

Study Programme: Geodesy
Course Unit Title: Geodetic networks
Course Unit Code: GE18
Name of Lecturer(s): Associate Professor Siniša Delčev
Type and Level of Studies: Basic academic studies
Course Status (compulsory/elective): Compulsory
Semester (winter/summer): Summer
Language of instruction: English
Mode of course unit delivery (face-to-face/distance learning): Face-to-face
Number of ECTS Allocated: 5
Prerequisites: None
<p>Course Aims:</p> <p>The students mastering with the theory, principles and methods for development of geodetic reference network and the network of special purpose.</p>
<p>Learning Outcomes:</p> <p>Students are trained to independently perform all the necessary calculations required to create a project of any kind of geodesic networks.</p>
<p>Syllabus:</p> <p><i>Theory</i></p> <ol style="list-style-type: none"> 1. week The subject, objectives and tasks of the geodetic reference network. A brief historical development of geodetic reference networks. 2. week Reference systems and geodetic Datum, shortly. Horizontal Datum and positioning of the horizontal Datum. 3. week Principles of developing the geodetic reference network. Horizontal networks. 4. week Shape, testing of accuracy and reliability, analysis and detailed elaboration of the methods of measurement. 5. week Reduction parameters - accuracy and analysis of methods for their determination. 6. week Reduction parameters - accuracy and analysis of methods for their determination. 7. week Measurement and processing of measurement results, with accuracy estimation, in horizontal networks. 8. week I colloquium. 9. week Systems heights. Gravimetric networks. 10. week The vertical Datum and positioning of the vertical Datum. The height networks. Shape, testing of accuracy and reliability, analysis and detailed elaboration of the methods of measurement. 11. week Calculation of reduction parameters. The problem of reducing the measured acceleration of the earth's gravity. Measurement and analysis of the results of measurements in height networks. 12. week Trigonometric networks of lower orders and polygonal networks - basic principles of developing, processing and accuracy estimation. 13. week City geodetic networks - history and basic principles of developing and processing. 14. week Special purpose geodetic networks - basic principles of developing and processing. 15. week II colloquium.

Practice

He follows the course of theoretical classes.

Required Reading:

1. Vaniček P., Krakivsky E., Geodesy: the concept, North-Holland Publishing company, Amsterdam - New York - Oxford, The Netherlands, 1980.
2. S. Delčev: Zbirka rešenih zadataka iz geodetskih referentnih mreža, Građevinski fakultet Univerziteta u Beogradu, ISBN 978-86-7518-094-4, 2009.
3. S. Ašanin, Inženjerska geodezija 1, Ageo d.o.o, Beograd, 2003.

Weekly Contact Hours:

Lectures: 30

Practical work: 30

Teaching Methods:

Lectures, exercises, colloquiums, consultations.

Knowledge Assessment (maximum of 100 points):

Pre-exam obligations	points	Final exam	points
Active class participation	5	written exam	(40)
Practical work	5	oral exam	50
Preliminary exam(s)	40	

The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.