Planetary health and climate-resilient health systems

A virtual international certificate course for all medical students

February 26 – April 1, 2024

Learning objectives:

- Display understanding of the concepts of planetary health and sustainability in healthcare, from the perspectives of health systems, climate resilience, and health equity and justice.
- Effectively collaborate with an international and interdisciplinary team
- Develop an infographic which effectively communicates scientific findings to an inter/trans-disciplinary audience

Requirements for certificate:

1) Attend the following lectures: check times in the timeline graphic
    - Orientation and international collaboration workshop: **29/02**
    - Visualisation and working with graphics: **19/03**
    - Presenting for a client (consultancy): **26/03**
1) (for Filipino students) Attend a mentoring session with Dr. Renzo Guinto, Director, Planetary and Global Health Program, St. Luke's Medical Center College of Medicine (1hr): Date TBC
2) Complete the necessary online course (you will gain access to ULearn)
3) Collaborate with the EWUU student teams to develop an infographic
    - Student teams will arrange these meetings themselves.
4) Present the developed infographic to the class: **28/03**

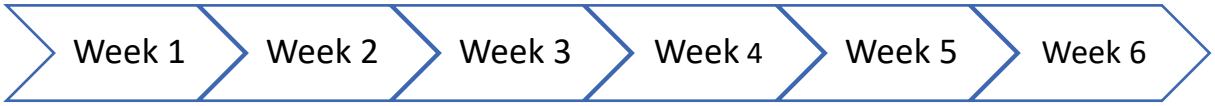
Time commitment

- ~20 hours over 5weeks

Timeline (Philippines time- GMT+8):

- **29/02 (19:30-20:30):** Introductory lecture
- Finalise topic
- **19/03 (18:30-20:30):** Visualisation and working with graphics workshop
- **26/03 (17:00-18:00**): Presenting for a client workshop
- **28/03 (16:30-18:00):** Final presentations

Recommended times to complete the module chapters:



•Chapter 1 & 2 •Chapter 3 & 4 •Chapter 5 & 6

Group Assignment Description:

Students from the Philippines and the Netherlands will collaborate to develop an infographic meant to display information on a topic related to planetary health and climate resilient health systems. This infographic will then be presented to the class. The topic should relate the 3 primary course themes, namely, health systems, climate resilience, and health equity and justice. Students have the freedom within this area to choose a specific topic of interest.

Presentation time: 10 minutes of presenting the infographic and 5 minutes group discussion.

St. Luke's Medical Center
College of Medicine
William H. Quasha Memorial
PLANETARY AND GLOBAL HEALTH PROGRAM

COURSE OUTLINE 2024

PLANETARY HEALTH AND CLIMATE-RESILIENT HEALTH SYSTEMS

Course code: GEDU10022

February, 2024

Primary course contact:
Julia Addison [J.Addison@umcutrecht.nl]

TU/e EINDHOVEN UNIVERSITY OF TECHNOLOGY
WAGENINGEN UNIVERSITY & RESEARCH
Universiteit Utrecht
UMC Utrecht

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COURSE INTRODUCTION

Since the dawn of humanity, human life has been intricately intertwined with the stability of Earth's natural systems. Both living and non-living components that make up our biosphere determine our continued health and well-being. That being said, we are on the cusp of change, as our daily activities, consumption and exploitation of natural resources (mostly non-renewable) are putting enormous stress on our planet and are deemed to be unsustainable. The inseparable relationship between the health and survival of humankind and the planet is best captured in the concept of *Planetary health*. Planetary health aims to identify new pathways that will support the renewed relationship between humans and Earth's natural systems - in a way that society can continue responding to their needs without overburdening their environment and the Earth's natural systems.

Through a combination of online modules, in-class workshops and interactive seminars, students will gain an in-depth understanding of the complexities and possible trade-offs necessary to build health systems supportive of both human and environmental health and respond effectively to climate change.

This course provides students with the opportunity to work on an interdisciplinary team to tackle real-world problems through challenge-based learning. In collaboration with external stakeholders, including clinicians, students from EWUU Alliance partners (TU/e, WUR and UU/UMCU) will work together to develop solutions to their presented challenge for more climate-resilient and just health systems.

COURSE LEARNING OBJECTIVES

After completing this course, students are expected to be able to:

1. Display understanding of the concepts of planetary health and sustainability in healthcare, from the perspectives of health systems, climate resilience, and health equity and justice.
2. Discuss the relation between these concepts, possible trade-offs and how these relate to Global Goals.
3. Analyse with stakeholders how these concepts relate to the project, and from there identify a specific group challenge
4. Evaluate existing approaches and solutions relating to their specific challenge
5. Create actionable solutions to the challenge that contributes to more climate-resilient and just health systems
6. Effectively collaborate within international, interdisciplinary teams and with external stakeholders
7. Effectively communicate scientific findings and solutions to an inter and trans-disciplinary audience

COURSE TEAM

Name (pronouns)	Role	Institution
Julia Addison, MSc (she/her)	Daily coordinator	UMC Utrecht
Joyce Browne, MD PhD (she/her)	Course coordinator	UMC Utrecht & Utrecht University
Dr. Renzo Guinto (he/him)	Course coordinator	St. Luke's Medical Center (Philippines)
Lekha Rathod (she/her)	Coach	UMC Utrecht
Jopke Janmaat (she/her)	Coach	UMC Utrecht
George Downward, MD PhD (he/him)	Lecturer	UMC Utrecht & Utrecht University
Ellen Mangnus, PhD (she/her)	Lecturer	Wageningen University & Research (WUR)
Dr. Jorieke van der Stelt (she/her)	Lecturer	Planetary Health Hub NL
Lily Eva Frank, PhD (she/her)	Lecturer	Eindhoven University of Technology
Judith van de Kamp, PhD (she/her)	Lecturer	UMC Utrecht
Camilla Alay Llamas, MD MPH (she/her)	Lecturer	UMC Utrecht
Noortje Campman (she/her)	Policy Officer	UMC Utrecht
Celina Kroon	Challenge Agent	UMC Utrecht
Merel Stevens	Guest Lecturer	Erasmus
Dimitra Mousa (she/her)	Guest Lecturer	University Utrecht (UU)
Lianne de Jong	Guest Lecturer	Eindhoven University of Technology
Michele Gerbrands (she/her)	Guest Lecturer	UMC Utrecht
Tom Buis	Guest Lecturer	WEMOS
Sara Panis (she/her)	Guest Lecturer	Wageningen University & Research (WUR)
Pauline de Heer	Guest Lecturer	Zorginstituut Nederland & Planetary Health Hub NL

FORMAT OF CLASS

This course follows two primary methods of learning:

1. **Online modules** aimed to deliver a comprehensive yet easy to follow course content. Weekly (hybrid) guided discussions will be held to help students explore their understanding of the topics covered that week. The online modules are individually taken and certain modules can be prepared in advance. Understanding of course concepts delivered through the online modules is assessed through an individual essay.
2. **In class workshops, guided workgroups and interactive seminars,** which are centred around helping students gain the skills necessary to define, investigate and develop potential solutions for their group challenge. In-class group activities help guide students through the process of challenge-based learning and prepare for their group assignments.

COURSE STRUCTURE: 2 'COURSE PACKAGE' OPTIONS

In order to make the course more widely accessible and appealing to students across the EWUU Alliance network (UU/UMCU, TU/e and WUR), there are two other packages through which this course can be followed. All student packages will work together and take the same course but will do so in different capacities. The course packages are described below.

PACKAGE 1

Package 1 students take this course as full-time students for the full 6-week duration. For these students, the course is worth 8ECTS, equating to 224 hours of work spread across the in-class sessions, online learning modules, and self-study over the 6 weeks (~37 hours per week). Package 1 students have a larger credit load from the course in comparison to Package 2 (who only take the course part-time).

PACKAGE 2

Package 2 students take this course as part-time students for the full 6-week duration. For these students, the course is worth 5ECTS, equating to 140 hours over the 6 weeks (or 23 hours per week). Some of the online modules can be covered before the official start date of this course to help to manage the workload more flexibly and at their own pace. When the course officially starts, the students will be introduced into their groups and meet their challenge agents in order to start on their challenges. Package 2 students will act as consults within the group work, rather than active group members, to reflect their part-time role within the course. As a consultant, Package 2 students will act as a 'critical friend' to their group, taking part in team meetings and providing feedback but not writing the group assignments themselves. Feedback should be provided within team meetings and on draft documents or plans.

ADDITIONAL INFORMATION

	Package 1	**Package 2**
Course load	8ECTS	5ECTS
Duration	6 weeks (full-time)	6 weeks (part-time)
Start date	27th February 2023	
Contact	J.addison@umcutrecht.nl	
Course Level	Masters	
Course requirements	English writing and verbal skills	

ATTENDANCE POLICY:

Students are expected to attend 80% of the compulsory class sessions to pass this course. Students are expected to complete assigned readings and viewings before class, and actively contribute to the course discussions and group work, to enhance their learning and that of fellow students, and reach the course objectives in the best possible way. There is a lot of attention for acquiring and strengthening competencies and personal skills needed to tackle challenges related to planetary health, such as listening, presenting, collaborating in inter- or trans- disciplinary teams, and writing academically.

If there are any expected barriers toward fully attending this course, please contact Julia Addison (J.Addison@umcutrecht.nl)

COURSE ASSIGNMENTS

Graded Assignments		Weight P1	Weight P2
1	Challenge proposal & investigation plan (group)	20%	20 % (P/F)
2	Investigation progress pitch (group)	5%	5% (P/F)
3	Final solution presentation (group)	25%	25% (P/F)
4	Essay (individual)	30%	30%
5	Reflective Portfolio (individual)	20%	20%

**P/F = pass/fail*

Group - Challenge report + presentation

Note: For the Challenge-Based Learning assignments, you should explore and include a variety of sources of information both academic and non-academic (e.g. anecdotal/ from the field) resources throughout the process.

INVESTIGATION OF THE CHALLENGE (1500 WORDS +/- 10%):

Challenge proposal and investigation plan

Essential components:

1. Problem outline Initial understanding of what the problem is. This can include what has been done and what hasn't been done to tackle it as well as what information is missing or what is not understood.
2. Methods of investigation: this should include how you are expecting to gather the information necessary to design a relevant solution in the time provided. Show how you expect to explore the challenge and form a relevant problem definition.
3. Potential barriers that may come when trying to gather data or otherwise investigate the problem and potential ways to overcome these barriers.
4. A stakeholder map and justification. Who will need to be included in this challenge investigation? Who has power and interest in this challenge? Justify how and why they were chosen. What is their role? Who are the winners and who are the losers? Whose support is needed for the solution to have a higher chance of success?

INVESTIGATION PROGRESS (20 MINUTES INCLUDING Q/A):

Progress report (pitch) on group investigation

Essential components:

1. An outline of the investigation plan.
2. An explanation of any findings thus far.
3. Identification of any (unexpected or expected) barriers within the process of the investigation
4. Any potential modifications to the initial investigation plan based on findings or overcoming the identified barriers.
5. Explanation of the deliverables and how these may be adjusted based on the investigation

FINAL CHALLENGE SOLUTION (15MINUTES + Q/A)

Presentations of final 'solutions' to challenges

Essential components:

1. An outline of the challenge. This is similar to the problem definition in the initial challenge proposal.
2. Description of the solution: components/ activities
3. Graphic image of the planned activities, necessary contributing materials/ resources (including people), and how these are predicted to lead to the desired impact (with sources- how can you assume that these activities will lead to the impact - what are the potential barriers and how do you plan to overcome them?)
4. Optional > The solution timeline (Using a graphic or a table to outline the process)
5. Estimated budget for the solution
6. Feasibility of the solution
7. A brief monitoring and evaluation plan, which includes how we will know that the solution has been a success- what indicators will be used and how will this data be collected and evaluations made?

Individual

INDIVIDUAL ESSAY (WORD COUNT 1500 +/-10%)

Each team will 'break down' their challenge and each focus on an aspect to dig into. The purpose of writing your paper is to gain a better understanding of a topic related to your group's challenge. This is an individual assignment. Students can discuss optional topics for papers together but, in the end, choosing the paper topic is an individual choice for a student to make (meaning: students cannot force another student to choose a specific topic).

- Choose a topic that is closely related to the challenge of your group and that needs further exploration to better understand the topic or an aspect of this topic. This way, your paper is part of the investigation process to find a solution for the group's Challenge).
- Bear in mind that you can discuss possible topics to write papers on with fellow group members, but that the final decision on what to write about is an individual choice made by you.
- There should be a connection between the content of your paper and the Big Idea(s) as addressed in the course, for instance as part of your introduction, thesis statement, argumentation and/or discussion.
- In the discussion, elaborate on the value of this paper in finding a solution for the group's Challenge

Essential components:

1. Problem definition- what is the problem? To whom and where is it a problem (globally, as well as specifically)?
2. Contextual background: What has been done about the challenge? What hasn't been done? What makes this problem persistent and difficult to tackle (wicked problems)
3. An analysis of how the topic relates to the three primary course themes (Climate Resilience, Health Systems and Health Equity and Justice) and the interconnectedness between them.

INDIVIDUAL REFLECTION PORTFOLIO

Reflection as a tool for self-assessment is an integral part of the learning process. Through reflection, students can see their own thinking and acting from an outsider's perspective, and give meaning to experiences. It enables students to link past experiences with future experiences, links their experiences to academic study, and evaluates their strengths, weaknesses and opportunities to prepare for future practice. Reflection is the "hallmark of professional behaviour."
As part of this course, students will build a Reflective Portfolio by submitting five portfolio elements at various moments throughout the course, in which they are asked to reflect on different aspects of their own perspectives/ways of thinking. The portfolio elements are:

- Personal skills
- Planetary Health & Me
- Equity on a personal level
- Team dynamics reflection based on the group assignments

Portfolio elements need to be submitted through _. At the end of the course, students upload their complete portfolio, consisting of all five elements, accompanied by a *Reflective Portfolio Report*. Portfolio elements will not be graded separately. Instead, the portfolio will be assessed based on: 1) the submission of all elements in time, and 2) the quality of the Reflective Portfolio Report according to the rubric.

Portfolio Element 1 (PE1): Personal skills
Briefly reflect on the teamwork session and what you have learned that can be applied to working in small groups of students on planetary health challenges (Max 150 words for each question):

- Following the guided group dynamics exercise, what are your strengths to group dynamics?
- What new insights did you gain about yourself from the session that you feel you can use in working with others on planetary health challenges?
- What are strengths that are complementary to yours?
- What are potential areas of tension with other personality and what are ways to deal with this professionally?

Portfolio Element 2 (PE2): Planetary Health & me
Submit your answer to the questions below. Use max 300 words for answering the questions (so 3x100 words).

- Why is Planetary Health important to you? What aspects of it appeal to you?
- Mention one Planetary Health topic that you find most interesting to learn more about, and explain why
- What do you consider a major obstacle towards achieving both environmental and human health?

Portfolio Element 3 (PE3): Positionality and equity on a personal level
Reflect on your own advantages or disadvantages and how this relates to your position in life. Use up to 500 words. Guiding questions:

- What are important aspects of your positionality in relation to the primary course concepts?
- How could aspects of your positionality influence your interactions with group members, outside stakeholders, or others that you may interact with when tackling your challenge?

Portfolio Element 4 (PE4): Intercultural team dynamics

Describe your experiences working in a group with students with different disciplinary and cultural backgrounds on collaborative assignments. Link this to what you have learned about yourself and about skills building and using these skills in teamwork and interdisciplinarity. Guiding questions: What was easy, what was difficult, and why? What new things did you learn or discover? Use up to 500 words.

Reflective Portfolio Report (750 words +/- 10%)

Write your Reflective Portfolio Report in which you reflect upon your learning process throughout this course. Look back on your Portfolio Elements and describe what was most valuable for you to learn in this course. Guiding questions (but do choose what is most relevant to you):

- How did your thoughts and ideas about planetary health change? How would you use that in the future, and why?
- How did your ideas about your own skills change? Were you able to use that during group work? How would you be able to use that in future group projects?
- You could also elaborate on your privileges and positionality, and reflect on your thought process: what did you learn, how were you able to use that in the course, and how are you able to use that in the future?
- Based on what you have learned, what is your wish for the world when it concerns planetary health

NON-GRADED ACTIVITIES

Within this course, students are asked to carry out, present or submit non-graded activities. The execution of these activities contributes to the quality of the graded assignments and strengthens necessary competencies. Not all non-graded assignments need to be submitted; sometimes they just need to be prepared and carried out in class. If submission is needed, this is explicitly mentioned in the course schedule. The non-graded assignments are outlined below.

STAKEHOLDER ENGAGEMENT MEETINGS:

In order to define your problem and investigate this challenge, you will need the help of your 'challenge agent' (find the description in the course roles section). Therefore, each team is expected to meet with their challenge agent in a number of team meetings to provide progress reports as well as receive feedback and help from your challenge agent. In week 1, a workshop will be provided to help guide your team in navigating stakeholder engagement throughout the course. Further guidance can be provided by contacting your team coach.

PEER FEEDBACK

In order to facilitate mutual learning and build skills not only in drafting your own projects but critically assessing others, there will be a variety of set moments for peer feedback. This may be in the form of handing in a draft report and exchanging feedback with another team or presenting a progress report for class feedback. The course schedule shows when peer-feedback moments occur.

CLASS ACTIVITIES AND ASSIGNMENTS

This course utilizes a variety of materials to elevate your learning experiences. Outside of readings, you may be asked to listen to podcasts or watch a documentary. Weekly structured class discussions will be held to help you answer any questions sparked or come to common class understandings on complex themes. Each student will provide a potential discussion point based on their learning (online modules, group work…) to stimulate mutual learning.

VIRTUAL INTERNATIONAL COLLABORATION (VIS)

In November 2022, the UU/UMCU was awarded three Virtual International Collaboration (Virtual International Samenwerking – VIS) grants from the Ministry of Education, Culture and Science (OCW).

One of these projects is taking part in this course! Students St. Luke's Medical Center College in the Philippines will join the Dutch EWUU (UU/UMCU, TU/e & WUR) students to take part in selected lectures and collaborate on a joint assignment to present to the class. This project provides students with an excellent and essential opportunity for not only interdisciplinary, but international and intercultural collaboration to dive into the complex and persistent issue of planetary health.

The VIS project is structured accordingly:

- St. Luke's students will join an orientation and international/ intercultural workshop (29/02)
- St. Luke's students will join for two lectures; Visualisation and working with graphics (19/03) and 'Presenting for a client' (25/03)
- St. Luke's students will complete selected online modules and collaborate with EWUU students on a joint assignment (see below)
    - Student teams will arrange these meetings themselves. Students teams are encouraged to meet at least twice during the first 3 weeks. Times that would best suit these team meetings are between 9:00-11:00 (NL)/ 16:00-18:00 (Philippines) to account for the time differences).
- Students will present their joint infographic together (01/04)

ASSIGNMENT FOR CERTIFICATE

Students from St. Luke's and EWUU will collaborate to develop an infographic meant to display information on a topic related to planetary health and climate resilient health systems. This infographic will then be presented to the class. The topic should relate the 3 primary course themes, namely, health systems, climate resilience, and health equity and justice. Students have the freedom within this area to choose a specific topic of interest.

Presentation time: 10minutes of presenting the infographic and 5minutes group discussion.

COURSE SCHEDULE - (HIGHLIGHTED ROWS ARE IN PERSON DAYS)

	Description	CBL activities	Required preparation	DUE	Learning outcomes
Week 1 (CBL - Engage)					
Day 1 *26/2*			Read the syllabus		Students understand the course outline and goals
Day 2 *27/2* Location: Andro C020	**10:00 - 10:20: Activity -** Introduction to the course *(whole course team)* **10:20- 11:50: Activity -** CBL introduction, group formulation and group role activities *(Julia Addison and Lianne de Jong)* **12:00 - 13:00 Workshop -** Stakeholder engagement and inter/transdisciplinary collaboration *(Julia Addison)* *LUNCH BREAK* **14:00 – 14:30 -** group work time - meet the coaches and define expectations ***(both coaches).***	Group members complete team 'role' activity and reflection together Prepare for meeting with stakeholders			Students are introduced into their groups and team dynamics and roles explored Students understand the challenges, purpose and methods of working in inter-and trans-disciplinary research teams Each group has initial clarity on the problem and has established a working relationship as well as

	14:30 – 15:00 – Time to plan for meeting with challenge agent **15:00 – 16:00 –** Meet the challenge agent!				set expectations with the external stakeholders
Day 3 *28/02*				Students hand in portfolio element (PE1)	
Day 4 *29/02* Location: HVDB 2.04	**10:00 - 12:00: Guided group work** - challenge exploration and problem definition *(Guest lecture: Michele Gerbrands)* **12:30 – 13:30-** Introduction to the St. Luke's students and international collaboration workshop *(Renzo Guinto and Julia Addison)* LUNCH BREAK **14.30- 15:30 – Surveys and co-creation of rubrics**	Groups explore their challenge to be able to hand in a draft challenge proposal for feedback on Friday			Groups gain a better understanding of how their challenge can be approached and investigated
Day 5 *01/03*	**10:00 - 11:30:** Guided group discussion **(coach)**				
Week 2 (CBL -Engage) Content					
Day 1 *04/03*				Students hand in portfolio element (PE2)	

Day 2 *05/03* Location: HVDB 3.79	**10:00 – 11:00 Workshop -** Positionality and critical self-reflection *(Julia Addison)* **11:30 – 13:30: Workshop** – Ideation techniques and creative thinking *(Guest Lecturer: Dimitra Mousa)* *LUNCH BREAK* **14:30 – 15:30: Guided group activity** - Stakeholder mapping *(Guest Lecturer: Tom Buis)* **15:30 – 16:00 Lecture:** Research methods ethics (*Julia Addison)*	Groups swap peer feedback Groups start working on a formal investigation plan to hand in on Friday			Groups have a good idea on how to set their investigation plan to hand in on Friday Students can analyse and describe how their (intersectional) positionality, influences their perspectives, beliefs and interactions with others.
Day 3 *06/03*					
Day 4 *07/03*					
Day 3 *08/03*	**10:00 - 11:30:** Guided group discussion **(coach)**				Students hand in their finalised investigation plans that will be approved and graded by their coaches
Week 3 (CBL- Investigate)					
Day 1 *11/03*					

Day 2 *12/03* *(WUR location: B0321 in the Forum building)*	**10:00- 11:00: Guided group work** – Agile working and SCRUM *(Guest Lecturer: Sara Panis WUR)* **11:15 - 12:15: Activity** – Research methods and ethics and equity *(Julia Addison)* **LUNCH BREAK** **13:15-14:15:** Positionality and critical self-reflection **14:15 –16:00:** Group work time (methods and ethics)			**Hand in finalised challenge proposals/ investigation plan**	Students gain an understanding of the complexity in decision making when deciding and working within health systems Students understand basic research methods and ethical principles for their investigation
Day 3 *13/03*					
Day 4 *14/03*					
Day 5 *15/03*	**10:00 - 11:30:** Guided group discussion **(coach)**			Students hand in portfolio element (PE3)	
Week 4 (CBL - Investigate)					
Day 1 *18/03*					

Day 2 *19/03* Location: Andro C020	**10:00 – 11:00 – Investigation progress report pitch** **11:30 – 13:30 – Workshop:** Visualisation and working with graphics *(Guest Lecture: Pauline Heer)* **ONLINE** LUNCH BREAK **14:30-16:00 – Climate Frisk Game**	Groups have a set of ideas for solving their challenge that they will discuss and work on			Students understand the basics of working with infographics to communicate scientific findings to transdisciplinary audiences
Day 3 *20/03*					
Day 4 *21/03*					
Day 5 *22/03*	**10:00 - 11:30** Guided group discussion **(coach)**			**Individual essay due**	
Week 5 (CBL - Act)					
Day 1 *25/03*					
Day 2 *26/03* *Location: online*	**10:00 - 11:00 - Workshop (ONLINE)**- presenting for a client– *Guest Lecture: Rutger Legeland* (with Filipino students)		Hand in questions online for lecturers to prepare	Students hand in portfolio element (PE4)	Students understand the importance, difficulties and potential strategies for communicating scientific findings

	11:15 - 12:15 - **Q/A session (ONLINE):** presentation and final report *(Julia)*				to an inter- and trans-disciplinary audience
Day 3 *27/03*					
Day 4 *28/03*	**09:30- 11:00: ONLINE Presentation** - infographic presentation for VIS project with Filipino students				
Day 5 *29/03*	**10:00 - 11:30** Guided group discussion **(coach)**			Hand in 2 page summary of final presentation for feedback	
Week 6 (CBL - Act) - WRAP UP					
Day 1 *01/04*					
Day 2 *02/04* *Location Ruppert A*	**10:00 - 12:00: PRESENTATION DAY** - final products presented to the stakeholders LUNCH BREAK **13:00 - 16:00: Wrap-up**			**Presentation slides hand in**	
Day 3					

03/04					
Day 4 *04/04*					
Day 5 *05/04*				**Reflection portfolio due**	

ROLES AND FUNCTIONS

Course coordinator: The course coordinator is responsible for organisation of the course and can answer questions about subjects that have not been specifically assigned to other staff members as indicated below. The course coordinator will also be available when organisational issues are unclear, problems with your coach occur, when a student does not function in a team or when a problem with the challenge agent cannot be solved by the team and the coach.

Course examiners/lecturers: This course consists of two parts that will be assessed separately, the individual and group part. The primary course Lecturers will also serve as examiners that determine the final grade for each student. There are three examiners, one of which is the course coordinator. For the team product, the course examiner's decision will be supported by input from the challenge agent and the group coaches. For the individual part, the course examiners will receive the grades for each student from the coaches. The examiner may revise the mark after consulting the coaches. If a student has an insufficient grade, then the examiners will decide whether the student has to re-do the course, or assign additional work in order to complete it.

Guest Lecturers: This course will involve a variety of guest Lecturers to provide a wide expanse of knowledge and experiences for you to learn from. Guest lecturers will not have knowledge on the specific course requirements for assignments but may be useful for expert advice if their area of expertise aligns with areas of your challenge.

Challenge agent: The challenge is introduced by each of the challenge agents (external stakeholders). They will have an advisory role in the assessment. The challenge agent will be present during at least the first stakeholder meeting and final event. It is up to the students and the challenge agent themselves to organise other potential meetings and check-in moments throughout the course. Students should organise to meet with their challenge agent at least once for a one-hour session for guidance and to receive feedback on potential solutions. Students and stakeholders have the freedom to decide if/when they want to meet beyond this required session.

Coach During this course you and your group will be assisted by a coach. Every team has its own coach, who will also be the coach of the individuals that are in that team. The coach provides feedback on your learning goals and guides the process of your team. Set feedback moments with the coach are planned throughout the challenge, but students are free to approach their coach for extra feedback. The coach supports and challenges the development of you and your team, and helps you to (learn to) reflect on where you are at each point in the process in regard to the competence and professional skills development, where you would like to and how to get there. So the coach is not there to help them directly in the project, but to help them in the process. Your coach is also added to your MS teams-team channel so you can always reach out to him/her and arrange meetings/ chats throughout the challenge. You can expect the following:

- The coach is available for questions or issues related to the team functioning
- Be aware that your coach is not necessarily an expert in the fields relevant to your project. If the coach is also an expert make consultation appointments next to coaching appointments to avoid a mix up of process coaching and content advising.
- Being present during a meeting does not imply that the coach will tell you what to do. The coach will also observe, make notes and can discuss the observations after the meeting to help the team with self-reflection and functioning.

Team roles: In this course, students will define group roles and responsibilities (with guidance). However, there is a key difference between active group members who are taking the course full-time (P1 & P2) and part-time students who will act as consults for their team (P3). As a consultant, P3 students will act as a 'critical friend' to their group, taking part in team meetings and providing feedback but not writing the group assignments themselves. Feedback should be provided within team meetings and on draft documents or plans.

CHALLENGE-BASED LEARNING INTRODUCTION

Phase 1: Engage (weeks 1 & 2)

Through a process of Essential Questioning, the Learners move from an abstract Big Idea to a concrete and actionable Challenge.

1) Big Ideas are broad concepts that are explored in multiple ways and are relevant to the Learners, and the larger community (e.g. health).
2) Essential Questioning allows the Learners to contextualize and personalize the Big Idea. The end product is a single Essential Question that is relevant to the individual or group (e.g. What do I need to do to be healthy?).
3) Challenges turn the Essential Questions into a call to action by charging participants to learn about the subject and develop a Solution. Challenges are immediate and actionable.

Phase 2: Investigate (weeks 3 & 4)

All Learners plan and participate in a journey that builds the foundation for Solutions and addresses academic requirements.

1) Guiding Questions point toward the knowledge the Learners will need to develop a Solution to the Challenge. Categorizing and prioritizing the questions create an organized learning experience. Guiding Questions will continue to emerge throughout the experience.
2) Guiding Activities and Resources are used to answer the Guiding Questions developed by the Learners. These activities and resources include any and all methods and tools available to the Learners.
3) Analysis of the lessons learned through the Guiding Activities provides a foundation for the eventual identification of Solutions.

Phase 3: Act (weeks 5 & 6)

Evidence-based Solutions are developed, implemented with an authentic audience, and then evaluated based on the results.

1) Solution concepts emerge from the findings made during the investigation phase. Using the design cycle, the Learners will prototype, test and refine their Solution concepts.
2) Implementation of the Solution takes place within a real setting with an authentic audience. The age of the Learners and the amount of time and resources available will guide the depth and breadth of the implementation.
3) Evaluation provides the opportunity to assess the effectiveness of the Solution, make adjustments and deepen subject area knowledge.


REFLECT • SHARE • DOCUMENT • REFLECT • SHARE • DOCUMENT • REFLECT • SHARE • DOCUMENT • REFLECT • SHARE • DOCUMENT • REFLECT • SHARE • DOCUMENT • REFLECT • SHARE • DOCUMENT •
ENGAGE
Through essential questioning the learners move from a big idea to a concrete and actionable challenge.
1. Big Idea
2. Essential Question
3. Challenge
ACT
Evidence based solutions are developed, implemented with an authentic audience and the results evaluated.
1. Solution
2. Implementation
3. Evaluation
CHALLENGE
based learning
INVESTIGATE
All learners plan and participate in a journey that builds the foundation for solutions and addresses curriculum requirements.
1. Guiding Questions
2. Guiding Activities/Resources
3. Analysis

GRADING RUBRICS

Rubric – Individual Paper			
Criteria	**Insufficient: Fails to meet academic requirements (0-5.4)**	**Satisfactory: Is an acceptable piece of work (5.5 – 7.9)**	**Excellent: Belongs to the top 15% (8.0-10)**
Time management	• Fails to meet deadline.	• Meets the deadline.	-
Content			
Topic	• Topic is unrelated to group Challenge • Course themes (Climate Resilience, Health Systems and Health Equity and Justice) are not taken into account.	• Topic is related to group Challenge • Some (not all) course themes (Climate Resilience, Health Systems and Health Equity and Justice) are mentioned	• Topic chosen is a deeper exploration of an aspect of the group Challenge • Link between topic and main themes (Climate Resilience, Health Systems and Health Equity and Justice) is clearly described
Title	• Is missing. • Does not justify the content. • Suggests incorrect/over interpretation of data.	• Represents the content.	• Attracts attention. • Creative and original.
Introduction Thesis statement and scope of literature research	• Incomplete or inaccurate overview of literature. • Thesis statement absent or lacks focus. • Relevance of thesis is unclear.	• Topic is well defined and focused. • Relevance of the thesis is clarified. • Adequate overview of relevant literature.	• Substantiated thesis statement with clear focus. • Essay topic has the potential to contribute useful new knowledge to the field. • Complete concise overview of relevant literature.
Main body of text Description of relevant literature/ data analysis	• Incomplete or incorrect analysis of relevant literature/data. • Data/retrieved publications are irrelevant.	• Satisfactory analyses/ descriptions/ interpretations of data/retrieved literature. • Text can be understood without information provided by figures and tables.	• Data/retrieved publications and analyses are valid, complete and presented concisely. • Interpretation of literature/data is convincing and creative.

Discussion and Conclusion Presentation of hypotheses, depth and critical analysis	• Weak or not supported by evidence. • Fails to support thesis statement. • Repetitive information. • Data inadequately discussed, sticking rigidly to existing concepts or using invalid arguments. • Discussion fails to address strengths and weaknesses of study. • Hypotheses and suggestions for additional research are missing/ illogical.	• In line with presented evidence. • Supports thesis statement. • Relation evidence and thesis discussed adequately, using valid arguments. • Strengths and limitations, new insights are addressed in the light of the literature. • New insights, hypotheses presented. • Suggestions for future research may be based on weak assumptions.	• Concise, sensible and in depth discussion of data in relation to topic. • Complete, critical and balanced discussion of strengths, limitations, new insights and hypotheses. • Critical discussion of how the data relate to current knowledge of the subject. • New insights, hypotheses are discussed in depth. The value of this paper in finding a solution for the group's challenge is discussed.
Structure and Style			
Structure and line of reasoning	• Line of thought is unclear. • Badly structured.	• Line of thought mostly clear. • Structure supports legibility of text.	• Line of thought is easy to follow and supported by structure.
Referencing	• Referral is insufficient, inconsistent, incomplete or incorrect. • References cannot be retrieved.	• Referral is complete and correct. • Correct application of a single referencing system. • References can be traced.	• (Key) references have been found independently.
Student number reference	• Fails to use student number as reference.	• Shows student number.	
Writing skills	• Style too wordy or too concise. • Disturbing spelling or grammar mistakes.	• Grammar, style enable understanding of information. • No errors present detected by spellcheckers.	• Grammar and style support legibility of the document. • Writing flows smoothly.

Rubric 1d. Final Presentation			
Criteria	**Insufficient: Fails to mee academic requirements (0-5.4)**	**Satisfactory: Meets academic requirements (5.5-7.9)**	**Excellent: Belongs to the top 10% (8.0-10)**
The Journey			
Learning challenges	• Learning challenges throughout the phases were not (properly) addressed	• Learning challenges throughout the phases were properly addressed	• Learning challenges throughout the phases were properly addressed
The Solution to the Challenge			
Description	The solution is unclear and/or not concrete enough and not very promising	• The solution is clear, concrete and promising	The solution is very clear, concrete and highly promising
Link with the Group Challenge	• The solution is insufficiently linked to the challenge by providing an answer to the challenge	• The solution is clearly linked to the challenge by providing an answer to the challenge	-
Link with course themes	• The link between the Solution and the course themes (Climate Resilience, Health Systems and Health Equity and Justice) is not clear	• The link between the Solution and the course themes (Climate Resilience, Health Systems and Health Equity and Justice) is mentioned	• The link between the Solution and the course themes (Climate Resilience, Health Systems and Health Equity and Justice) is clear and strong
Link with findings from the Investigation Phase	• The solution is insufficiently informed by findings from the Investigation Phase	• The solution is informed by findings from the Investigation Phase	• The solution is highly convincingly informed by findings from the Investigation Phase
Link with feedback by stakeholders	• The solution is insufficiently informed by feedback from the stakeholders during the Investigation Phase	• The solution is informed by feedback from the stakeholders during the Investigation Phase	-
The solution's strengths and weaknesses are addressed	• The solution's strengths and weaknesses are insufficiently addressed	• The solution's strengths and weaknesses are addressed	• The solution's strengths and weaknesses are well addressed
Necessary next steps for implementation	•Necessary next steps are insufficiently addressed	•Necessary next steps are addressed	• Necessary next steps are addressed well, including what needs to happen, why and who is involved
Presentation Skills, Composition and Design			
Nonverbal skills	• Limited eye contact with audience. • Body language is distracting • Incapable of continuing adequately after an error	• Regular eye contact with the audience. • Body language is adequate • Errors have only little impact on the presenter	• Captures the audience • Body language is constructive / effective • Continues in an adequate manner after errors
Speaking skills	• Speaks either too fast or too slow • Insufficient English • Loses attention of the audience • Too difficult/easy for audience	• Acceptable pace • Reasonable proficiency in English. • Gets attention of the audience. • Compatible with audience	• Good pace • Fluent in English • Maintains constant attention of the audience
Discussion	• Poor discussion question	• Good discussion question • Good stimulation of discussion	• Excellent discussion question • Excellent stimulation/facilitation of discussion

	• Insufficient stimulation of discussion		
Length of presentation (incl Q&A and discussion)	• Insufficient time management	• Sufficient time management	• Excellent time management of the content perfectly fitting within the time limit
Visuals, language and structure of presentation	• Too much info/detail on a single slide • Inadequate slide quality (technical, compositional) • Grammar/spelling errors • Presentation incomplete or incorrect balance	• Appropriate visuals • Grammar / spelling correct • Logical order of the parts and slides • Correct balance presentation components	• Slides conveniently arranged • Very clear message per slide • Smooth transitions between topics • Creative
Use of references	• Larger number of references distracts • Referral is insufficient, inconsistent, incomplete or incorrect	• Referral of tables, figures etc. is correct • Appropriate number of references per slide	-

Rubric – Progress Report Pitch Presentation			
Criteria	**Insufficient: Fails to meet academic requirements (0-5.4)**	**Satisfactory: Is an acceptable piece of work (5.5 – 7.9)**	**Excellent: Belongs to the top 15% (8.0-10)**
Content (			
Scientific content/overall	Inadequate description of methods. • Poor explanation of results/tables/figures. • Discussion lacks essential issues. • Tables/figures contain too much or too few details. • References for claims/ illustrations are missing.	• Clear description of methods. • Good explanation of results/tables/figures. • Valid discussion. • Tables/figures require explanation. • Some claims/ illustrations are not referenced.	• Choices of methods are justified. • Clear concise explanation of results/tables/figures. • Critical in-depth discussion. • Informative tables/figures. • Key claims and illustrations are reference
Focus of the presentation (investigation progress report)	• Progress is unclear. • No justification for choices made • Focus is unclear	• Investigation progress is briefly outlined • Decisions made are described but justification is limited. • Barriers experienced are briefly mentioned with limited description of how these were dealt with	• Investigation progress is clearly outlined. • Excellent description of decisions made how barriers were overcome with thorough justification. • Clear explanation of how the final deliverable may be adjusted (if necessary).
Presentation technique			
Nonverbal skills	• Limited eye contact with the audience. • Body language is distracting. • Incapable of continuing adequately after an error.	• Regular eye contact with the audience. • Body language is adequate. • Errors have only little impact on the presenter.	• Captures the audience. • Body language is constructive / effective. • Continues in an adequate manner after errors.
Speaking skills	• Speaks either too fast or too slow. • Insufficient English. • Loses the attention of the audience. • Too difficult/easy for audience.	• Acceptable pace. • Reasonable proficiency in English. • Gets the attention of the audience. • Compatible with audience.	• Good pace. • Fluent in English. • Maintains the constant attention of the audience.
Facilitation of interactive discussion	• Insufficient stimulation of discussion in the group • Inadequate answers to raised questions. • Inadequate response to critique.	• Discussion in the group stimulated by posing carefully chosen discussion questions • Can answer most of the questions raised. • Adequate response to critique.	• Excellent stimulation/facilitation of discussion in the group • Correct answers to questions raised • Can value critique/suggestions.
Composition and design			
Length of presentation (incl Q&A and discussion)	• Inadequate time management by taking too little or too much time for the presentation.	• Adequate time management, with only a few minutes under or over the assigned time limit	• Excellent time management of the content perfectly fitting within the time limit
Visuals of presentation		• Appropriate.	• Slides conveniently arranged. • Very clear message per slide.

	• Too much info/detail on a single slide. • Inadequate slide quality (technical, compositional).		
Grammar / spelling	• Distracting grammar / spelling errors.	• Grammar / spelling correct.	
Use of references	• Larger number of references distracts. • Referral is insufficient, inconsistent, incomplete or incorrect.*	• Referral of tables, figures etc. is correct. • Appropriate number of references per slide.	
Structure of presentation	• Parts of presentation are missing. • Absence of logical order. • Incorrect balance of presentation components.	• All required parts are present. • Logical order of the parts and slides. • Correct balance presentation components.	• Smooth transitions between topics.

* In case of fraud or plagiarism, the examiner will inform the Board of Examiners of this in writing

Rubric - Reflective Portfolio			
Criteria	**Insufficient: Fails to meet academic requirements (0-5.4)**	**Satisfactory: Is an acceptable piece of work (5.5 – 7.9)**	**Excellent: Belongs to the top 15% (8.0-10)**
All Portfolio Elements			
Time management: Submission Portfolio Elements (6 including the report*)	• One or more Portfolio Elements were submitted too late.	• All Portfolio Elements were submitted in time.	-
Reflective Portfolio Report			
Reflective thinking	• The reflection attempts to demonstrate thinking about learning, but is vague and/or unclear and/or not specific. • The reflection does not address the student's thinking and/or learning.	• The reflection explains the student's thinking about his/her own learning processes, as well as implications for future learnings.	• The reflection explains the student's own thinking and learning processes, as well as implications for future learning and is exceptionally well / thoughtful formulated.
Analysis	• The reflection attempts to analyze the learning experience, but the value of the learning to the student or others is vague and/or unclear and/or not specific. • The reflection does not move beyond a description of the learning experience.	• The reflection is an analysis of the learning experience and the value of the derived learning to self or others.	• The reflection is an in-depth analysis of the learning experience, the value of the derived learning to self or others, and the enhancement of the student's appreciation for the discipline.
Making connections	• The reflection attempts to articulate connections between various learning experiences gained throughout this course and perhaps also outside this course linking it back to other/past learning experiences, and/or future with goals. However, the connections are vague and/or unclear and/or not specific • The reflection does not articulate any connection to other learning experiences.	• The reflection articulates connections between various learning experiences gained throughout this course, and/or with future goals.	• The reflection articulates multiple connections between various learning experiences gained throughout the course, and perhaps also linked to learning experiences outside the course (other/past experiences), and/or with future goals, and is exceptionally well/thoughtful formulated.

*1) Planetary Health & Me, 2) Personal skills and preferences, 3) Equity on a personal level, 4) Team dynamics reflection, and the Reflective Portfolio Report.

Rubric – Challenge proposal			
Criteria	**Insufficient: Fails to meet academic requirements (0-5.4)**	**Satisfactory: Is an acceptable piece of work (5.5 – 7.9)**	**Excellent: Belongs to the top 15% (8.0-10)**
Challenge analysis	• The challenge is not analysed, at most it is described.	• A good analysis from an interdisciplinary perspective. Themes are clearly described. Arguments are generally backed by data or literature. Course themes are touched upon (Climate Resilience, Health Systems and Health Equity and Justice).	• An excellent analysis, with good use of data, evidence of extensive further reading and original thinking. Arguments are backed by data or literature. Course themes are clearly linked and well-understood (Climate Resilience, Health Systems and Health Equity and Justice).
Description current Situation	• Current situation is not described or so incompletely that it is useless.	• Current situation is described satisfactory, the information is mostly relevant and assertions are generally backed by data or references. Description is clear, but may contain some factual errors or contradictions.	• Excellent description of current situation, including relevant information backed by data or references. Few (if any) factual errors or contradictions.
Methods	• Methods are presented without reflection.	• Methods are critically reflected upon with justification for the chosen methodology.	• Excellent discussion on both the methods used with good insight of the value and barriers (ethics, feasibility).
Stakeholder analysis	• Presents an incomplete analysis of some of the stakeholders with no or limited arguments and evidence.	• Presents a thorough interdisciplinary analysis of most stakeholders with sufficient arguments and evidence.	• Presents an insightful, thorough trans-disciplinary analysis of all stakeholders and their interrelations (to each other and to the challenge).

Rubric – Consult grading		
Criteria	**Fail**	**Pass**
Team meeting attendance	• More than 20% of meetings were unattended and the student did not notify the teachers and team members in advance.	• 80% of team meetings were attended (unless there was a good reason for not being able to attend). • Student notified the teachers and team members of attendance in advance.
Team meeting contributions	• Student does not contribute adequately to team meetings.	• All satisfactorily, and in addition excellently executed. Student actively contributes to the team meeting and provides insights, input and critical feedback on meeting topics.
Group feedback	• Peer feedback was not given in time. Feedback was extremely limited and did not contribute to improving the final group product.	• Critical feedback was given on time (as decided by the team in team contract) • Critical feedback was provided on all team assignments and contributed to improving the final group products. Disciplinary perspectives and personal skills are contributed to the final product.
Execution of the collaborative assignments	• The assignment was not well executed, with incorrect or vague content and/or no evident team effort	• The assignment was excellently executed, with great (new, relevant, presented elegantly) content and evidently prepared and presented as a well-functioning team.

WORKLOAD:

Package 1: 1ECTS = 28 hours of study (SBU); 8 ECTS = 224 SBU

	Total	Contact hours	Group assignments and group work	Online modules	Individual assignments and self-study
Week 1	~37	9	18	*6*	5
Week 2	~37	5	18	*6*	5
Week 3	~37	5	18	*6*	7
Week 4	~37	5	25	0	7
Week 5	~37	3	25	0	7
Week 6	~37	4	25	0	10
TOtal	~224				

Package 2: 1ECTS = 28 hours of study (SBU); 5 ECTS = 140 SBU

	Total	Contact hours	Group assignments and group work	Online modules	Individual assignments and self-study
Week 1	~23	9	6	*6*	5
Week 2	~23	5	6	*6*	5
Week 3	~23	5	6	*6*	5
Week 4	~23	5	10	0	7
Week 5	~23	3	10	0	7
Week 6	~23	4	10	0	10
TOtal	~140				