

## 2023年度後期 e-STARTプログラム コース4/e-START Program course4

所属・職名 School, Job Title	IDEC国際連携機構 環境遺伝生態学分野（医系科学研究科協力講座） 教授
氏名 Name	○丸山 史人、藤吉 奏（上記講座 育成助教）、Mateja Dovjak（Cross-appointment Assistant Professor; Associate Professor, Ph.D. at University in Ljubljana）
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① コーステーマ / Theme of the course			
<b>The problem of unhealthy built environment:</b> a nested structure of determinants of planetary health used for decision-making, and the state-of-the-art microbial, engineering and environmental health sciences aimed at multidisciplinary oriented problem-solving.			
② 教養教育科目/Liberal Arts Subject			
オンライン国際ゼミ A（1単位）/Online International Seminar A (1credit)			
③ 共同実施先の大学名，国・地域名（2大学／国・地域以上ある場合は，欄を追加してください） Overseas university(ies) to jointly conduct the course – add cells if needed			
国・地域名 1 Country/region	Republic of Slovenia	大学名 2 Name of university	University of Ljubljana
国・地域名 2 Country/region		大学名 2 Name of university	
④ コースでの使用言語/ Language to be used in the course		English (or combined Japanese or Slovenian)	
⑤ 使用予定のオンラインツール /Communication platform used in the course		Teams, Zoom	
⑥ 対象学生等/Eligibility ※原則、最終セメスター学生は単位付与のタイミング上、「単位不要」での登録となる。 ※大学院生は学部の科目の単位付与可能		<input type="checkbox"/> 学部生のみ/undergraduate student only <input type="checkbox"/> 大学院生のみ/graduate student only <input checked="" type="checkbox"/> 学部生・大学院生どちらも/Both undergraduate and graduate student <input type="checkbox"/> 教職員の見学可/ the visits are available for faculty and staff	
⑦ 曜日・時間/Day and Time 現時点で分かる情報をご提供ください		月曜日午後4:20-午後5:50 (SLV 8:20-9:50) *初回（1月15日）のみ午後3:20～午後4:05、午後4:20-午後5:50	

⑧ 募集人数/Capacity	最小開講人数：名/Minimum number of participants 5 最大募集人数：名/Maximum number of participants 15
⑨ 募集終了日 / Application due date	2023年12月15日17時
⑩ 持っておくと望ましい背景知識 Recommended background knowledge Interest on architecture, environmental health and (micro)biology.	
⑪ コース概要/ Outline of the course <p>The built environment is an important determinant of planetary health; it is a complex 4D space defined by length-x, width-y, depth-z, and time-t, which the boundaries are often blurred. It is created by human intervention (construction) and is intended for the everyday activities (i.e., living and working environments). Important components are location with sociological and cultural determinants. Any intervention should be performed considered a nested structure of components and sub-components of built environment that are in constant interrelations (i.e., nature, buildings, operation systems, occupants, etc.). The built environment currently faces many problems that have negative impacts on the occupants. The WHO estimated that the environment accounts for almost 20% of all deaths in the WHO European Region. The WHO estimates that in the WHO European Region inadequate indoor conditions – especially poor indoor air quality accounts for over 100,000 deaths per year. Large literature survey (Dovjak and Kukec 2019) highlighted that current design approach does not include the multidisciplinary oriented problem solving. In the proposed course the students will acquire the knowledge, skills and abilities in the fields of environmental health, engineering and microbiological sciences. Current problems, the case studies from Slovenia, Japan and globally will serve as a platform to use a decision-making tool in the field of planetary health.</p>	

⑫ コース内容詳細案（必要に応じ補足資料を添付してください）

Detailed plan of the course (please attach supplementary documents if necessary)

(1) 講義 Plan of specialized lecture

時期/Period：下記参照 See below

内容/Details：

Preliminary lecture by teacher in charge: Environmental health and engineering: Current design approach, deteriorated indoor environmental quality - identification of health risk factors, sick building syndrome and building related illness (a problem, “why”), special focus on chemical pollutants and ventilation (a problem, “why”). morphology of design approach - bioclimatic design of vernacular buildings; main drivers of healthy buildings (“how”).

From mezzo, macro to micro level. Indoor and outdoor environment.

Preliminary lecture by teacher in charge: Microbiology. Mycobioime: water, earth, air, etc.

Introduction of a tool for decision making and problem-solving: All teachers. What is optimum for occupant/microbe.

第1回 オリエンテーション【0.75時間】1月15日（月）午後3:20～午後4:05

\*プログラムの到達目標と流れについての説明

\*参加学生の自己紹介を兼ねたアイスブレイク

第2回 スロベニアとはどんな国か?:スロベニアの文化と教育の紹介（講義）【1.5時間】午後4:20～午後5:50

第3回 発表と質疑応答の説明【1.5時間】1月22日(月) 午後4:20～午後5:50

\*発表資料を作成するためのツール、ルール、倫理、著作権について説明（希望グループは発表資料に対するフィードバック）

第4回 微生物学入門【1.5時間】1月29日(月) 午後4:20～午後5:50

\*微生物学の基礎知識：身の回りの微生物について紹介

第5回 建築学入門1【1.5時間】2月5日(月) 午後4:20～午後5:50

\*伝統建築、現代建築、換気について紹介

第6回 建築学入門2【1.5時間】2月19日(月) 午後4:20～午後5:50

\*室内環境における健康リスク、空気質管理について紹介

**1st Session:** Orientation [0.75 hours] January 15th (Monday) 3:20 PM to 4:05 PM

\*Explanation of program goals and structure

\*Icebreaker that includes self-introductions by participating students

**2nd Session:** Introduction to Slovenia: Culture and Education (Lecture) [1.5 hours] January 15th (Monday) 4:20 PM to 5:50 PM

**3rd Session:** Presentation and Q&A Explanation [1.5 hours] January 22nd (Monday) 4:20 PM to 5:50 PM

\*Explanation of tools, rules, ethics, and copyrights for creating presentation materials  
(Feedback on presentation materials for groups that wish to do so)

**4th Session:** Introduction of Microbiology [1.5 hours] January 29th (Monday) 4:20 PM to 5:50 PM

\*Basic knowledge of microbiology: Introduction of microorganisms in our living environment

**5th Session:** Introduction of Architecture 1 [1.5 hours] February 5th (Monday) 4:20 PM to 5:50 PM

\*Introduction to traditional architecture, modern architecture, and ventilation

**6th Session:** Introduction of Architecture 2 [1.5 hours] February 19th (Monday) 4:20 PM to 5:50 PM

\*Health risks in indoor environments and introduction to air quality management

時間数合計/Total hours : 8.25      時間/hours

## (2) グループワーク Plan of group work

時期/Period : 下記参照 See below

内容/Details :

- ・ 1月16~21日の間に、発表に向けたグループワークに取り組む【計6時間】  
第2回 スロベニアについての紹介を受けて、スロベニアの学生・教員に向けて日本のこと・広島大学のことを紹介する発表資料を準備する
- ・ 1月23~28日の間に、発表資料改善のためのグループワークに取り組む【6時間】  
第3回 発表と質疑応答の説明を受けて、発表資料を改善するためにグループワークに取り組む
- ・ 1月30~2月4日の間に、発表に向けたグループワークに取り組む【計6時間】  
第4回 微生物学入門の講義を受けて、グループワークに取り組む
- ・ 2月6~18日の間に、発表に向けたグループワークに取り組む【計6時間】  
第5回 建築学入門1 の講義を受けて、グループワークに取り組む
- ・ 2月20~25日の間に、発表に向けたグループワークに取り組む【計6時間】  
第6回 建築学入門2 の講義を受けて、グループワークに取り組む
- ・ 2月27~3月3日の間に、発表資料改善のためのグループワークに取り組む【6時間】
  
- ・ Work on group projects for presentations between January 16th and 21st [Total of 6 hours]  
After the presentation about Slovenia in the 2nd session, prepare the presentation about introducing Japanese culture and Hiroshima University to Slovenian students and professors.
- ・ Work on group projects to improve presentation materials between January 23rd and 28th [6 hours]  
After receiving the instruction of presentation and Q&A in the 3rd session, work on improving presentation materials through group work.
- ・ Work on group projects for presentations between January 30th and February 4th [Total of 6 hours]  
After the lecture on Introduction of Microbiology in the 4th session, engage in group work to prepare for the presentation.
- ・ Work on group projects for presentations between February 6th and 18th [Total of 6 hours]

After the lecture on Introduction of Architecture 1 in the 5th session, work on group projects to prepare for the presentation.

- Work on group projects for presentations between February 20th and 25th [Total of 6 hours]  
After the lecture on Introduction to Architecture 2 in the 6th session, engage in group work to prepare for the presentation.
- Work on group projects to improve presentation materials between February 27th and March 3rd [6 hours]  
This session is dedicated to improving presentation through group work.

時間数合計/Total hours : 36      時間/hours

### (3) グループ発表 Plan of final group presentation

時期/Period : 下記参照 See below

内容/Details :

第7回 発表リハーサル 【1.5時間】 2月26日(月) 午後4:20～午後5:50

第8回グループ発表と質疑応答、補足講義、まとめ 【1.5時間】 3月4日(月) 午後4:20～午後5:50

\*広大生による日本・広島・広島大学とまちづくりに関するプレゼンテーション（文化交流活動）

\*Sloveniaの学生、教員に向けて発表

**7th Session:** Presentation Rehearsal [1.5 hours] February 26<sup>th</sup> (Monday), 4:20 PM - 5:50 PM

**8th Session:** Group presentations and Q&A, supplementary lectures, and wrap-up [1.5 hours]

March 4th (Monday) 4:20 PM to 5:50 PM

\*Presentation by HU students on Japan, Hiroshima, Hiroshima University and city planning (cultural exchange activity)

\*Presentation to Slovenia students and professors

時間数合計/Total hours : 3      時間/hours

### ⑬ その他/ Others

Zoom/Teamsリンクは、選考後、対象者にメールまたはもみじ掲示でご連絡します。

The Zoom/Teams link will be provided to eligible applicants by email or Momiji after selection.