

# Urban hydrological modelling

## Applications with SWMM

WAT-E2030 Hydrological Modelling  
16.2.2023



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Finnish pioneer project, Kartanonkoski, City of Vantaa. Designers Ismo Häkkinen, Petra Tammisto and Ulla Loukkaanhuhta, constructor VRJ Etelä-Suomi Oy/City of Vantaa. Photo: Mikko Sillanpää

# Schedule and contents

## Monday 13 Feb, 9:00-12:00

- Introduction to the topic
- Individual modelling work begins

- Instructions and materials for the individual modelling assignment is given in MyCourses.
- Group work is based on the individual modelling work.

## Thursday 16 Feb, 12:30-16:00

- Short presentation
- Individual modelling work (cont.)
- Group work begins

## Monday 20 Feb, 9:00-12:00

- Group work (cont.)
- Group presentations
- Feedback and farewell

Time	Mon 13 Feb (9:00-12:00) Session 1	Time	Thu 16 Feb (12:30-16:00) Session 2	Time	Mon 20 Feb (9:00-12:00) Session 3
9:00-10:00	Lecture: Introduction to the week and topic	12:30-13:00	Short presentation	9:00-10:00	Introduction to the day's work
10:00-11:00	Individual modelling exercise	13:00-14:00	Students work with individual modelling exercise	10:00-11:00	Group work continues Group presentations
	SWMM demo (voluntary)	14:00-15:00		11:00-12:00	
11:00-12:00		15:00-16:00	Introduction to group work		
			Group work begins		Feedback

# Today

Time	<i>Thu 17 Feb (12:30-16:00)</i> <b>Session 2</b>
12:30-13:00	Short presentation
13:00-14:45	Individual modelling exercise
14:45-16:00	Introduction Group work begins

Research example with SWMM, Camilla Tuomela

Individual modelling work continues (Zoom):

- Finalize your LID design
- Finish your results for the Part 1 of your written report

Important:

- Your individual modelling work creates the basis for your group work.

# Group work, Phase 1

*Instructions for the group work are also presented in MyCourses as a separate pdf document and in the lecture slides.*

Group no.	Group members	Catchment no.
Group A	Caroline Luhtajärvi Charlotta Toiskallio Frida Mitts Essi Leskinen Tuomas Ridanpää	Catchment 1
Group B	Veera Korteniemi Ville Vanhanen Pihla Seppälä Yingxin Deng Reeta Vaahtera	Catchment 2
Group C	Sofia Harri Kaisa Korhonen Tuomas Haapala Daria Popova Antonino Merlo	Catchment 3
Group D	Lauri Parikka Enni Isokangas Bhatarabhop Viriyaraj Tetiama Porokhivnyk	Catchment 1
Group E	Aarni-Matti Mäntyselkä Iiris Nieminen Nasti Valotie Joonas Lepistö Bhatarabhop Viriyaraj	Catchment 2
Group F	Maiju Idman Juha-Matti Välimäki Wenli Lin Antti Kallanranta Tiia Westerberg	Catchment 3

# Group work, Phase 1

## **1) Organization of the group work:**

*Select one of the group members as a project manager. Project manager's task is to make sure that the group work proceeds in schedule.*

## **2) Sharing experiences from the individual modelling work:**

*Each group member explains, what kind of LID design he/she created during the individual modelling exercise and the main findings about how well the LID system improved the catchment's hydrology.*

## **3) Selection of the optimal solution/best design:**

*Group decides the best solution for their study catchment. You can create a completely new design. You may select one of your individual designs as a template for the group design.*

Remember, you have about 1 hour on Thursday reserved for the group work/Phase 1.

During the next teaching session on Monday 20 Feb, you will build your group model. You will repeat the rainfall-runoff simulations with your group model. Additionally, you will be given a specific research question for your group simulations.