FACULTY OF
BIOSCIENCE ENGINEERING

DEPARTMENT OF ENVIRONMENT
SOIL-ENVIRONMENT SYSTEMS
EXPLORATION & ENGINEERING GROUP

SEM1

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GHENT UNIVERSITY

SENSE Soil-Environment System Exploration & Engineering

unesco Chair

ESSC EUROPEAN SOCIETY for SOIL CONSERVATION

ORGANISATION OF THE COURSE

Week	Off-campus activity[2]	Date	Location/room	Time	On-campus activity[3]
1	LEC1+2: Chapter 1, 2, 3	23/09	Field Bottelare	13:00-18:00	EXC1: Field work: soil sampling, soil quality + soil-water status monitoring (chapter 2, 3, 6, 7)
2		30/09	Field Bottelare	13:00-18:00	EXC1: Field work: soil sampling, soil quality + soil-water status monitoring (chapter 2, 3, 6, 7)
3	LEC3: Chapter 4, 5	07/10	LES 0.1 Dunant	13:00-16:00	SEM1: Problem 1, 4 (chapter 2, 3, 4, 5) + Q&A
4	LEC4: Chapter 6	14/10	LES 0.1 Dunant	13:00-16:00	SEM2: Problem 2, 3 (chapter 4, 5, 6) + Q&A
5	LEC5: Chapter 7	21/10	VGZ B0.3 Graniet	13:00-19:00	PRA1: Laboratory work: water characteristic function + water content & matric potential (chapter 2, 5, 6, 7)
6	LEC6: Chapter 8, 9	28/10	PRA B4.2	13:00-19:00	PRA2: Laboratory work: hydraulic conductivity (chapter 8, 9)
7	LEC7: Chapter 10	04/11	LES 0.1 Dunant	13:00-17:00	SEM3: Problem 4, 5, 6 (chapter 7, 8, 9, 10) + Q&A
8	LEC8: Chapter 11, 12	11/11			
9		18/11	LES 0.1 Dunant	13:00-17:00	PRA3: PC work: soil hydraulic models (chapter 7, 10)
10		25/11	LES 0.1 Dunant	13:00-17:00	PRA4: PC work: modeling water flow – effect of land use (chapter 10)
		27/11	LES 0.1 Dunant	14:00-18:00	PRA5: PC work: modeling water flow – effect of land management (chapter 3, 10)
11		02/12	VGZ B0.1 Kwarts	13:30-18:30	EXC2: Field work: hydraulic conductivity (chapter 9)
12		09/12	VGZ B0.1 Kwarts	12:00-19:00	GRO: Group presentation + discussion on PRA4 + PRA5: PC work: modeling water flow
		12/12	LES 0.1 Dunant	13:00-16:00	SEM4: Booster session

Video lecture (LEC)	Wim
Seminar (SEM)	Wim
Excursion: field (EXC)	Lotte
Practicum: lab (PRA)	Lotte
Practicum: PC (PRA)	Lotte
Group presentation (GRO)	Lotte

OBJECTIVES

- Gain practice in solving basic exercises on state variables; such calculations may be part of periodic exams (using a pocket calculator).
- Develop a deeper understanding of theory and its application to practical cases
  - Monitoring soil-water content using sensors (indirect measurement)
  - Process raw sensor data to calculate soil water content and present it as a time series
  - Use data to assess effective root depth
  - Apply data to derive components of the soil water balance
- Enhance problem solving skills through active learning
- Understand how soil-water content data for PRA4 are generated