Practical information and education guide for guest lecturers

Updated: January 2018

Welcome!

Dear Guest Lecturer,

We are very pleased to welcome you at *IHE Delft Institute for Water Education* and appreciate the importance of your contribution in our education programme.

It is for that reason that we have compiled this guide for guest lecturers. The aim of this document is twofold: on the one hand it will make you familiar with the Institute's perspective on teaching (and how you can align your didactical inputs), and on the other hand it will provide you with practical information to make your stay at IHE Delft more comfortable and efficient.

We wish to encourage you to consult this guide before you start preparing your lecturing materials and to use the information when discussing your inputs the module (or course) coordinator.

Suggestions for further improvement of this guide are most welcome.

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1 EDUCATIONAL CONCEPT:

Research based and international education, resulting in T-shaped competency profiles

The IHE Delft Institute for Water Education offers university level master programmes that embed research in education. Students are confronted with state-of-the-art knowledge, ideas, approaches and technologies both in the taught part and during the research projects in which they partake.

The educational concept of IHE Delft comprises five elements:

1.1 Relevance for development

The aim of the Institute's MSc Programmes is to educate students primarily from development countries and countries in transition as well as students from developed countries with a strong interest in water and development to become creative problem solving professionals in the field of water and environment. The MSc curricula are geared towards supporting a greater understanding of sustainable development and the inherent challenges in achieving that.

Teaching staff and students come from all over the world and (research) partnerships with related institutes and universities play an important role in teaching. The educational environment can therefore be called truly international; it is characterized by pluralism and diversity and stimulates students while progressing in their studies to develop communication skills that will enable them to disseminate their professional knowledge and skills effectively.

1.2 The structure of the MSc curricula: acquiring and integrating knowledge and skills

The Delft-based curricula of the MSc Programmes consist of 106 ECTS credit points and have a **Taught Part** (61 ECTS credit points) and a **Thesis Research Part** (45 ECTS credit points). Research skills are also built up during the taught part.

The **Taught Part** is formed by13 modules. A module consists of a teaching period (usually 3 weeks) and an exam period (within the exam week following each two consecutive modules). Modules may be shared between or among specializations and/or programmes. The taught part intends to acquiring and integrating knowledge and skills in 4 phases:

- *Foundation phase: leveling knowledge and skills (2-4 modules)*
- *Specialization phase (4-6 modules), concluded by a field trip and field work (module #9)*
- *Electives phase: deepening and/or broadening knowledge and skills (modules #10-12)*
- *Interdisciplinary problem solving phase: integrating knowledge and skills (groupwork, module #13)*

The **Thesis Research Part** consists of two modules on research methodology and MSc proposal drafting and defense, followed by a period of six months of individual research and writing of the thesis. The MSc thesis is defended publically at the end.

1.3 Academic staff

The teaching staff is of PhD level, didactically skilled and comes from all over the world. All teaching staff members are active in research within their respective specializations which enables them to act as examples for their students. All full professors are also appointed by a Dutch university.

Guest lecturers are hired to provide for specialist expertise that is not available from the teaching staff, and to share experience from real life practice in their specific professional field.

1.4 T-shape competency profiles

Effective problem solving in the field of water and environment requires knowledge-based competence from the physical sciences, water engineering, and/or the social sciences. The MSc curricula provide students with so-called T-shape competency profiles which enable them to cooperate within teams uniting various disciplines. The vertical bar of the T stands for specialist *deep* knowledge-based competence. The horizontal bar represents preliminary or

working knowledge and skills from neighbouring disciplines, and also general academic skills, communication competencies (e.g. empathic, intercultural, networking competency) and other professional skills. Thus, team members who each bring their respective specialist knowledge are able to 'embrace', i.e. sufficiently understand, each other in interdisciplinary problem solving.

For each MSc Programme and Specialization the vertical bar of the T-shape competency profile refers to the Final Qualifications under the Dublin Descriptor headings *Knowledge and understanding*, *Applying knowledge and understanding*, and *Making judgments*. The horizontal bar refers to the Final Qualifications under the Dublin Descriptor headings *(Applying) Knowledge and understanding* only in so far as preliminary or working knowledge in a neighbouring field is concerned; furthermore to *Communication* and *Learning skills*.

1.5 Didactic approach and lifelong learning

The teaching is 'learner-centred', '(inter)active' and 'research based' and each teaching method and form of assessment used complies with the principles of this approach as explicated in teaching and assessment quality norms. Students also partake as learners and researchers in ongoing research projects, especially during the Thesis Research Part.
The teaching and assessment methods employed within the modules stimulate and evaluate the students' development of critical thinking, creative problem solving and independent attitude characteristic of research based education.

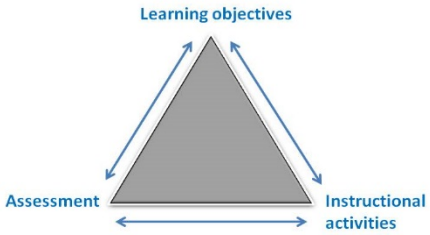
To ensure intensive interaction between the individual students and teaching staff a high staff/student ratio is maintained. Furthermore, students work in small groups in order to enhance the learning effect of brainstorming, discussion, feedback, teamwork, communication etc.
Academically educated professionals will only remain successful, if they are able to renew and expand their knowledge and skills on their own initiative and into new directions under their own guidance. The example set by the Institute's staff and the active, learner-centred educational approach encourage the students' openness to and capability of 'lifelong learning' throughout the curriculum.
The teaching and assessment methods employed within the modules stimulate and evaluate the students' development of critical thinking, creative problem solving and independent attitude characteristic of research based education.

2 DIDACTIC APPROACH: Aligned teaching & active learning

The didactic approach at IHE Delft follows the concept of 'Constructive alignment'. Research has shown that adult students construct their learning through relevant learning activities. It is the task of the lecturer to create a learning environment that stimulates the learning activities of the students and to ensure that the learning outcomes are achieved. It is important that all parts of the teaching process - learning objectives, instructional activities and assessments are aligned to each other.

Every course / module / programme is best described via the learning triangle.
The learning triangle is a way to describe and implement any course. What is taught (content), how it transferred (means) and how it is assessed is determined by what needs to be achieved (learning objectives).

Learning triangle



2.1 Learning objectives

Learning objectives are the heart of every education activity and describe what a student is able to do at the end of a course / module / programme.
A well-formulated objective:

- is specific with respect to contents (content)
- is phrased in terms of observable skills (behaviour)
- indicates the circumstances in which students should be able to demonstrate the objective (condition)
- specifies the minimum level of achievement required (criteria)

Learning objectives: an example
The student is able to apply models for quantitative decision analysis in the context of an integral system design

- **Action verb:** apply
- **Concrete & specific content**: models for quantitative decision analysis
- **Condition:** in the context of an integral system design

Describing learning objectives is very useful for the following reasons:
It offers criteria for the design of education;
It offers criteria for assessment;
It gives information about what to expect of the course;
Gives prove of the need of this course to colleagues, examination committee etc.

Therefore for all modules learning objectives have been described in the module plans. The content, learning and teaching activities have to be geared towards achieving the objectives.

Learning objectives may be described in different categories and at different levels.
Learning objectives have to categorised according to one of the levels of the Dublin decriptors:
1. Knowledge and understanding
2. Applying knowledge and theory
3. Making judgments
4. Communication
5. Learning skills

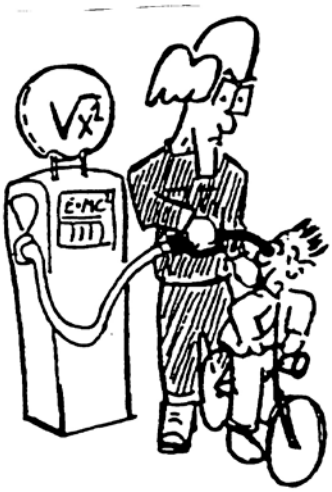
Tips for learning objectives

- Do not mention **a learning activity** or **a lecturer activity** as a learning objective
- Choose **one level of attainment** per learning objective
- Do not give too many content details
- Formulate **positively**

2.2 Teaching methods

2.2.1 Direct teaching model

This is the traditional way of transferring knowledge. The main characteristics of this model are that it is teacher centered, only aimed at transferring knowledge, whereby the students play a passive role.



But… research into learning has shown that
The direct teaching model is only effective for the *reproduction of knowledge.*
It is not an effective way for *applying knowledge or gaining insight.*

Fig. 1 Students listening

2.2.2 Constructivism

Therefore at IHE Delft the constructivist approach is followed. The main characteristic of this approach is that it is learner centered, focusing on the construction of knowledge; students have to be active.
In short:

- Teaching ≠ learning; learning means *doing*
- The student *creates* (constructs) knowledge
- Teaching methods need to stimulate students to *engage actively* with the subject matter

Learning takes place through the active behavior of the student: it is what *he* does that he learns, not what the teacher does. Ralph Tyler (1949)
The benefits of active learning are:

- less concentration drop
- student commitment
- fosters deep learning
- fits in the concept of aligned teaching

In student-centered learning it is very important that the learning objectives are described in what the student is able to do at the end of the course. So, the first question is:

- What do you want your students to be able to do after your course?

The second question then is:

- Which activities should be performed to enable them to achieve that aim?

In designing a lecture think of the following steps:
Step 1: what are the conditions?
Step 2: what are the learning objectives?
Step 3: select effective teaching activities
Step 4: how to assess the learning objectives
Step 5: check on integration and alignment

Various stages in the teaching/learning process can be discerned:

1. **Orientation**

inform the students about the learning goals, motivate them, stimulate them to take an active part and help them to focus their learning activities

2. **Active processing**:

make sure learning activities take place; this is the core of the learning process. Students receive and process new information and/or experiences.

3. **Evaluation**:

find out whether the learning goals have been reached.

2.2.3 Examples of activating methods

- Asking questions
- Invite students to make up questions
- Discussion;pose challenging statements
- Use snowball groups
- Use buzz-groups/peer instruction
- Pair check (extended: think-pair-share)
- Brainstorm
- Assignments:
    - Set assignments during lectures (reading, thinking, calculating or writing)
    - Use outcome of assignments in an interactive way.

Fig. 2 Working on a group assignment

Differentiation by varying the activities

- provide both open and closed questions and assignments
- use group work in addition to working individually and in pairs
- discuss concrete examples as well as abstract theory
- work with teacher-controlled and with student-controlled activities

2.2.4 Presenting

Here are some tips to enliven your manner of speaking:

- Speak clearly, loudly
- Use clear language
- Provide emphasis by means of voice and gestures
- Show enthusiasm
- Have eye contact with the students
- Ask questions, invite questions, react to questions
- Vary in speech rate
- Introduce brief pauses
- Use examples
- Create a context

On the next page an overview is given of the various instructional methods and didactic approaches used at IHE Delft.

Table 1: Overview of instructional methods, didactic approaches and learning results

Instructional method	Didactic approaches by the lecturer	Description	Relation to learning objectives (Bloom)	Learning results by the students
Interactive lecture	Presenting, brainstorming, discussing examples, asking questions, solving problems by students, showing a movie etc	An explanation of a topic delivered before the class, alternated by interactions between lecturer and students, and among students. Lectures serve one or more of the following functions: • to impart information; • to introduce and explore a topic; • to build-up complex structures step-by-step; • to clarify and illustrate concepts and ideas detailed in the literature or lecture notes; and • to provide a framework for further independent study and reading.	Knowledge and comprehension	Listening, Discussing. Note taking, Memorizing, Recalling, comparing
Case study	Presenting a case, demonstrating	Students work on a real life scenario in or outside a classroom setting, to come with an action plan or possible solution(s).	Application	Writing skills, reading skills, applying knowledge in a new situation,
Role play	Explanation, discussion, coaching, reflecting	In a role play students play a certain role to experience the responsibilities and tasks related to this, and to view a situation from different perspectives.	Application	Communication skills, team playing, active listening skills,
Laboratory work	Presentation, explanation, demonstration	Students carry out experiments in a laboratory which provide them learning of practical aspects of science and technology, and for preparation and/or processing data and to report on it.	Comprehension and application	Carry out experiments, writing reports
Fieldtrip Fieldwork	Explanation	Excursion or an investigation carried out in the field (learning by doing in the real world)	Application and analysis	Listening, observing,
Assignment	Explanation, instruction	Task on a subject that has already been delivered in a lecture to be performed outside of class, either in group or individual. Assignments are carried out independently by the students and consist of activities to: • study or practice lecture material; • prepare a report, thesis or presentation; • work out the results of an exercise; • conduct an experiment or test; and • conduct a research or other study.	Analysis and synthesis	Investigating, analyzing, elaborating, finding solutions, logical reasoning,
Exercise	Explanation	An exercise takes one of the following forms: • a design or practical exercise; • a computer or other workshop; and • a groupwork discussion.	Analysis and synthesis and evaluation	Use of software,

2.3 Assessment methods

Assesments are to test how a student has met the learning objective of a module.
In the module plans a description is given of which assessment methods are used.
On page 10 an overview is given of various assessment methods used at IHE Delft.

For each type of assessment it is required to check for:

Criterion	Main concerns	What to do
Validity	Is the test representative of the content/objectives of the module? Do the questions address the intended cognitive levels?	Make an assessment matrix. Compare the test to the matrix. Ask questions that *matter.*
Reliability	How many questions are there? (the more, the better) Are the questions unambiguous and in clear language? Is the marking consistent? Is the lay-out of the exam clear?	Make clear scoring instructions. Get more than one person to do the marking Ask a colleague to take the test. Apply the guidelines for question formulation. Perform test analysis afterwards and make improvements for next time.
Transparency	Do students know what to expect? (types of question, way of scoring etc)	Make a trial test available. Communicate the test plan.
Practicality	Is it possible to create and mark the test in a reasonable amount of time? Is it possible to take the test in a reasonable amount of time?	Time a colleague taking the test (should be 3-4x faster than student). Make use of estimates for time it takes to answer.
Positive impact on learning/ educational impact	Does the test method in your module encourage the type of learning that you want? (e.g. understanding rather than remembering) Does the test method encourage students to start studying early?	Use intermediate testing. Incorporate opportunities for feedback Ask questions that stimulate students to practice what you want them to practice

Table 2: Assessment methods

Assessment Method	*Method variants*	*Description*	*Academic Assessment Aspects*	*Relevant Dublin Descriptors*
1. Written Examination	Written Examination (short answer examination)	A number of questions to be answered with short written replies within the time frame of a preset number of hours.	– insightful acquisition of knowledge (facts, theories, methods, applications, ...)	• Knowledge and Understanding
2. Individual Assignment	Assignment / Paper / Report / Essay / Exercise / Case Study / Presentation	A task given to an individual student to complete before a preset deadline with a clear indication of what counts as a result to be submitted (e.g. paper, report, simulation, proposal, ...)	– insightful acquisition of knowledge (facts, theories, methods, applications, ...) – insightful application of knowledge (facts, theories, methods, applications, ...) and/or skills – critical, independent, insightful judgment	• Knowledge and Understanding • Applying Knowledge and Understanding • Making Judgements • Communication
3. Group Assignment	Small group assignment / Groupwork (module13)	A task given to a group of students to complete, as a team, before a preset deadline with a clear indication of what counts as a result to be submitted (e.g. paper, report, simulation, proposal, ...)	– insightful application of knowledge (facts, theories, methods, applications, ...) and/or skills as a team – critical, insightful judgment as a team	• Knowledge and Understanding • Applying Knowledge and Understanding • Making Judgements • Communication
4. Individual participation	Individual Participation in (Practical) Group Work	An evaluation of an individual student's (progress in) participation in group or team work.	– individual cooperation skills	• Communication
5. Oral Examination	Oral Examination	A number of questions, asked orally by the examiner, to be answered orally by the student within the time frame of a preset number of hours.	– intensive insightful acquisition of knowledge - insightful application of knowledge (facts, theories, methods, applications, ...)	• Knowledge and Understanding
6. Thesis Research Work Assessment	Thesis Research Work Assessment	Thesis defense before the Examination Committee	– integral proof of having adequately mastered all Final MSc Qualifications	• Knowledge and Understanding • Applying Knowledge and Understanding • Making Judgments • Communication • Learning Skills

2.4 Plagiarism

Plagiarism is the practice of taking someone else's work or ideas and passing them off as one's own.[1] This act is considered as academic fraud. When plagiarism is established whether during the course of the study or after the completion of the study, cases will be investigated by the Examination Board. The Examination Board shall examine the cases of established plagiarism individually. After examining all the evidence, the Examination Board shall issue **a final and binding penalty**, in accordance to the severity of each case. The penalty might include in most severe cases, interdiction to complete the program of study or withdrawal of already awarded titles or certificates.

What to do in case plagiarism is detected?

1st offence

1. Upon establishing plagiarism, the lecturer shall exclude the plagiarized paragraphs from marking the assignment. Accordingly, the final mark shall be given by evaluating exclusively the participant's own work and not the plagiarized paragraph(s).
2. In case a substantial amount of work is plagiarized, a mark of 1 is allocated and the participant shall be requested to submit a new assignment. The Examination Board shall be informed accordingly.
3. A formative interview shall be scheduled with the participant and the module co-ordinator and/or the lecturer in order to emphasize on the importance of avoiding plagiarism
4. A record (mention) of the incident shall be added to the participant's personal registration file.

2nd offence

1. The assignment shall be marked with 1 for containing plagiarism and the participant shall be requested to submit a new assignment. The Examination Board shall be informed accordingly.
2. A formative interview shall be scheduled with the participant and the module co-ordinator and the lecturer.
3. Formal letter shall be placed under the participant's personal registration file.

3rd offence

1. The assignment shall be marked with 1 for containing plagiarism.
2. The case shall be forwarded to the attention of the Examination Board, which shall decide on the following steps according to the severity of the case.
3. Formal letter shall be placed under the participant's personal registration file.

[1] Oxford English Dictionary

3 ORGANISATIONAL MATTERS

3.1 Contribution to the programme

Guest lecturers are hired for bringing in their expertise and/or their experience in a specific professional field. They are active or retired professionals working in an area relevant to the topic of the module to which they contribute.

3.2 Module coordinator

The module coordinator is the focal point for the guest lecturer.

He/she serves as the supervisor for all guest lecturers active in his/her module. He/she is responsible to familiarize the guest lecturer with IHE Delft and its educational concept, to provide the necessary guidance, instruction and support, and to introduce the guest lecturer to the students and to relevant support units in IHE Delft, i.e. the Planning Officers of the Education Bureau, the IT Department and the Finance Department.

A module coordinator bears overall responsibility for all aspects related to development and maintenance of a module and the implementation thereof. He/she ensures the content, quality and level of a module, and is actively and substantively involved in the delivery of the module.

A.o. the module coordinator has the following responsibilities:

- Adequately inform, guide and support guest lecturers in the module;
- Establish, together with the (guest) lecturers:
  - the instructional approaches and
  - assessment methods
- The education materials to be used in the module;
- Decide on the time allocation per topic (in study load hours);
- Arrange, in cooperation with the Education Bureau, the scheduling of all education and examination activities of the module;
- Check the written examination questions for clarity, completeness, consistency and their testing of the learning objectives;
- Collect assessments marks and ensure their timely submission to the Education Bureau;

3.3 Administration

The education bureau i.e. the Planning Office, in cooperation with the module coordinator, is responsible for the organisation of the programmes.

The Planning Office arranges the scheduling of courses, makes appointments with (guest) lecturers, organises the examinations etc.

Prior to their appointment, guest lecturers are required to fill-in a registration form and submit appropriate (legal) documents to IHE Delft. The HRM bureau prepares and sends-out the guest lecturer's contract and enter a new guest lecturer in the IHE Delft guest lecturers' database. Guest lecturers have to inform IHE Delft if there are changes to their data.

The guest lecturers' database is used by the Education Bureau to link guest lecturers to modules and prepare module schedules. It provides guest lecturers access to the relevant Virtual Learning Environment, scientific software if applicable, and ensures that payments can be made to compensate the guest lecturer for rendered services. The actual payment is made after receipt by IHE Delft of a declaration form (for natural persons) or an invoice (for legal persons) from the guest lecturer, and after approval of the invoice by the Programme Coordinator (for inputs in an MSc programme) or the module coordinator (for inputs in a non-degree programme).

3.4 Performance & performance assessment

The module coordinator is responsible to ensure that the guest lecturer delivers inputs that connect to the learning objectives of the module and that these inputs are complementary to inputs delivered by other (guest) lecturers. All lecture materials prepared by the guest lecturer

are reviewed by the module coordinator prior to being circulated to the students. The module coordinator may ask the guest lecturer to also provide inputs to assignments and to the examination of the module. In all cases the module coordinator remains responsible for the application of the proper internal quality assurance protocols.
To assure quality performance and relevance, the inputs of the guest lecturer is reviewed regularly. For all guest lecturers who are new to IHE Delft, the module coordinator attends all or parts of the sessions in which the guest lecturer performs, and provides immediate feedback to the guest lecturer on his/her performance.

End-of-module student evaluations are required for all modules pertaining to a MSc programme. These evaluations are organized by the Education Bureau and provide feedback on both the appropriateness of the content delivered by the guest lecturer and his/her performance in the delivery thereof.
The end-of-module evaluations are discussed with the (guest-)lecturers involved in the module for immediate feedback. Negative feedback may lead to the discontinuation of the guest lectureship.

If you have any further questions, please do not hesitate to contact the Planning Office or the module-coordinator.

For information the following persons can be contacted:

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m.haije@un-ihe.org

Joyce van der Staaij

Water Science and Engineering programme
Tel 015-2151719
j.vanderstaaij@un-ihe.org

4 GENERAL FRAMEWORK STUDY PROGRAMMES

4.1 Overview of master programmes

Presently the following Master Programmes are offered:

- Environmental Science
- Urban Water and Sanitation
- Water Management
- Water Science and Engineering

These programmes have a nominal duration of 18 months and are leading towards a Master of Science (MSc) degree. Each programme has several distinct specialisations.

4.2 Structure of the Programmes

The curriculum follows a modular structure.

The Taught Part consists of 13 modules.
A module consists of a teaching period (usually 3 weeks) and an exam period (within the exam week following each two consecutive modules). Modules may be shared between or among specializations and/or programmes.

The Thesis Research Part consists of two modules on research methodology and MSc proposal drafting and defense, followed by a period of six months of individual research and writing of the thesis. The MSc thesis is defended publically at the end.

4.3 Curriculum Information

All modules are described in the module plans of the study guide providing the following information,

- the name and code of the module;
- the learning objectives;
- the pre-requisite knowledge or skills;
- the study load hours and credit points;
- the lecture, exercise and examination contact hours;
- the nature and weights of the examination parts;
- the responsible lecturers/examiners;
- a concise description of the contents and working methods; and
- the required and recommended literature, and other materials.

4.4 Examinations

Examinations serve to test if students have achieved the learning objectives of a module, and ultimately those of the programme itself. The examination for a module may be composed of multiple parts. For example, a combination of a written or oral test and one or more assignments to handed in separately.
Examination work can also be produced by (small) groups of students working together on an assignment, e.g. the groupwork report.
Assessment of examination material is carried out by appropriate examiners, which are usually the involved lecturers. Students who successfully complete a module will be granted the credit points for that module. Fieldtrips may require active participation instead of an examination in order to receive the credit points. For each examination, students are informed about the assessment results via e-mail. When all examinations have been passed, the student has successfully completed the so-called programme examination and will be awarded the degree.

Fig. 3 Diploma awarding

4.5 Lecture hours

Lectures are given in the lecture rooms of the building at Westvest 7.

The official lecture hours are:

Period 1	08.45 - 09.30
	09.45 - 10.30
Period 2	10.45 - 11.30
	11.45 - 12.30

Lunch break

Period 3	13.45 - 14.30
	14.45 - 15.30
Period 4	15.45 - 16.30
	16.45 - 17.30

5 FACILITIES

5.1 Accommodation

The building is open during the following times:
Monday to Friday 07:30 – 20:00
Saturday 08:00 – 12:30

5.2 Reception desk

Inquiries and requests can be addressed to the receptionist on the ground floor of the building at Westvest 7. Participants have their own locker for the distribution of private mail, schedules, lecture notes and other papers. Last-minute changes in schedules are indicated on the announcement board near the entrance. Two monitor screens opposite the reception desk are regularly updated with news or information on events taking place at IHE Delft.

5.3 Lecture rooms

The building houses a number of fully-equipped lecture rooms and theatres, which can accommodate groups of all sizes from 15 to 300 persons. Rooms for facilitating computer classes and workshops are present and can be used freely by students outside class hours. Furthermore, the Institute has its own printing and reproduction facilities and also contains an in-house distance learning and video conferencing centre.

Fig. 4 Video conference room

Fig. 5 Auditorium

Table 3 Lecture rooms

Room number	Number of seats	Room number	Number of seats
A1	318	B1	80
A1a	159	B2	30
A1b	159	B3	30
A2	64	B5	10
A2a	40	B6	36
A2b	24	B7	16
A3	64	B9	16
A3a	40	Socio	16
A3b	24	Pr.Kmr	12
A4	24	D2	12
A5	24	D3	10

5.4 Smart boards

All classrooms are equipped with Smart board Interactive Whiteboards. These boards have two regular whiteboards on the side and one interactive section in the centre part. The centre part cannot be used for writing with real ink as it might damage the board.

The function of the centre part can best be described as a projection platform combined with a touch screen. To make full use of the functionality the IT Department has supportive information available.:

- a 43 minutes video recording of a tutorial session for the use of Smart boards at IHE Delft,

- 2 brochures on the use of Smart boards, as well as
- Smart board drivers to install on your own laptop.

You are encouraged to use your own laptop (with Smart board drivers installed) for your lectures.

More information on the board and its accompanying software can be found on the website of the supplier:

https://education.smarttech.com/en

5.5 Library

Fig. 6 Library

The Institute has its own small but dedicated library. The library provides access to over 35,000 printed titles, among which the complete collection of IHE Delft Master thesis and PHD dissertations. Furthermore the collection contains over 8.000 online journals. The online journals collection is accessible on the network at the Westvest premises or through remote authentication through the UNESCOIHE portal.
For more information please visit the Library's Internetpage http://www.unescoihe.org/library

The library is open to all IHE Delft participants and staff, and to visitors by appointment. The services provided by the library include lending out books, requesting articles and other materials through the inter-library loan system and providing assistance in searching the electronic catalogue.

The catalogue
The library collection is accessible through an electronic catalogue, which is searchable by author, title (word) and subject, as well as by Boolean operators. Please visit https://www.un-ihe.org/library for more information.

Fig. 7 Library books

Borrowing library items
A maximum of ten items may be borrowed from the library at any one time. The maximum loan period is 21 days, renewable up to a maximum of 42 days. Renewals can be made online, http://www.unesco-ihe.org/library by using the borrower information function within the catalogue or by email (library@unesco-ihe.org). Please note that the loan period can be extended only if the items have not already been reserved by another person.
Reference works, M.Sc theses, bound and non-bound periodicals and materials bearing a green sticker may not be borrowed. By using their library card to borrow items from the library, borrowers agree to be responsible for those items, including the cost of replacing lost or damaged items.

Opening Hours : Monday 09:00–18.30
Tuesday-Friday 09:00–19.00
Saturday 09:30–12:30

Please note that the Library opening hours may be subject to change. Visit the Library webpage for regular updates.
For further information please contact the library reference desk.
Email: library@un-ihe.org
Tel: +31 (0)15 215 1714
Fax: +31 (0)15 212 2921

5.6 Electronic learning environment

Part of the lecturing at IHE Delft is writing (collecting) lecture material for the participants. A webbased E-learning and collaborative system (eCampus) is accessible for all (guest) staff and students to exchange learning information and documents.
Contact person:
Ger Tielemans, tel 015-2151328
email: g.tielemans@un-ihe.org

5.7 ICT facilities

Fig. 8 Computer facilities

IHE Delft provides modern computing (IT) facilities for education and research. A local wired- and wireless network is available in IHE Delft's building. Through IHE Delft's networks all computers have access to a fast Internet connection. Besides that, participants have unlimited access to Internet in all hostels provided by IHE Delft.
All IHE Delft desktop and laptop PCs are Intel based with Microsoft Windows operating system.

All students are provided with an IHE Delft laptop PC in order to get access to the IT facilities.

5.8 Laboratories

Fig. 9 Working in the laboratory

Modern educational and research laboratories are available in the fields of chemistry, process technology, microbiology, aquatic ecology and soil science. A wide range of standard
analytical tests can be performed for chemical, physical and microbiological water, air and soil quality analyses.
Elemental analyses, various kinds of microscopy and analytical techniques such as spectrophotometry, gas- and ion chromatography, and atomic absorption can be carried out. A wide range of laboratory and bench-scale reactors, temperature and light controlled growth chambers, and various constant temperature rooms are available for research in one of the departmental research programs, including waste water management using aquatic macrophytes and wetlands, the adsorption and/or (an-)aerobic degradation of micropollutants, self-purification in drains and

filtration. Through close co-operation with the Delft University of Technology and other educational and research institutions, research possibilities are quite extensive.

In addition to the in-house facilities, the laboratory has a range of instrumentation and equipment available for field instruction and for conducting hydrological or environmental field experiments and measurements.

5.9 The restaurant

Fig. 10 Meals served in the restaurant

IHE Delft has its own small, but dedicated restaurant. During lunch time there is a variety of choices of meals. Not only warm meals are offered, but also snacks and simple bread and butter.
The restaurant is open from 12.15 till 13.30 hrs

Coffee and tea are offered for free.

Fig. 11 Coffee corner

5.10 Car park

IHE Delft has an underground car park (entrance in front of the building). If you would like to use this, then please ring the bell at the entrance and report to the reception that you are a guest lecturer.
As parking space is limited a place is not guaranteed.

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