

## Application of Modern Technologies in Reconstruction of Geodetic Networks (3.0 ECTS)

Course venue: Latvia University of Life Sciences and Technologies, Jelgava, Latvia

Distance learning part May 6, 2024

Meeting in person 20<sup>th</sup> – 24<sup>th</sup> May, 2024

### Course programme

**Sunday** 19.05.2024 Arrival, registration

**Monday** 20.05.2024

8.30 – 9.00	Welcome, introduction of participants		A. Celms;
9.00 – 10.30	Geospatial frame in economy of states	Economy of states and geolocation.	H. Jürgenson, G. Balevicius A. Celms
10.30 – 10.45	Coffee break		
10.45 – 12.15	Different types of geodetic technologies.	Challenges in the development of geodetic systems.	J. Luksa H. Jürgenson G. Balevičius
12.15 – 13.15	Lunch		
13.15 – 14.45	Significance of Geodetic Systems	Significance of Geodetic Network in State development (Why we need geodetic reference systems. Examples and discussion).	G. Balevičius N. Liba A. Celms
14.45 – 15.00	Coffee break		
15.00 – 17.00	Development of State network system.	History of basic geodetic network development. (Development of horizontal and vertical geodetic network)	G. Balevičius H. Jurgenson A. Celms

**Tuesday** 21.05.2024

9.00 – 10.30	Principles of construction of integrated geodetic networks	Integration of Levelling, GNSS, Gravimetric and Magnetometric geodetic networks.	H. Jürgenson, D. Rekus, J. Luksa
10.30 – 10.45	Coffee break		
10.45 – 12.15	Construction of integrated geodetic networks	Practise in groups. Planning and construction of integrated geodetic system.	N. Liba, G. Balevičius, A. Celms
12.15 – 13.15	Lunch		
13.15 – 14.45	Field measurements	Practise in field. Measurements with different types of geodetic instruments.	N. Liba J. Luksa H. Jürgenson G. Balevičius J. Valciukiene A. Celms
14.45 – 15.00	Coffee break		
15.00 – 17.00	Field measurements		

**Wednesday 22.05.2024**

9.00 – 17.00	Field trip to Riga	National geodetic support system structure and functions	J. Valciukiene A. Celms
		Mean sea level (Tide gauge station)	

**Thursday 23.05.2024**

9.00 – 10.30	Land surveying and its supervision	Corrects field measurements.	H. Jürgenson, D. Rekus, A. Celms
10.30 – 10.45	Coffee break		
10.45 – 12.15	Calculation of geodetic data.	Practise in groups. Calculation of geodetic data.	N. Liba, G.Balevičius, A. Celms
12.15 – 13.15	Lunch		
13.15 – 14.45	Field measurements	Practise in field. Measurements with different types of geodetic technologies.	N. Liba J. Luksa H. Jürgenson G.Balevičius J. Valciukiene A.Celms
14.45 – 15.00	Coffee break		
15.00 – 17.00	Field measurements		

**Friday 24.05.2024**

9.00 – 10.30	Perspective model of national geodetic system in Baltic countries and context of Europe. Presentations prepared by students. Discussions	H. Jürgenson, D. Rekus, A.Celms
10.30 – 10.45	Coffee break	
10.45 – 12.15	Perspective model of national Geospatial system in Baltic countries and context of Europe. Discussions	H. Jurgenson D. Rekus A.Celms
12.15 – 13.15	Lunch	
13.15 – 14.00	Summary of the topics covered during the course	A. Celms N.Liba, G.Balevičius
14.00 – 15.00	Test. End of the course	A. Celms J. Valciukiene G. Balevičius

**Teachers:**

1. Course leader Armands Celms, Dr. sc.ing., professor, Latvia
2. Jolanta Luksa, Mg.sc.ing.. Lecturer, Latvia
3. Natalja Liba, Doctor of techn.sc. (PhD), professor, Estonia
4. Harli Jürgenson, Doctor of techn.sc. (PhD), professor, Estonia
5. Giedrius Balevičius, MSc geodesy, Lecturer, Lithuania
6. Jolanta Valciukiene, Doctor of technology science, Associate professor, Lithuania