LEARNING REPORT

Note that the texts with red color will guide you to making a learning report and you can delete them before you upload your report to MyCourses.

Optional homework assignments are highlighted with green (delete them if you don't do those tasks).

Add your name and student number here

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**PRE-TASK OF THE COURSE:**

**MY EXPECTATIONS AND THOUGHTS IN THE BEGINNING OF THE COURSE**

Answer e.g., the following questions about your thoughts in the beginning of the course.

a) What questions would you like to find answers to during the course?

b) What kind of thoughts and feelings did the course content/description evoke?

c) What kind of objectives will you set for yourself on this course?

d) What will be the biggest challenges for you on this course?

e) What can you do to prevent these challenges from becoming too demanding?

**PART 1: GENERAL FACTORS AFFECTING INDOOR AIR QUALITY**

**MAX. 7 POINTS**

**COURSE INFO EVENT (VIA TEAMS MEETING, 28th FEBRUARY 2023 AT 9:15-10:00) + SELF LEARNING**

**(PART 1 INCLUDES TWO MANDATORY TASKS)**

**PART 1, TASK 1. Air quality in various types of indoor environments**

**(max. 2 points)**

Read the publication *“Śmiełowska et al 2017. Indoor air quality in public utility environments—a review. Available online at:*

[*https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5393278/pdf/11356\_2017\_Article\_8567.pdf*](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5393278/pdf/11356_2017_Article_8567.pdf)

and complete the assessment 1a OR 1b

1a) list the typical pollutants/factors and their sources affecting indoor air quality (IAQ) in different type of public buildings (you can also prepare a few slides about the topic and paste (as an image/images) them as part of your learning diary).

OR

1b) select one type of public environment (school, office, hospital, or elderly care centers) and prepare a “graphical abstract” (see examples about the graphical abstract as below) and paste the abstract as part of your learning diary.

Examples about the graphical abstracts:

Diagram

Description automatically generated

Um et al. 2022

Diagram

Description automatically generated

Lim et al. 2021

Diagram

Description automatically generated

Rostami et al. 2021.

*Other useful literature (optional reading materials):*

* *Cincinelli and Martellini. 2017. Indoor Air Quality and Health. International Journal of Environmental Research and Public Health. 14 (1286), doi:10.3390/ijerph14111286.*
* *EPA (United States Environmental Protection Agency). 2021. Introduction to Indoor Air Quality.* [*https://www.epa.gov/indoor-air-quality-iaq/introduction-indoor-air-quality*](https://www.epa.gov/indoor-air-quality-iaq/introduction-indoor-air-quality)
* *EPA 2014. Factors Affecting Indoor Air Quality. Available online at:* [*https://www.epa.gov/sites/production/files/2014-08/documents/sec\_2.pdf*](https://www.epa.gov/sites/production/files/2014-08/documents/sec_2.pdf)

**PART 1, TASK 2: Learning diary about self-learning**

(Length: 500-1000 words; Font: Times New Roman; font size: 11) **(max. 5 points)**

Reflect on what you have learned from the self-study material (or what previous knowledge you have about indoor air exposures and their sources) and from the task 1. If necessary, see the INFO-document for more instructions on writing a learning diary.

Note that the knowledge learned within the mandatory task 1 must be reflected in your learning diary.

**PART 1 DEADLINE: 16TH MARCH 2023 AT 23:59.**

Note! When you download Part 1 of your learning report to the MyCourses, you can "clean up" other parts of the report template (instructions and parts 2-10), or you can submit the entire report template including the completed part 1.

**(Note! Start to work with the “in advance” homework for the contact teaching 3 (7th March 2023!)**

**PART 2: VENTILATION AND INDOOR AIR QUALITY**

**MAX. 10 POINTS**

**TEACHING EVENT IN OTANIEMI (LECTURE ROOM R2) ON 2ND MARCH 2023**

**(PART 2 INCLUDES TWO MANDATORY TASKS)**

**PART 2, TASK 1. Learning diary, teaching 2nd March 2023**

(Length: 500-1000 words; Font: Times New Roman; font size: 11) **(max. 5 points)**

Reflect on what you have learned from the lecture. If necessary, see the INFO-document for more instructions on writing a learning diary.

Reflection about the Task 2 (pair work) in your learning diary is optional (if all requirements are met, 5 points can be obtained without this).

**PART 1, TASK 2. PAIRWORK – RETURNED SEPARATELY IN MYCOURSES**

**(max. 5 points)**

**NOTE! USE THE SUBMISSION BOX FOR THE PAIRWORK (ONE SUBMISSION / PAIR). Don’t add the pairwork assignment in this learning diary.**

**YOU CAN FIND THE PAIRWORK ASSIGNMENT FROM THAT BOX.**

**PART 2 DEADLINE (TASKS 1 AND 2): 16TH MARCH 2023 MARCH 2022 AT 23:59.**

Note! When you download Part 2 of your learning report to the MyCourses, you can download your report up to Part 2 (including parts 1 and 2) and "clean up" other parts of the report template (instructions and parts 3-10), or you can submit the entire report template including the completed parts 1 and 2.

**(NOTE: Deadline for choosing** **the group and topic is 6th March 2023 at 23:59!)**

**PART 3: DAMPNESS AND MOLD**

**MAX. 10 POINTS**

**TEACHING EVENT IN OTANIEMI (LECTURE ROOM R2) ON 7TH MARCH 2023**

**(PART 3 INCLUDES TWO MANDATORY TASKS)**

**PART 3, TASK 1. “In advance” homework before the teaching event 7th March 2023**

**Indoor mould exposure: Characteristics, influences and corresponding associations with built environment**

**(max. 5 points)**

You can do the homework alone, with a pair or in a group (max 3 persons in a group)

**Read the following article and answer the questions:**

Du C, Li B, and Yu W. Indoor mould exposure: Characteristics, influences and corresponding associations with built environment- A review. Journal of Building Engineering. Volume 35, 2021.

1. What kind of things excessive indoor dampness can cause in a building?
2. What is known about the health effects of mold exposure?
3. What is the role of air temperature and humidity on the mould formation and dispersion in building environments?
4. The growth of molds usually expresses a significant seasonality due to varying meteorological conditions. What kind of seasonality (give some examples)?
5. What are the predominant fungi in an atmospheric environment and commonly found in homes (based on onsite sampling and culture-based work)?
6. What the Environmental Relative Mouldiness Index (ERMI) means and on what it is based on?
7. What are the building factors that affect indoor mould growth?
8. What types of energy efficiency measures in buildings can affect the risk of mold growth and how? Provide some examples (case studies).
9. Why the current temperature and humidity standards are insufficient to consider the temporal and spatial variations of temperature and humidity annually and their potential effects, and thus refined requirements to control excess moisture and dampness indoors?
10. Why many of the critical values for airborne fungi given in different standards are unsuitable for current indoor environments?

**LECTURE TASK (INDIVIDUAL OR PAIR WORK)** It is optional to leave this here as a part of the learning report. However, note that the although the lecture task is optional, getting the grade 3-5 from a learning diary requires (among other requirements) reflection on a lecture task in the learning diary.

Read the article Cox et al. 2020 (*Jennie Cox, Hamza Mbareche, William G. Lindsley & Caroline Duchaine (2020) Field sampling of indoor bioaerosols, Aerosol Science and Technology, 54:5, 572-584, DOI: 10.1080/02786826.2019.1688759. Available online at:* [*https://doi.org/10.1080/02786826.2019.1688759*](https://doi.org/10.1080/02786826.2019.1688759))) and

1) Describe the term bioaerosols

2) Introduce the sources of indoor bioaerosols

3) Present the conditions at each sampling location and relevant other information should always be recorded when sampling bioaerosols.

4) Compare culture-based and molecular methods (their benefits and constraints) for collecting microbial samples.

5) Describe the common problems and misconceptions with indoor bioaerosol and lists guidelines for minimizing problems and misunderstanding

6) What are the future needs for field sampling of bioaerosols and interpretation of the results.

**PART 3, TASK 2. Learning diary, teaching 7th March 2023**

(Length: 500-1000 words; Font: Times New Roman; font size: 11) **(max. 5 points)**

Reflect on what you have learned from the in-advance homework (Task 1), lecture and lecture task. If necessary, see the INFO-document for more instructions on writing a learning diary.

Note that the although the lecture task is optional, getting the grade 3-5 from a learning diary requires (among other requirements) reflection on a lecture task in the learning diary. If you are unable to attend the lecture, do the task independently.

**PART 3 DEADLINE: 16TH MARCH 2023 AT 23:59.**

**MARCH 2022 AT 23:59.**

Note! When you download Part 3 of your learning report to the MyCourse, you can download your report up to Part 3 (including parts 1-3) and "clean up" other parts of the report template (instructions and parts 4-10), or you can submit the entire report template including the completed parts 1-3. Proceed with the same logic when downloading other parts.

**(NOTE! PART 10 STARTS ON 9TH MARCH 2023, AND WILL CONTINUE IN THE TEACHING EVENT 4TH APRIL 2023 AT 9-12, WHICH IS A MANDATORY PRESENTATION EVENT)**

**PART 4: METHODS AND GOOD PRACTICES FOR ASSESSING INDOOR AIR QUALITY**

**MAX. 5 POINTS**

**TEACHING EVENT IN OTANIEMI (LECTURE ROOM R2) ON 16TH MARCH 2023**

**(PART 4 INCLUDES ONE MANDATORY TASK)**

**LECTURE TASK (GROUP WORK)** (Note! It is optional to leave this here as a part of the learning report. However, write what you learned from this assignment in your learning diary)

Read the article “Lahtinen et al. 2008. Multiprofessional teams resolving indoor-air problems—emphasis on the psychosocial perspective” and describe the selected part (1-5 below) of the problem-solving model for complex indoor air problems

**The problem-solving model for complex indoor air problems**

1. The consists and task of the indoor air group (Group 1)
2. Challenges of multiprofessional teamwork in indoor air problems (Group 2)
3. Problem diagnosis, risk evaluation and setting of objectives (Group 3)
4. Risk communication (Group 4)
5. Follow up (Group 5)

**PART 4, TASK 1. Learning diary, teaching 16th March 2023**

(Length: 500-1000 words; Font: Times New Roman; font size: 11) **(max 5 points)**

Reflect on what you have learned in the lecture. If necessary, see the INFO-document for more instructions on writing a learning diary.

Note that the although the lecture task is optional, getting the grade 3-5 from a learning diary requires (among other requirements) reflection on a lecture task in the learning diary. If you are unable to attend the lecture, do the task independently.

**PART 4 DEADLINE: 31st MARCH 2023 AT 23:59**

**MARCH 2022 AT 23:59.**

**PART 5: MEASUREMENT METHOD AND MEASUREMENT DEMONSTRATION**

**MAX. 5 POINTS**

**TEACHING EVENT IN OTANIEMI (LECTURE ROOM R2) ON 21st MARCH 2023 AT 9:15-12:00**

**(PART 4 INCLUDES ONE MANDATORY TASK)**

**PART 5, TASK 1. Learning diary, teaching 21st March 2023**

(Length: 500-1000 words; Font: Times New Roman; font size: 11) **(max. 5 points)**

Reflect on what you have learned from visiting lectures and homework (if you did it). If necessary, see the INFO-document for more instructions on writing a learning diary.

**OPTIONAL Homework:**

**Read the following article and answer the questions**:

Kumar P, Skouloudis A.N, Bell M, Viana M, Carotta M.C, Biskos G, Morawska L. Real-time sensors for indoor air monitoring and challenges ahead in deploying them to urban buildings. [Science of The Total Environment](https://www.sciencedirect.com/science/journal/00489697). [Volumes 560–561](https://www.sciencedirect.com/science/journal/00489697/560/supp/C), 1 August 2016, Pages 150-159.

1. Although conventional analytical instruments can be used to accurately measure the concentration of the several pollutants found in the indoor environment, they are not practical. Why? List the reasons.
2. List two traditional methods to measure particle matter (PM).
3. What is the major limitation of OPCs (optical particle counters), including the new generation of portable instruments?
4. List the potential benefits of IAQ sensing compared with traditional monitoring.

**PART 4 DEADLINE 31st MARCH 2023 AT 23:59.**

**MARCH 2022 AT 23:59.**

**START PART 9 (INDIVIDUAL ARTICLE/SEMINAR ASSIGNMENT) ON 14TH MARCH 2023. SEE INSTRUCTIONS BELOW (PART 9) OR FROM THE INFO-DOCUMENT.**

**THERE IS NO CONTACT TEACHING ON 14TH MARCH 2023! INDOOR CLIMATE SEMINAR WILL BE ORGANIZED ON THAT DAY (see options for individual assignment).**

PLEASE NOTE THAT THE DEADLINE FOR REGISTERING FOR THE INDOOR CLIMATE SEMINAR IS 6TH MARCH 2023! SEE THE LINK:

https://www.sisailmayhdistys.fi/Tapahtumat/Sisailmastoseminaarit/Sisailmastoseminaari-2023

**PART 6: INDOOR CLIMATE CLASSIFICATION, INDOOR QUALITY QUIDELINES**

**MAX. 5 POINTS**

**TEACHING EVENT IN OTANIEMI (LECTURE ROOM R2) ON 23rd MARCH 2023**

**(PART 6 INCLUDES ONE MANDATORY TASK)**

**Lecture task (pair work):**

The lecture task is optional but getting the grade 3-5 from a learning diary requires (among other requirements) reflection on a lecture task in the learning diary. You can also attach lecture task materials, e.g., as pictures, as part of your learning report

**PART 6, TASK 1. Learning diary, teaching 23rd March 2023**

(Length: 500-1000 words; Font: Times New Roman; font size: 11) **(max. 5 points).**

Reflect on what you have learned from the lecture, lecture task and optional homework (if you did it). If necessary, see the INFO-document for more instructions on writing a learning diary.

Note that the although the lecture task is optional, getting the grade 3-5 from a learning diary requires (among other requirements) reflection on a lecture task in the learning diary. If you are unable to attend the lecture, do the task independently.

**OPTIONAL HOMEWORK ASSIGNMENT 1:**

Read the article “*Fromme et al. The German approach to regulate indoor air contaminants. 2019. Volume 222, Issue 3, Pages 347-354*” and answer the questions/explain the terms:

Give the definitions (used by the German Committee on Indoor Guide Values (AIR) for the following:

* Limit values
* Guide values (GV)
* Guidelines (GL)
* Reference values
* Precautionary guide value (GV I)
* Health hazard guide value (GV II)

2. What kind of concentration levels and specific recommendations the Committee recommends for TVOC?

3. What kind of CO2 guidelines (based on health and hygiene consideration) were made by the Committee?

4. According to the Committee, what should be done if the

a) indoor air guide value is exceeded?

b) health hazard guide value (GV II) is exceeded?

c) precautionary guide value (GV I) is exceeded?

**OPTIONAL HOMEWORK ASSIGNMENT 2:**

**Read the following publication and answer the questions and fill the tables.**

Decree of the Ministry of Social Affairs and Health on Health-related Conditions of Housing and Other Residential Buildings and Qualification. Requirements for Third-party Experts (545/2015). Ministry of Social Affairs and Health. Available online at: https://www.finlex.fi/en/laki/kaannokset/2015/en20150545.pdf

The Finnish version: <http://stm.fi/documents/1271139/1408010/Asumisterveysasetus/>

1. Give the definition for the following terms:
   1. Action limit for exposure agent
   2. Chemical agent
   3. Volatile organic compounds
   4. Respirable particles (PM10)
   5. Fine particles (PM2.5)
2. List the two general evaluation principles regarding the physical, chemical and biological factors of housing and other residential buildings

a)

b)

1. Complete the following paragraph:

*Section 14. Measurement of chemical agents*

An air sample shall be taken in the residential zone \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Fill the table 2 with the action limit values proposed in the Decree of the Ministry of Social Affairs and Health on Health-related Conditions of Housing and Other Residential Buildings and Qualification Requirements for Third-party Experts (545/2015).

Table 2.

|  |  |  |
| --- | --- | --- |
| Pollutant/Compound | Action limit value/Maximum value | Note! |
| Total indoor concentration of volatile organic compounds |  |  |
| Total indoor concentration of a single volatile organic compound |  |  |
| 2,2,4-trimethyl-1,3-  pentanediol diisobutyrate (TXIB) |  |  |
| 2-ethyl-1-hexanol (2EH) |  |  |
| Naphthalene |  |  |
| Styrene |  |  |
| Formaldehyde |  |  |
| Carbon monoxide |  |  |
| Indoor air tobacco  smoke measured as nicotine content |  |  |
| Respirable particles (PM10) |  |  |
| Fine particles (PM2.5) |  |  |
| Industrial mineral fibres |  |  |
| Asbestos |  |  |
| Microbes |  |  |

**OPTIONAL HOMEWORK ASSIGNMENT 3:**

**Read the following publications and answer the questions and fill the tables.**

“WHO guidelines for the selected pollutants”(2010), Read at least the following: pages xvi-xxv (Executive summary), pages 1-13 (Introduction), 38-39 (Guidelines, Benzene), 86-88 (Guidelines, Carbon monoxide),140-142 (Guidelines, Formaldehyde), 185-186 (Guidelines, Napthalene), 246-248 (Guidelines, Nitrogen dioxide), 323-325 (Guidelines, PAH), 367-369(Guidelines, Radon), 402-403 (Guidelines, Trichloryethylene (TCE)), 442-443 (Guidelines, tetrachloroethylene (PCE)). Available online at: **http://www.euro.who.int/\_\_data/assets/pdf\_file/0009/128169/e94535.pdf**

“WHO guidelines for dampness and mould (p. 2 (BOX1), Chapter 1.4, and Chapter 5” (2009). Available online at: <https://ac.els-cdn.com/S1309104215301689/1-s2.0-S1309104215301689-main.pdf?_tid=9a724746-6dc4-4a63-888f-8f782f00fd64&acdnat=1546998574_983bf3d0d1289d0b59b789e26694689b> Available online at: **http://www.euro.who.int/\_\_data/assets/pdf\_file/0017/43325/E92645.pdf**

1. **Work on assessing the health effects of indoor air pollution has lagged behind that on outdoor air pollution for a number of reasons. List the reasons.**
2. **Complete the following paragraph:**

According to the WHO document, acceptable indoor air quality can be achieved through source control and pollutant dispersion, and in particular through:

-

-

-

-

1. **Fill the table 1 with the WHO guidelines for the selected pollutants.**

Table 1. WHO guidelines for the selected pollutants:

|  |  |  |
| --- | --- | --- |
| **Pollutant/Compound** | **WHO guideline** | **Note!** |
| Benzene |  |  |
| Carbon monoxide |  |  |
| Formaldehyde |  |  |
| Naphthalene |  |  |
| Nitrogen dioxide |  |  |
| Polycyclic aromatic hydrocarbons |  |  |
| Radon |  |  |
| Trichloroethylene |  |  |
| Tetrachloroethylene |  |  |
| Microorganisms |  |  |

**PART 6 DEADLINE: 31st MARCH 2023 AT 23:59.**

**MARCH 2022 AT 23:59.**

**PART 7: COMPANY VISIT**

**MAX. 5 POINTS**

**VISIT TO VAHANEN (LINNOITUSTIE 5, 02600 ESPOO) ON 28TH MARCH 2023**

**(PART 7 INCLUDES ONE MANDATORY TASK)**

**PART 7. TASK 1. Learning diary, company visit 28th March 2023**

(Length: 500-1000 words; Font: Times New Roman; font size: 11) **(max 5 points)**

Reflect on what you have learned during the company visit. If necessary, see the INFO-document for more instructions on writing a learning diary.

**PART 7 DEADLINE: 14TH APRIL 2023 AT 23:59.**

**PART 8: CLIMATE CHANGE AND INDOOR AIR QUALITY**

**MAX. 5 POINTS**

**TEACHING IN OTANIEMI ON 3rd APRIL 2023 AT 14:15-16:00**

**(PART 8 INCLUDES ONE MANDATORY TASK)**

**Homework reading assignment before teaching on 3rd April 2023:**

**Read the following articles:**

* Institute of Medicine. 2011. Climate Change, the Indoor Environment and Health. Available online at: <http://www.nationalacademies.org/hmd/~/media/Files/Report%20Files/2011/Climate-Change-the-Indoor-Environment-and-Health/Climate%20Change%202011%20Report%20Brief.pdf>
* Fisk. 2015. Review of some effects of climate change on indoor environmental quality and health and associated no-regrets mitigation measures. Building and Environment. Volume 86, pages 70-80. Available online at: <https://www.sciencedirect.com/science/article/pii/S0360132314004417>

The homework reading assignment will help you complete the lecture task.

**LECTURE TASK: prepare a poster titled “Climate change and indoor air quality”.**

The lecture task is optional but getting the grade 3-5 from a learning diary requires (among other requirements) reflection on a lecture task in the learning diary.

Use Institute of Medicine 2011 and Fisk 2015 publications as references.

Include poster (as an image) into your learning diary (Part 8, task 1).

**PART 8, TASK 1. Learning diary, teaching 3rd March 2023**

(Length: 500-1000 words; Font: Times New Roman; font size: 11)+ add your 1-page poster after the diary text) **(max 5 points)**

Reflect on what you have learned from the homework reading assignment, lecture, and lecture task (include your poster prepared during the lecture task as a part of your learning diary). If necessary, see the INFO-document for more instructions on writing a learning diary.

Note that the although the lecture task is optional, getting the grade 3-5 from a learning diary requires (among other requirements) reflection on a lecture task in the learning diary. If you are unable to attend the lecture, do the task independently.

**PART 8 DEADLINE: 14TH APRIL 2023 AT 23:59.**

**PART 9: INDIVIDUAL ARTICLE/SEMINAR ASSIGNMENT**

**MAX. 18 POINTS**

**PART 9 PRESENTATION EVENT (MANDATORY INDIVIDUAL PRESENTATION EVENT) WILL BE ON 4TH APRIL AT 9:15-12 IN OTANIEMI (LECTURE ROOM R2)**

**(PART 9 INCLUDES ONE MANDATORY TASK)**

**LEARNING DIARY IS NOT NEEDED FROM THE PART 9.**

**PART 9, TASK 1. Individual article/seminar extended abstract (max 18 points) and presentation (7-8 min) about your extended abstract** **(mandatory)**.

**Select A or B:**

1. **Individual article assignment:** Read one selected journal article (see the list of the articles in the MyCourse and book one article for yourself) and **prepare an extended abstract** about the article and **a 7-8 min power point presentation about your extended abstract**.

**OR**

1. **Individual seminar assignment:** Participate to the national Indoor Climate Seminar 2023 (NOTE THAT THE SEMINAR IS MAINLY IN FINNISH AND LOCATED IN MESSUKESKUS) 14th March 2023 at 8:45-16:15 and select one “full conference paper” (can be found from the Indoor Climate Seminar webpage) and **prepare an extended abstract** about the conference full paper and **a 7-8 min power point presentation about your extended abstract**.

**If you will participate to the seminar, please register by 6th March 2023 via the link:**

https://www.sisailmayhdistys.fi/Tapahtumat/Sisailmastoseminaarit/Sisailmastoseminaari-2023

The student fee of the seminar is 35 eur + alv. 24 %.

Mark your selection (choose one article for the “individual article assignment” or choose “individual seminar assignment”) in MyCourses! Max 2 students can choose the same article!

Instructions how to prepare an extended abstract can be found in the extended abstract template (see the document “***Template for extended abstract\_Part 9***” in MyCourses).

**Include both the extended abstract as well as your presentation slides (as an images) to your learning report.**

**PART 9 DEADLINE: 14th APRIL 2023 AT 23:59.**

**PART 10: COURSE GROUP WORK**

**MAX 30 POINTS**

**TEACHING IN OTANIEMI ON 9TH MARCH 2023 AT 9:15-11 (INFO ABOUT THE COURSE GROUP WORK) +**

**TEACHING IN OTANIEMI ON 13TH APRIL 2023 AT 9:15-11 (MANDATORY PRESENTATION EVENT)**

**(PART 10 INCLUDES ONE MANDATORY TASK = GROUP WORK), LEARNING DIARY IS NOT NEEDED FROM THE PART 10.**

**NOTE: Deadline for choosing** **the group and topic is 6th March 2023 at 23:59!**

**PART 10, TASK 1. Group work – RETURNED SEPARATELY IN MYCOURSES**

**NOTE! USE THE SUBMISSION BOX FOR THE GROUP WORK (CONFERENCE PUBLICATION + CONFERENCE PRESENTATION SLIDES) IN MYCOURSES (ONE SUBMISSION / GROUP).**

**You don’t have to add the group work (conference publication + conference presentation slides) in this learning diary.**

**(max 30 points)**

Conference publication and 10-12 min presentation about your publication (mandatory).

Prepare a conference publication using the given Template and searching needed literature by using e.g., the Google Scholar and PubMed.

The Template can be found in MyCourses (Word Document: **“*Template for conference publication\_ Part 10­\_group work*”.**

NOTE!! You should have the first whole version of the conference publication as well as your conference presentation slides ready by 12th April 2023 (presentation event will be on 13th April 2023).

**UPLOAD YOUR FINAL GROUP WORK (ONE SUBMISSION/GROUP) TO MYCOURSES!**

Final grade of the course group work based on the conference publication. However, the presentation is mandatory and teacher as well as other students will give the feedback to each group.

**COURSE GROUP WORK\* DEADLINE 14TH APRIL 2023 AT 23:59.**

**\*Conference publication + conference presentation slides**

**MY FEEDBACK AND THOUGHTS AT THE END OF THE COURSE A close up of a logo

Description automatically generated**

1. The best things on the course (list 3 things)?
2. How can we improve the course (1-3 most important things)?
3. Did the different tasks support your learning?
4. Was the workload suitable?
5. What was the level of course difficulty (appropriate, too challenging, too easy)?
6. Do you prefer remote or contact teaching? Why?
7. Other feedback you want to give about the course?

**THE FINAL LEARNING REPORT (INCLUDING “YOUR EXPECTATIONS AND THOUGHTS IN THE BEGINNING OF THE COURSE”, “PARTS 1-10” AND “YOUR FEEDBACK AND THOUGHTS AT THE END OF THE COURSE”) DEADLINE IS 14TH APRIL 2023 AT 23:59.**