3 |
| <p><i>Score explanation:</i></p> <p><i>Sustainable Futures is a research platform at The University of Manchester which drives interdisciplinary research on sustainability challenges, integrating expertise from science, engineering, social sciences, and policy. It collaborates with several institutes such as the (Manchester Environmental Research Institute (MERI)) and the (Tyndall Centre for Climate Change Research) . Key research areas include climate resilience, biodiversity, pollution, and sustainable resource management. The initiative fosters innovation through partnerships, aiming to translate research into impactful policy and practice.</i></p> | |

| | |
|---|---|
| 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 institution? | |
| 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: | 2 |
| <p><i>Score explanation:</i></p> <p><i>Through their social responsibility programme , the university embeds public engagement into all aspects of their work including research - involving the public in their research activity , as outlined by the public engagement framework. Initiatives like the Manchester Festival of Climate Action and Greater Manchester Universities Citizens panel provide opportunities for dialogue and collaborations between researchers and the community.</i></p> <p><i>Also, the Faculty of Biology, Medicine, and Health promotes patient and public involvement (PPIE) in research and teaching. Their initiatives include a PPIE forum, engagement events, and resources for researchers and staff to integrate public perspectives into their work.</i></p> <p><i>However, it is unclear whether the community members have any decision-making powers in these cases.</i></p> | |

2.4. Does your institution 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:

3

Score explanation:

Sustainable Futures has a [website](#) that provides a central hub for research, events, and collaborations related to sustainability at The University of Manchester. It includes sections on key challenge areas (such as health and net-zero), research institutes and case studies, biographies of leaders, a news section, and an events page. There are also links to funding opportunities.

2.5. Has your institution 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 / sustainable 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:

4

Score explanation:

The University has hosted various conferences and symposia on topics related to planetary health in the past year. For example:

'The University of Manchester's Environment and Health Symposium' (hosted 13 June 2024) - [A symposium focused on the intersection of health and the environment, organised by the Manchester Environmental Research Institute and Sustainable Futures](#)

Sustainable futures has a monthly seminar series "[showcasing the cutting-edge interdisciplinary research into truly sustainable solutions taking place at The University of Manchester](#)"

Sustainable futures also host an annual conference; the most recent one took place on December 2024 and had the theme '[Celebrating Interdisciplinary Sustainability Research](#)'.

2.6. Is your institution 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:

1

Score explanation:

The School of Health Sciences, University of Manchester [is currently a member](#) of the [Planetary Health Alliance \(PHA\)](#) since October 2024.

Section Total (16 out of 17)

94.12%

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Community Outreach and Advocacy

Section Overview: *This section evaluates dental 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 participated in community focused events relating to planetary health. (1 point) | |
| No, there is no such meaningful community partnership. (0 points) | |
| Score Assigned: | 3 |
| <p><i>Score explanation:</i></p> <ul style="list-style-type: none"> • <i>The institution itself collaborates and partners with a series of community organisations, to aid in the promotion of planetary and environmental health:</i> <ul style="list-style-type: none"> ➤ Manchester Climate Change Agency - a registered Community Interest Company responsible for overseeing and championing climate change action for the city. ➤ Open Kitchen Manchester - Manchester's leading sustainable catering company for meetings, celebrations and events. ➤ Manchester Environmental Education Network - an independent charity focussed on promoting education about the environment and sustainability through running projects and hosting events. ➤ City of Trees - an independent charity focused on planting, taking care of, and promoting a culture of trees across the Greater Manchester region. • <i>The Sustainable Consumption Institute (SCI) has a subsection within the University of Manchester's official webpage which clearly explains and lists the various organisations the SCI and the University as a whole partners with</i> • <i>On the University of Manchester's Volunteer Hub, a variety of volunteering opportunities with community organisations, related to the promotion of planetary health and climate change, are advertised for existing students to apply for and partake in if interested. The following link can be used to search for such opportunities.</i> | |

- *Within the Division of Dentistry, there is no evidence of meaningful partnerships between the dental school and external community organisations to address and promote planetary and environmental health.*

3.2. Does your **institution** 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** have not offered such community-facing courses or events. (0 points)

Score Assigned:

3

Score explanation:

- *The institution hosts several events/discussions throughout the year for faculty and members of the public to attend, centred around the topics of environmental sustainability and planetary health. Listings can be found on the following web page: [Social Responsibility | Events > Social Responsibility](#)*
- *Sustainable Futures at the University of Manchester host a seminar series, which members of the public are free to attend and view, which discuss the latest interdisciplinary research surrounding sustainability taking place within the University. Sustainable Futures also hosts a guest lecture series entitled 'The Albatross Lectures' which members of the public, as well University staff and students, are able to attend; annually, a guest lecturer will deliver an engaging presentation on a specific topic within environmental sustainability.*
- *Annually, the University staff, students and external community members will join together for Sustainability Action Month and host a plethora of activities, workshops and talks across four weeks.*
- *Additionally, the Manchester Museum - which is owned by the University of Manchester - currently has an exhibition entitled 'Wild', which is wholly focussed on climate change and its effects on nature and biodiversity. This exhibition is running until 1st June 2025, it is free to attend, and available to be viewed by internals and externals to the University.*
- *Within the Division of Dentistry, no evidence has been found showing that community-facing courses/events regarding planetary health have been offered by the dental school.*

3.3. Does your **institution** 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: | 1 |
| <p><i>Score explanation:</i></p> <ul style="list-style-type: none"> • <i>The Associate Dean for Environmental Sustainability within the Faculty of Biology, Medicine and Health (FBMH) produces a newsletter entitled ‘The Environmental Sustainability (ES) Good Newsletter’ which summarises the University’s plans and achievements related to environmental sustainability and climate change. In order to receive these newsletters regularly, students must opt-in/sign up for them.</i> • <i>Sustainable Futures also produces regular newsletters about climate change and sustainability; however, as with the previously mentioned newsletter, individuals must sign up for it in order to receive these.</i> • <i>A weekly e-newsletter is sent out to existing students at the University of Manchester; however, regular coverage of issues related to planetary health and/or sustainable healthcare is not provided.</i> • <i>Within the dental school, a weekly e-newsletter is sent out to dental undergraduates; however, regular coverage of issues related to planetary health and/or sustainable healthcare is not provided.</i> | |

| | |
|---|---|
| 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 providers. (1 point) | |
| There are no such accessible courses for post-graduate providers. (0 points) | |
| Score Assigned: | 2 |
| <i>Score explanation:</i> | |

- The University of Manchester offers a [variety of CPD courses](#) for individuals post-graduation to undertake. Specifically, the University offers a CPD course with its primary focus being planetary health and it is entitled 'Climate Change and Health'.
- An online course entitled 'For a Greener NHS Delivering Net-Zero at LTHT' is offered by the Lancashire Teaching Hospitals on their e-learning website.
- Via their e-Learning Hub, University of Manchester Foundation Trust staff members can complete a programme entitled '[Environmentally Sustainable Healthcare](#)', which covers the following 3 topics: (1) 'Building a Net Zero NHS', (2) Environmental Sustainability in Quality Improvement', (3) Environmental Sustainability in Dentistry.
- Via their e-Learning Hub, University of Manchester Foundation Trust staff members can also complete a programme entitled '[Carbon Literacy for Healthcare](#)', which is in partnership with the Carbon Literacy Project. Upon completion of the programme, you may attain the title of 'Carbon Literate'.

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

Yes, the **institution** 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:

1

Score explanation:

- The University of Manchester and its affiliated Dental Teaching hospital does not currently offer and/or provide accessible educational materials for patients about environmental health exposures.
- However, the Lancashire Teaching Hospitals have posted information for patients to access and read regarding smoke exposure and its effects in some paediatric clinics.
- The University of Manchester Foundation Trust have held few campaigns that have sustainability co-benefits, such as literature of inhaler technique, and patients bringing their own drugs from home to reduce waste.

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

Yes, the **institution** 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: | 1 |
| <p><i>Score explanation:</i></p> <ul style="list-style-type: none"> <i>The University of Manchester Dental Teaching hospital does not currently offer and/or provide accessible educational materials for patients about the health impacts of climate change.</i> <i>The Manchester Foundation Trust have published a Green Plan, which outlines how they intend on delivering net-zero carbon to the NHS; the document is accessible to all and free to read online. In it, it is discussed how they hope to reduce carbon dioxide emissions, decrease waste, increase the number of “green” spaces in/around hospitals, as well as enhance the health and wellbeing of patients and professionals in these environments.</i> <i>Wythenshawe Hospital have shared on their website how they hope to improve its campus and become more sustainable; this is available for patients to read about. The impacts of climate change on health are touched on in this document; for example, they describe a low-carbon plate as a well-balanced plate which can benefit the recovery of patients. Another example is to increase the number of “green” spaces on campus as they can support staff and patient wellbeing.</i> | |
| Section Total (11 out of 14) | 78.57% |

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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 **institution** 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, the institution does not offer opportunities or support for sustainability initiatives or QI projects. (0 points)

Score Assigned:

2

Score explanation:

- *Within the Division of Dentistry there is a project centred around environmental sustainability created by the Manchester Paediatric Dentistry Student Society: SCRUB: Super Cool Recycling of Uniforms into Bags, where unused and unusable scrubs are converted and upcycled into toothbrush bags as a creative wellbeing project for students, for the bags to be distributed out in community outreach projects organised by the society such as Dentists in Primary Schools (DiPS) and Helping Infants and Parents to Protect their Oral Health (HIPPOH). The £500 grant was secured by the Social Responsibility Lead within the Division of Dentistry, Dr Vitalia Kinakh from the Associate Dean of Environmental Sustainability Lead, Dr Maggy Fostier.*
- *University Wide there are Student-Led Environmental Sustainability focused initiatives which receive funding from the Students Union.*
- *Additionally, University Wide there is the Social Responsibility Funding Call, which has 5 priorities including environmental sustainability. £6000 was for 'Preparing dental students to lead a socially responsible and sustainable dental and oral health care system' in 2016 and 2017 with Nick Grey and 2018 with Dr Vitalia Kinakh, which delivered events focused around diverse perspectives and adopting eco- friendly practices within dentistry However as of 2024/2025 academic year the Social Responsibility Funding Call is on hiatus with funding for projects being provided on an ad hoc basis to those aware of it.*
- *Within the Students Union there is also the Steve Biko Sustainability Fund with up to £45,000 available in the 2023-2024 academic year to address environmental Sustainable Development Goals (SDGs) to help reduce the SU's environmental impact on the Manchester Community, with each project receiving up to of £1000. In the 2023-2024 academic year Waste Not Want received this grant.*

4.2. Does your institution 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)

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

Score Assigned:

2

Score Explanation:

- *The University of Manchester has the 'University Living Lab' designed to work with external organisations on research initiatives which are inline with the United Nation's Sustainable Development Goals. The research initiatives are developed by students as part of their degree and are supervised by academic experts within the field.*
- *The research projects are co-produced and co-constructed with all parties involved and students can have opportunities to develop research strategies; collect and analyse data, provide case study insights and work towards providing solutions for the external organisations.*
- *Furthermore, within BSc Psychology the 'Support for 1in5' initiative has been introduced which offers platforms for 20% of projects to be involved in tackling environmental issues and make active contributions.*

4.3. Does the institution have a web page 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 institution and/or contact of information of potential mentors.

The institution has a web page 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 web page that features some information on projects and mentors within planetary health and sustainable healthcare within the institution, but it lacks key information. (1 point)

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

Score Assigned:

2

Score explanation: The web page containing all the information above can be found at: [Sustainable Futures | The University of Manchester](#)

- The Sustainable Futures website by the University of Manchester discusses about research institutes dedicated to tackling environmental and societal challenges; events being undertaken at the university; case studies of the interdisciplinary collaborations and discoveries in which there are contact emails for potential mentors.
- The Social Responsibility website also signposts students to volunteering opportunities which can be found at: [Volunteering | The University of Manchester](#)

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

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

Yes, there is a student organisation at my institution 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:

0

Score explanation: Within the Division of Dentistry, the SCRUB project is an environmental sustainability project which receives faculty support.

- Within the Students Union there are 8 student groups/projects dedicated towards planetary health initiatives. Including:
 - Want Not Waste: Student-led zero waste shop which sells dried good, snacks cleaning supplies etc with limited to no packaging
 - Thrift Society: Encouraged swap shops, up-cycling drop in and sustainability in students' wardrobes
 - Closet: Encouraged swap shops, up-cycling drop in and sustainability in students' wardrobes
 - Biko Bikes Sustainability: Bicycle hire scheme to encourage greener travel
 - Incredible, Edible: Grow fruit and vegetables in nearby areas such as Platt Fields Park
 - Solar Car: Society dedicated to design a solar powered car
 - Manchester Paediatric Dentistry Student Society: SCRUBS project; upcycling unusable SCRUBS into toothbrush bags , However it is not an exclusive student club dedicated to health/ sustainability hence score of 0.
 - Botany Society: Growing food at Firs Botanical Gardens
- These groups were contacted regarding the support they received of which 4 responded with 50% of responses saying they received encouragement to undergo these projects and one project stating they receive faculty support.

4.5. Is there a student liaison representing sustainability interests who serves on a department or institutional 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: | 1 |
| Yes, there is a student representative that serves on a department or institutional decision-making council/committee. (1 points) | |
| <p><i>Score explanation: The leads for the University of Manchester Planetary Health Report Card team simultaneously serve as student representatives on the Climate in the Curriculum Committee. This Committee aims to incorporate updated, accurate, and relevant climate topics within the medical curriculum and is currently working towards this goal by evaluating the current curriculum and suitable points for supplementation with planetary health education.</i></p> <p><i>Outside PHRC, after contacting different members of faculty throughout the Schools of Health Science and School of Biology, Medicine and Health, there was no evidence of student representation in the departments.</i></p> | |

| 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) | Score |
|--|--------------|
| 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. | 1 |
| Local volunteer opportunities related to building community resilience to anthropogenic environmental impacts. | 1 |
| Wilderness or outdoors programs (e.g., that organise hiking, backpacking, kayaking, or other outings for students) | 1 |
| <p><i>Score explanation:</i></p> <p><i>a) 0: The Botany Society and Incredible, Edible fall come under this category however they are societies and no co-curricular activities</i></p> <p><i>b) 1: Sustainable futures have ran events summarising their works; University Climate network provides lists and talks of events related to these topics</i></p> <p><i>c) 0: Could not locate information pertaining to this section</i></p> | |

d) 1: University of Manchester runs the Manchester museum which often holds events and exhibitions on the topics of environmental and planetary health that aim to engage with the student population and the wider public.

e) 1: Harriet Bickley created an eco-booklet which includes local volunteering opportunities: display.aspx (Bickley 2024)

f) 1: Manchester Dentistry Student Society and the Refugee Crisis Foundation Society within the Division of Dentistry have organised various hikes.

Section Total (11 out of 15)

73.33%

References

- Bickley, H. (2024). Easy Eco For All. Available at: display.aspx (Accessed 2/1/2025)
- The University of Manchester, Sustainable Futures. Available at: Sustainable Futures | The University of Manchester Accessed (7/12/2025)
- The University of Manchester, Volunteering. Available at: Volunteering | The University of Manchester Accessed (29/01/2025)
- United Nations Development Programme, (2015). Sustainable Development Goals. Available at: Sustainable Development Goals | United Nations Development Programme (Accessed: 2/1/2025)

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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 dental 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 <u>institution</u> 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: | 3 |
| <p><i>Score explanation: The environmental sustainability team of the University of Manchester has many members from multiple disciplines and backgrounds, each concerned with different aspects of sustainability. There are a further five sustainability groups which oversee plans and targets made by the university, and help with the delivery of, and recommend, actions. There are members of the team from the Faculty of Biology, Medicine and Health, with a dedicated staff member for the Dental School leading environmental sustainability in dentistry.</i></p> <p><i>Further information on the environmental sustainability team at the university of Manchester can be found here.</i></p> | |

| 5.2. How ambitious is your <u>institution's</u> 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 does not meet any of the requirements listed above (0 points) |

| | |
|---|---|
| Score Assigned: | 3 |
| <p><i>Score explanation: The environmental sustainability strategy: Our Sustainable Future, is the university's plan that takes into account three core goals; social responsibility, teaching and learning, and research and discovery, with an addition of a zero carbon goal, where the University as a whole has a target of zero direct carbon emissions by 2038, and net zero by 2050 with indirect emissions. The university also joined the UN race to zero for universities and colleges, and has published its yearly progress up to 2022/23, where there has been an overall decrease in emissions by 36%, however progress has slowed since 2020, with only a difference of 0.1% compared to the year of 2021.</i></p> <p><i>The university of Manchester Carbon Action plan can be seen on their website which shows its target for carbon neutrality by 2038.</i></p> | |

| | |
|--|---|
| 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) | |
| Score Assigned: | 3 |
| <p><i>Score explanation: The university of Manchester entered an into a Renewable Energy Guarantees of Origin (REGO) scheme where there was a target to reduce non-renewable energy usage by 10% by 2027, along with a target to go 100% renewable electric energy by the same year. As of a report in July 2023, it was confirmed the university has already reached the 100% renewable energy target, however the target for non-renewable has gone in the wrong direction, being +1.1% higher than the baseline in 2019. The university is having discussions with investment advisors and the property portfolio manager to try and meet the ambition of 2027.</i></p> <p><i>The university's investment portfolio here discusses its energy targets for 2027.</i></p> | |

| |
|---|
| 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 institution'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: | 3 |
| <p><i>Score explanation: There is a plan in place in order to meet specific targets which consists of three phases, phase 1: a number of zero carbon buildings, phase 2; a further 4, with phase 3 buildings yet to be agreed. Works started in 2023, this includes provision of air source heat pumps, new roofing systems, glazing, and internal insulation systems. Audits in 2023, saw a carbon reduction of 40% within the first year of the new builds, and 97% of waste was recycled.</i></p> <p><i>The three phase action plan to retrofit and reduce carbon output of newbuilds can be seen here.</i></p> | |

| | |
|--|---|
| 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) | |
| Score Assigned: | 2 |
| <p><i>Score explanation: The university's sustainable travel initiatives including public transport season tickets and cycle to work schemes to staff, installing 4000 cycle parking spaces, with the main focus on Oxford Road, provides staff and students with environmentally friendly transportation options. There is also plans to update sustainable travel and car parking plans to support a transition to sustainable modes of travel. The university aims to decarbonise fleet vehicles by 2030 and provide electric vehicle charging points for staff, students and visitors.</i></p> <p><i>The university of Manchester discusses its sustainable travel initiatives as part of their environmental sustainability strategy.</i></p> | |

5.6. Does your institution 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 **no** compost or recycling program at the institution. (0 points)

Score Assigned:

2

Score explanation: Via the Environment Act 2021, an aim of 100% of campus buildings will contain a food waste bin, as of autumn 2024, food waste bins were installed in a number of buildings across the university, where students and staff are encouraged to use these for food waste instead of general waste bins. The bags of waste are collected externally and transferred to anaerobic digestion facilities in Warwickshire. The waste can be applied to land as well as electricity from the methane production and used as a fuel. There are recycling bins throughout campus, where a local company collects the majority of the waste office paper and cardboard.

Further information can be found [here](#).

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

Yes, the institution has **adequate** sustainability requirements for food and beverages, including meat-free days or no red-meat, and **is engaged** in efforts to increase food and beverage sustainability. (3 points)

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)

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

Score Assigned:

2

Score explanation: The university offers food produced and processed in such ways that it contributes to the local economy, promotes sustainable livelihoods, avoids damaging the planet, provides social benefits and enhances animal welfare. There are multiple sustainable food initiatives including plastic free sandwich packaging, using local suppliers where possible, and meat-free Mondays for example. However, this is only food in residence and is not specified to be campus wide.

Recommendations:

The university has many sustainable food initiatives, however the dental school itself does not have any initiatives within the only cafeteria available on the premises. The campus as a whole has initiatives but some of these are specified to only to be in residence. Therefore it is recommended that these initiatives are implemented campus wide, and especially taken up by the dental school.

The websites page can be seen [here](#), with further links found on the page.

5.8. Does the institution 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 **no** sustainability guidelines for supply procurement. (0 points)

Score Assigned:

3

Score explanation: Within the University of Manchester, there is a dedicated Central Procurement Office that has developed a NETpositive supplier engagement tool which is designed to support and develop the supply chain as part of an ongoing commitment to include sustainability in the procurement process. The majority of food supplies are appointed under TUCO (The University Caterers Organisation) framework which includes sustainability and recognises commodity choices influence healthy lifestyle.

[This](#) shows the university's external caterer contracts and which parts of the food policy external companies are expected to follow in terms of sustainable 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:

2

Score explanation: Conferences and venues team are committed to sustainability across all operations and has therefore implemented a sustainability policy as part of the university's

environmental sustainability plan. The policy entails three main objectives and priorities for events to adhere to, which are, environmental impact, social responsibility and economic stability.

The university's [policy](#) on events has been around since 2016, and is still followed by all hosted events at on the campus

5.10. Does your institution 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:

2

Score explanation: As part of the [Environmental sustainability strategy](#), the university has initiatives in place, one specific initiative is to require all laboratories to achieve a Laboratory Efficiency Assessment Framework certificate to a minimum of bronze to drive improvements in laboratory efficiency. There is also a 6R protocol to be adopted, which entails reduction of plastics in labs, on campus and at home. Both initiatives are to be implemented by August 2025.

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:

2

Score explanation: [Investment portfolio Climate change report 2023](#), details the university's endowment portfolio where it can be seen here is still reliance on fossil based utilities, therefore suggesting the university is still dependent on fossil fuel companies. According to the endowment portfolio 2023, there is still a big reliance on fossil-based utilities, as there has been, and is expected to be again, a heavy failed transition away from this supply to other renewable resources such as wind and solar. The University of Manchester expects over 150% cumulative return from fossil based utilities alone, and based on this data from the portfolio, the university has updated its allocations to remove fossil based investments and move towards more renewable energy companies which are better positioned for the transition.

Recommendations:

The university is not entirely divested from fossil fuels as of date but has made the move towards greener energy sources. It is recommended the university works towards a goal of being 100% divested from fossil based utilities, and more investment placed in renewable sources.

| |
|------------------------------|
| Section Total (27 out of 32) |
|------------------------------|

| |
|--------|
| 84.38% |
|--------|

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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 |
|---------------|------------|
| A | 80% - 100% |
| B | 60% - 79% |
| C | 40% - 59% |
| D | 20% - 39% |
| F | 0% - 19% |

Planetary Health Grades for the Manchester School of Dentistry

The following table presents the individual section grades and overall institutional grade for the Manchester School of Dental Medicine on this dental-school-specific Planetary Health Report Card.

| Section | Raw Score % | Letter Grade |
|---|--|--------------|
| Planetary Health Curriculum (30%) | $(25/70) \times 100 = 35.71\%$ | D+ |
| Interdisciplinary Research (17.5%) | $(16/17) \times 100 = 94.12\%$ | A |
| Community Outreach and Advocacy (17.5%) | $(11/14) \times 100 = 78.57\%$ | B+ |
| Support for Student-led Planetary Health Initiatives (17.5%) | $(11/15) \times 100 = 73.33\%$ | B |
| Campus Sustainability (17.5%) | $(27/32) \times 100 = 84.38\%$ | A- |
| Institutional Grade | $(35.71 \times 0.3 + 94.12 \times 0.175 + 78.57 \times 0.175 + 73.33 \times 0.175 + 84.38 \times 0.175) = 68.53\%$ | B |