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Volunteering
for the future –
Geospatial excellence
for a better living

Experiences running the new Belgian E-learning oriented IBSC certified "cat. B Hydrographic Surveying" Program (11683)

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Antwerp Maritime Academy
INSTITUTE FOR HYDROGRAPHY

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IBSC

FIG/IHO/ICA INTERNATIONAL BOARD ON STANDARDS OF COMPETENCE FOR HYDROGRAPHIC SURVEYORS AND NAUTICAL CARTOGRAPHERS (IBSC)

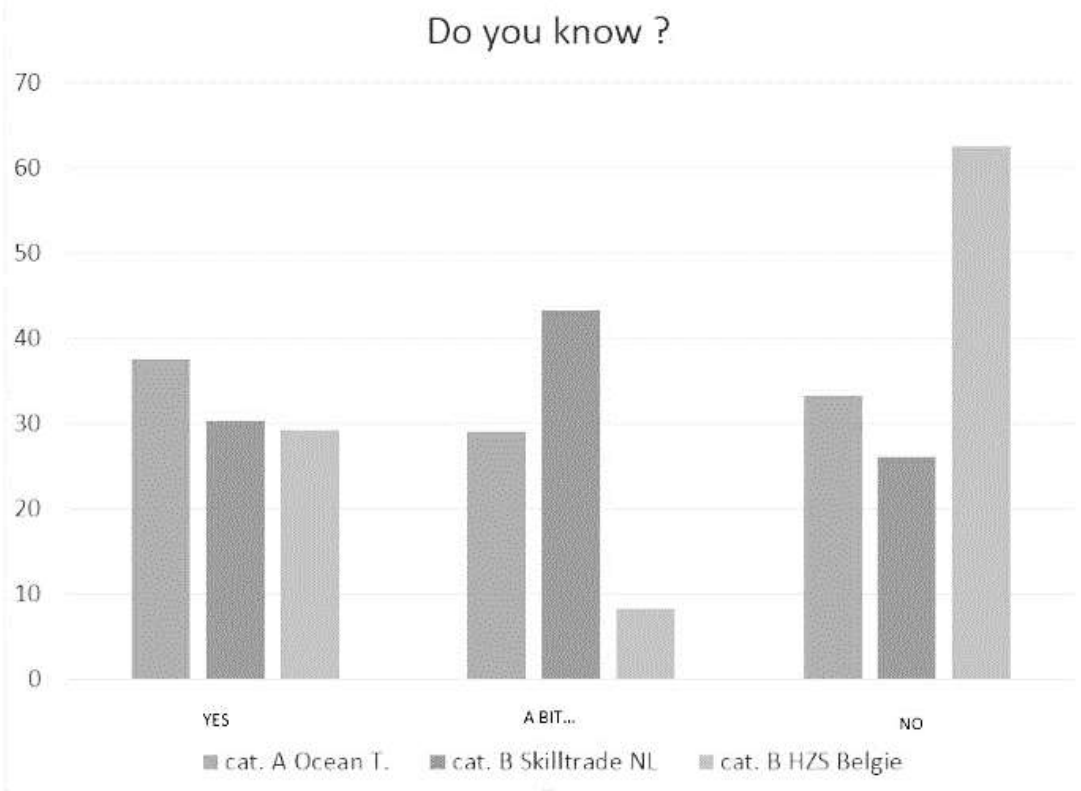
Postgraduate 1-year program « hydrographic surveying (category B) »

Hydrography | Antwerp Maritime Acadamy (amacademy.be)

Hosting Institution	Antwerp Maritime Academy – Institute for Hydrography (Noordkasteel Oost 6, B-2030 Antwerp)
Standard	IBSC recognised in 2013 and 2020
Language	English

Hydrographic Education in the Benelux

- A “IHO cat. A hydrography” offered by the “Maritime Institute Willem Barentsz” (Terschelling, the Netherlands);
- A “IHO cat. B hydrography” offered by the private company “Skilltrade” (the Netherlands);
- A “IHO cat. B hydrography” offered by the “Antwerp Maritime Academy”, together with Ghent University (Belgium).



Why hydrographic education in Belgium ?

Before 2012 there was no hydrographic education in Belgium. Most belgian surveyors are engineers or land surveyors (“Master of Science in Geomatics and Surveying”, “Master of Science in Land Survey Engineering Technology”…) without IHO cat.A/cat.B accreditation.

Usually these surveyors received an additional “on the field” training by their employers (mainly by 2 big dredging companies “Deme” and “Jan De Nul” and the hydrogrographic survey company “GEOXYZ”).

For the moment there are approximately 400 hydrographic surveyors working in Belgium, more than 95% without IHO accreditation.

In 2012, a partnership was formed between:

- The “Institute for Hydrography” was established within the “Antwerp Maritime Academy” (ISO 9001-2008 certified and reviewed by internal and external audits (by “Det Norske Veritas”), as hosting institute of the programme.
- Ghent University (47000 students (12% international), 15.000 staff, 50 Ba and 170 Ma programs).
- Public/Governmental hydrographical services
- Private partners (dredging companies, surveying companies,...)

Antwerp Maritime Academy
INSTITUTE FOR HYDROGRAPHY

GHENT UNIVERSITY

agentschap Maritieme Dienstverlening en Kust
waterbouwkundig LABORATORIUM
Vlaams Instituut voor de Zee

DEME
Dredging, Environmental & Marine Engineering
Jan De Nul GROUP
GEOXYZ

Blended program structure

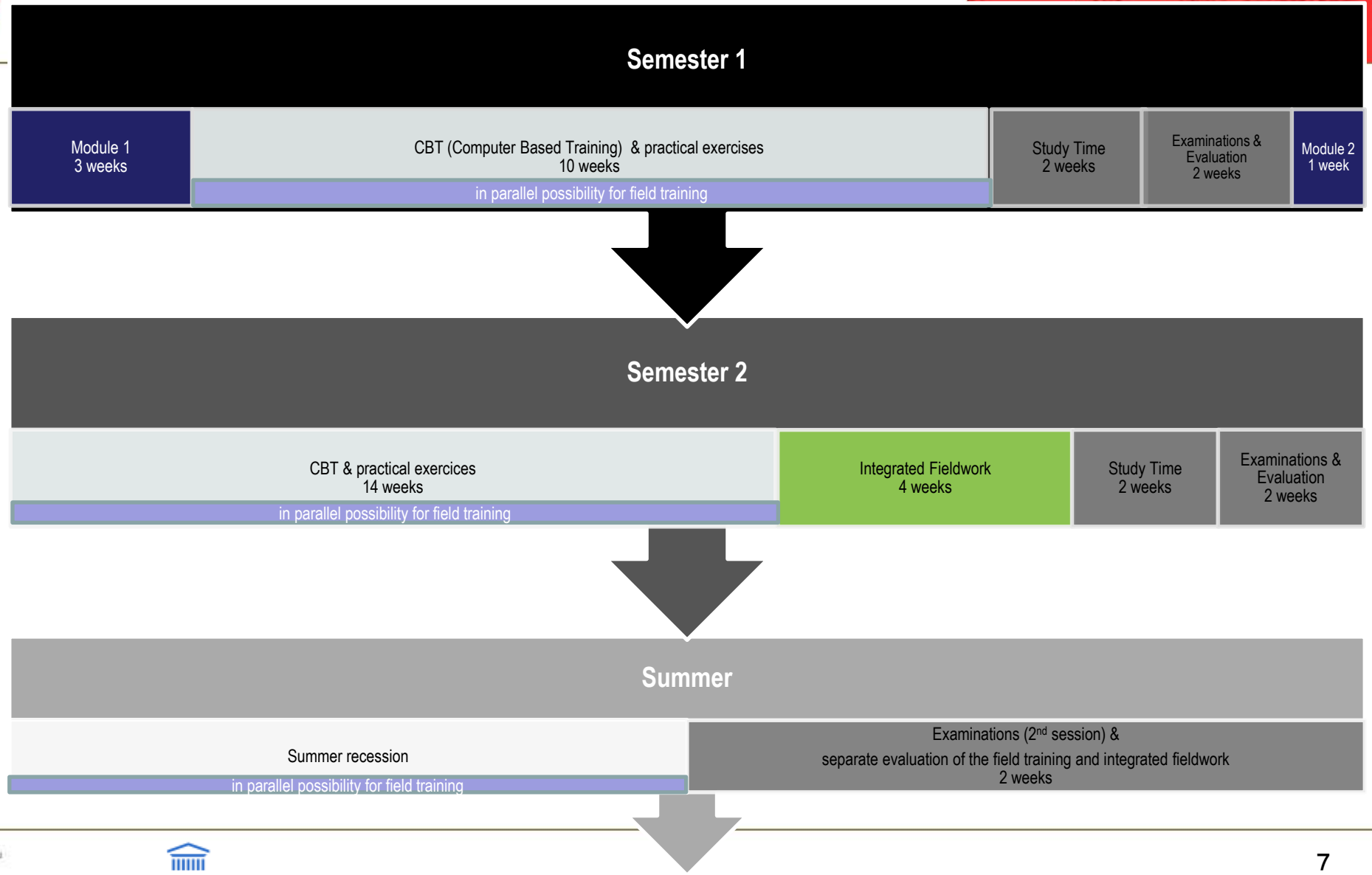
1. Theoretical « classroom » lectures (3+1 weeks) as « introduction / basic knowledge »

2. CBT (computer based training) = « E-learning » using an educationl internet platform (« ufora » from UGent) for extra theory and theoretical/practical computer exercises and assignments (spread over 10+14 weeks)(35 ECTS)

3. « Integrated fieldwork » (4 weeks)(5 ECTS)

4. Field training » (free to spread by student but in total 576h = ca. 16 weeks)(19 ECTS)

Programme timetable

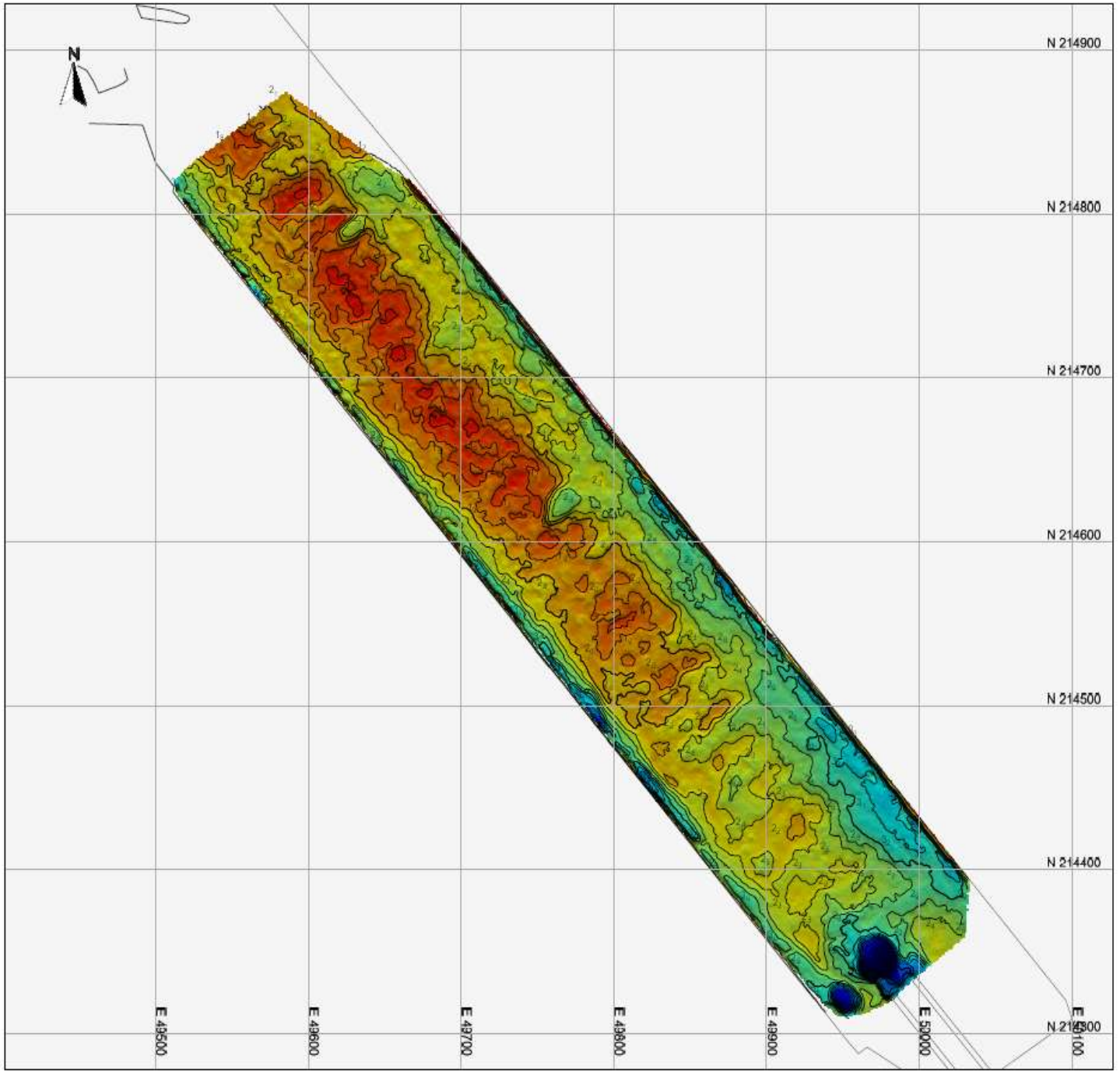


Theoretical Classes

	Course Title	ECTS	Class Hours	Location
1	ICT	3	24	UGent
2	Navigation	6	48	HZS
3	Safety	3	24	HZS
4	Seamanship	3	24	HZS
5	Tides and Currents	3	24	HZS
6	Hydrographic Surveying	6	48	UGent
7	Geodesy and Cartography	3	24	UGent
8	Data Management	3	24	UGent
9	Geology and Geophysics	3	24	UGent
10	Legal Aspects	3	24	UGent
	TOTAL THEORETICAL CLASSES	36	288	

	Course Title	ECTS	Organized by
	Integrated Fieldwork Period	5	HZS + UGent

- Integrated 4 weeks of intensive training and excursions
  - Hydrographic survey
  - Dredging simulation
  - Visit to Flanders Hydraulics
  - Vessel installation
  - Vessel calibration
  - Software training
  - Basic safety
- Takes place in May, after theoretical classes
- Training initiated by professors IAssessment by professors Assignments also include preparation and simulation fieldwork project as described in the S-5



Visserijdok Oostende

Bathymetrie

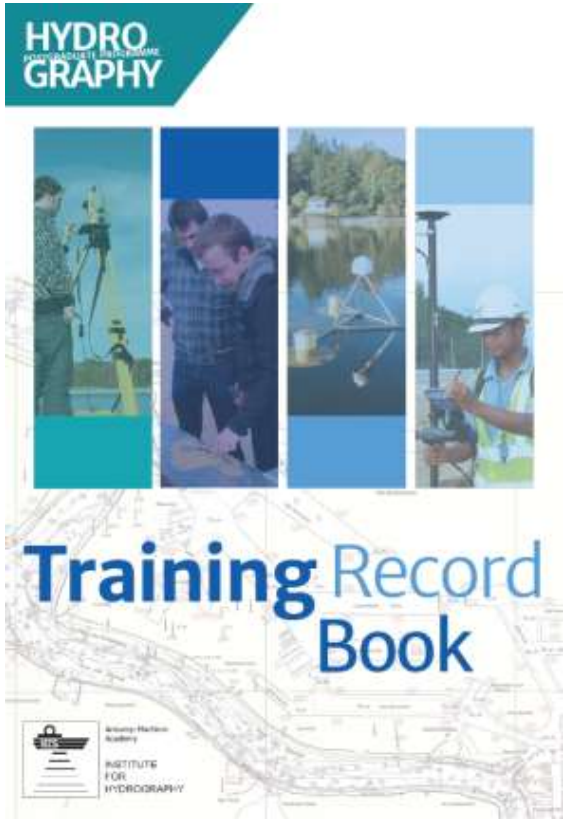
Datum opname: 04-05/06/2014

Metingen uitgevoerd door:
Studenten "Hydrography cat.B"

Gemiddelde dieptes in m t.o.v. LAT
UTM coördinaten ETRS89 - Zone 31N
Geografische coördinaten: Lambert '72
Survey vessel: Geosurveyor V
Motion sensor: Seatex MRU Kongsberg
Multibeam systeem: R2Sonic 2020
Plaatsbepalingsysteem: Trimble

	Course Title	ECTS	Class Hours	Location
	Field <u>training</u>	**19**	**576 hours (= ca. 4 months)**	**Collaboration with partners from government and industry:** **Flemish Hydrography** **Flanders Hydraulics** **DEME NV** **Geo-XYZ** **Jan De Nul NV** **etc**

Evalutation of the Field training by using a Training Record Book



Assessment

Fieldwork supervisors can accurately assess skills, competences, and assignments

Clear Guidelines

Students have guidelines of what to do during their fieldwork in the training record book.

Evaluation

Examination committee has proof of student's practice during fieldwork.

Portfolio

Comprehensive portfolio to use during training and professional career.

Assessment of field training

Example from the 'List of Training Tasks and Competences Achieved'

HYDROGRAPHY

E1	Competence: BATHYMETRY			Examination board Sign/ Date	
	Task	Supervisor's Initials/ Date		Evaluation/ remarks by supervisor	
E1.1	Underwater Acoustics				
.1	Calculate sound speed from measurements of temperature, pressure and salinity				
.2	Create a sound profile of the water column using appropriate software (indicate software on the working sheet)				
.3	type of instrument)				
.4	Gather information about the seafloor and interpret the effects				
.5	Identify the sources of noise in the environment and use this information in your measurements				
.6	Operate transponders, pingers, acoustic releases and sound speed meters. Make a report mentioning product identification and findings				
E1.2	Single-Beam Echo sounders				
.1	Verify the mounting of transducers (hull, towed, over the side and boom)				
.2	List the transducer characteristics that affect beam width				

Experiences running the new e-learning oriented program: follow-up points

1. **Communication**
   - The use of a new educational electronic platform (UFORA at Ugent) involves learning curve for students.
   - Part of the communication is still performed by classic direct e-mail, yielding a (too) heavy mail load on tutors/professors.
   - Therefore, for next academic year, an extra administrative support (50%) has been engaged.

2. **Motivation**
   - A (too) high level of self-discipline and intrinsic motivation was assumed when assignments and project work were given. But the skills and/or motivation of these professional bachelor students appeared different (less) relative to these of our traditional master students.
   - Therefore, for next academic year, a strict planning with compulsory intermediate moments of feedback and assessment are foreseen to stimulate the self-activation of the students.

3. **Organization**
   - Organizing the 4 weeks of " integrated fieldwork" in the port of Ostend for more than 20 students with 7 institutions/partners and 3 vessels with a series of complex equipment/sensors involved is an enormous logistic operation. It requires a year long preparation and still a lot of flexibility in the execution.
   - More time will be foreseen for preparatory meetings with all partners, student groups will be maximum 3 students, and a search for more vessels will be undertaken.

Conclusions

1. Blended learning is a challenge, particularly in the start-up phase.

2. Blended learning including e-learning requires a huge investment in time and re-organization of the learning material.

3. Blended learning should be tuned according to the “self-discipline” level of the students. It is much more than creating learning videos.

4. Compulsory tests at fixed planned moments seems required to activate all students.

5. Permanent clear e-based communication with the students appeared also imperative.

Thank you for your attention

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Axel.Annaert@HZS.be

Global Information on the web:

Hydrography | Antwerp Maritime Acadamy (amacademy.be)
Ghent University: Postgraduate Hydrography B (ugent.be)

Ghent University, Department of Geography, Ghent (Belgium)
Anwerp Maritime Academy, Institute for Hydrography, Antwerp (Belgium)

Start of the courses: 26 th of September 2022.

Cat. B Programme coordinator:

jana.ameye@ugent.be

Global information:
https://studiekiezer.ugent.be/postgraduate-hydrography-b-en/2022

Study Guide with detailed curriculum
https://studiekiezer.ugent.be/postgraduate-hydrography-b-en/programma/2022

Entry requirements:
https://studiekiezer.ugent.be/postgraduate-hydrography-b-en/informeerje/2022

Admission requirements:
https://studiekiezer.ugent.be/postgraduate-hydrography-b-en/informeerje/2022

Brief application procedure

- **Application portfolio**
  - Send completed application portfolio with required documents to HZS-IVH
- **Registration fee**
  - Payment registration fee
- **Interview**
  - Participate in the interview
- **Tuition Fees**
  - Payment tuition fees
- **Enrolment**
  - Enrolment

Bachelor Degree

Or Equivalent from an European university or college, or from an overseas institution recognised by its government. Legalised copy of diploma.

Mathematics & Physics

Attested through recognised higher education diploma supplement. Diploma supplement should mention at least the items as specified by IHO Standards.

English language

Proficiency proven by first degree EU English language programme, TOEFL, IETS, GMAT or alternative proof.

thanks