

# Course Specifications

Valid as from the academic year 2024-2025

## 3D Acquisition and Modelling (C004180)

Course size	(nominal values; actual va	alues may depend on progr	amme)		
Credits 5.0	Study time 150 h				
Course offerings and t	eaching methods in academ	ic year 2025-2026			
A (semester 1)	Dutch Gent Le		cture		
Lecturers in academic	year 2025-2026				
De Wulf, Alain	WE12		lecturer-in-charge		
Offered in the following programmes in 2025-2026			crdts	offering	
Master of Science Geomatics) Master of Science	e in Teaching in Science and Te e in Geography and Geomatics	echnology(main subject Geo	igraphy and	5 5	A A
Teaching languages					
Dutch					
Keywords					
3D- registration & photogrammetry	r visualization, laser scanning, , photo modelling, CAD.	technical photography, ter	restrial		
Position of the course					
<ul> <li>Laser scanning:</li> <li>Photogrammet of terrestrial pl</li> <li>Photo modellin orthophotoplar</li> <li>Use of CAD soft The intention is the representation of photogrammetry</li> </ul>	acquisition, data analysis and ry: high-quality technical phot iotogrammetry to 3D models a g: acquisition and processing i is. ware for the visualization of t nat students can create, visual buildings using a variety of m and photo modeling) in a CAD	I modeling cographic recordings and pr and orthophotoplans. into 3D models and he models. lize and integrate a digital nethods (laser scanning, e environment.	ocessing		
Contents					
<ul> <li>Theory and practice</li> <li>Theory and practice</li> <li>Theory and practice</li> <li>Theory and practice</li> <li>Practice of 3D g modelling - Vision</li> </ul>	tice of laser scanning tice of technical photographic tice of terrestrial photogramm tice of photo modeling of bui generation and visualization of ualization with CAD.	c recordings. metric restitution Idings. f the terrain reality - Photo			
Initial competences					
The initial knowle Topometry and R	edge that is treated in the cour emote Sensing.	rses: Engineering Surveying	,		
Final competences					
1 Analyze the err each error. 2 Being able to s	or sources of laser scanning d	evices and evaluate the size	e of		
perform the las 3 To be able to ta	er scanning. ake a technically perfect photo	by selecting suitable mou	nting		

points and optimally setting the camera.4 Assess the quality of a laser scanning and photo recording performed and, if insufficient, know which parameters need to be corrected to remedy this.

- 5 Both laser scan point clouds and terrestrial technical photos of buildings can be processed with software packages into a three-dimensional model and into ortho-photo plans of that building.
- 6 Producing a suitable visualization of the three-dimensional models of buildings with CAD software.

#### 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

### Study material

Type: Slides

Name: 3D slides Indicative price: Free or paid by faculty Optional: no Language : English Number of Slides : 75 Available on Ufora : Yes Online Available : No Available in the Library : No Available through Student Association : No

#### References

- J.C. McGlone 2004 Manual for Photogrammetry, Am Soc for Photogramm. And Rem.
- Sens. Maryland
- Worboys, M.F., 1995, Geographic Information Systems: A Computing Perspective,
- Taylor and Francis, London.
- Longley, P.A., Goodchild, M.F., Maguire, D.J. en Rhind, D.W., 2001, Geographic
- Information Systems and Science, Wiley, New York.
- Boeklagen, R., 2007, AutoCad 2007, Computerondersteund Ontwerpen, TEC / CAD College.

#### Course content-related study coaching

On appointment

#### Assessment moments

end-of-term and continuous assessment

#### Examination methods in case of periodic assessment during the first examination period

Oral assessment, Written assessment

#### Examination methods in case of periodic assessment during the second examination period

Oral assessment, Written assessment

#### Examination methods in case of permanent assessment

Assignment

#### Possibilities of retake in case of permanent assessment

examination during the second examination period is possible

#### Extra information on the examination methods

- Written (Project Work + Theory)
- Oral explanation by student (Project Work + Theory).

#### Calculation of the examination mark

- Non-periodical for the project work (2/3 of the point total)
- Periodically for the theoretical part (1/3 of the point total).