

Geodesy (C003530)

Due to Covid 19, the education and evaluation methods may vary from the information displayed in the schedules and course details. Any changes will be communicated on Ufora.

Course size (nominal values; actual values may depend on programme)
Credits 5.0 Study time 150 h Contact hrs 55.0 h

Course offerings and teaching methods in academic year 2020-2021

A (semester 2)	Dutch, English	Gent	seminar: practical PC room classes	16.25 h
			seminar	8.75 h
			lecture	21.25 h

Lecturers in academic year 2020-2021

Huang, Haosheng	WE12	lecturer-in-charge
De Maeyer, Philippe	WE12	co-lecturer

Offered in the following programmes in 2020-2021

	crdts	offering
Bachelor of Science in Geography and Geomatics	5	A
Linking Course Master of Science in Geography and Geomatics	5	A
Preparatory Course Master of Science in Geography and Geomatics	5	A

Teaching languages

Dutch, English

Keywords

Cartography, gravimetry, cartographic systems, geodetic datum, transformations, cosmography, time.

Position of the course

Study of basic terminology related to astronomic localisation and navigation, consequences of the movements of the earth and the moon, influence of tides, time, geodetic calculations and definition of cartographic systems.

Contents

Initial competences

Knowledge of plane trigonometry

Final competences

- 1 De fundamentele concepten betreffende de problemen van astronomische plaatsbepaling en navigatie, gevolgen van de bewegingen van de maan en aarde, rol van getijden, tijdsbepaling, geodetische berekeningen en definiëringen en cartografische systemen beheersen.
- 2 Kunnen uitvoeren van positiebepalingen op de bol, inclusief coördinaattransformaties.
- 3 Het meest geschikte cartografisch systeem kunnen selecteren voor een bepaalde probleemstelling. Voorstellingen op kaarten kunnen gebruiken en evalueren.
- 4 De juiste datumtransformatie kunnen selecteren en uitvoeren.
- 5 Sterrenbeelden kunnen herkennen en aanduiden in de hemelsfeer.
- 6 Kunnen werken met enkele meetinstrumenten die aan te basis van de geodesie liggen (vb. sectant).

Conditions for credit contract

Access to this course unit via a credit contract is determined after successful competences assessment

Conditions for exam contract

This course unit cannot be taken via an exam contract

Teaching methods

Lecture, seminar, seminar: practical PC room classes, online lecture

Learning materials and price

Theory: course + slides

Exercises: slides + assignments

(see Ufora)

Estimated cost: 50 EUR

References

- Lu, Z., Qu, Y. & Qiao, S. (2014) *Geodesy. An introduction to Geodetic Datum and Geodetic Systems*. Berlin: Springer-Verlag, 383.
- Jin, S.G. (Ed.) (2013) *Geodetic Sciences: Observations, Modelling and Applications*. Rijeka: InTech-Publisher, 344.
- Meyer, H.M. (2010) *Introduction to Geometrical and Physical Geodesy: Foundations of Geomatics*. Redlands: ESRI Press, 260.
- Herring, T.A. (Ed.) (2009) *Geodesy*. In: Schubert G. (Ed.) *Treatise on Geophysics*. Oxford: Elsevier, 464.
- Grafarend, E.W., You, R., Syffus, R. (2014) *Map Projections*. Berlin: Springer, 935.
- Illife, J. & Lott, R. (2008) *Datums and Map Projections: for Remote Sensing, GIS and Surveying*. Caithness: Whittles Publishing, 192.
- Snyder, J. P. (1987). *Map projections--A working manual* (Vol. 1395). US Government Printing Office.
- DiBiase, D., DeMers, M., Johnson, A., Kemp, K., Taylor Luck, A., Plewe, B., Wentz, E. (eds.) (2006). *Geographic information science & technology Body of Knowledge*, University Consortium for geographic information science. Washington, DC: AAG.

Course content-related study coaching

Theory: after the lesson or after an electronic appointment

Exercises: during the practical sessions or after an electronic appointment

Evaluation methods

end-of-term evaluation and continuous assessment

Examination methods in case of periodic evaluation during the first examination period

Written examination with open questions

Examination methods in case of periodic evaluation during the second examination period

Written examination with open questions

Examination methods in case of permanent evaluation

Assignment

Possibilities of retake in case of permanent evaluation

examination during the second examination period is possible in modified form

Extra information on the examination methods

Periodegebonden evaluatie: Schriftelijk examen, deels open boek en deels gesloten boek (zie concrete afspraken op Ufora), met open vragen: toetsen van inzicht in de basisconcepten (zie inhoud) via toepassingsgerichte inhoudsvragen; toetsen van toepassingsvermogen van deze basisconcepten in concrete probleemstellingen, deels multiple-choice.

Niet-periodegebonden evaluatie over de in te dienen oefeningen in de werkcolleges.

Calculation of the examination mark