

Measuring and Comparing Achievements of Learning Outcomes in Higher Education in Europe (CALOHEE)

CALOHEE Questionnaires on typical degree programmes and typical occupations and tasks

Responses of the Subject Area of Civil Engineering

Number of responses: 16 (from 12 universities); 4 from the same IT institution; 2 from the same UK institution; from the IT institution 2 different programmes have been taken into account in this questionnaire; from the UK institution also 2 being different types of programmes (BA-MA + Integrated Master).

Countries covered by Inner and Outer Circle Higher Education (HE) institutions: BG, BE, ES, FR, IT (3x), GR, IE, PT, TR, UK

How would you characterise your HE institution:

- [6] Comprehensive university
- [1] Specialized university
- [1] Research university
- [3] University of Applied Sciences

Is your HE institution typical / representative for your country? [9] yes; [3] no

If not, please explain:

Typical degree programmes

Is / are the degree programme(s) at your HE institution on offer representative for comparable degree programmes in the subject area concerned offered by other HE institutions in your country: [10] yes; [2] no

If not, please explain: First one is a Grand Ecole (FR); second an international research institute (TR)

What is the length of your programme in the subject area concerned measured in terms of ECTS credit points:

Bachelor: [4] 180; [] 210; [2] 240; [2] 241-250

Master: [] 60; [2] 90; [5] 120; [1] 126 ECTS;

Integrated Master: [1] 240; [3] 300

[] Not applicable

What are the names/titles of your **BACHELOR** programme(s):

1. Civil Engineering
2. Environmental Engineering

3. Construction Management
4. Civil and Territorial Engineering

How can your **bachelor** programme be characterized in terms of its profile, as a:

- [4] broad programme covering typical elements of the sector involved (e.g. Social Sciences, etc.), followed by specialization in a particular subject area / discipline (later)
 [2] broad programme covering different paradigms?, which are / can also (be) positioned outside the realm of the sector
 [3] specialized programme focusing (mainly or only) on the subject area involved

Does your **bachelor** programme distinguish one or more types / tracks / orientations:

[] yes; [] no

If so, can these be distinguished in (a) more research oriented type(s) / track(s) and (a) more applied type(s) / track(s)? [5] yes; [1] no. Please explain:

Examples of tracks:

- Applied Mechanics
- Hydraulics
- Hydromechanics
- Coastal and Harbour Engineering
- Geotechnical Engineering
- Structures
- Earthquake Engineering, Geodesy
- Transportation Engineering
- Materials Construction
- Engineering and Management fields
- Structural Engineering
- Hydraulics and Environmental Engineering
- Geotechnical Engineering
- Transport, Infrastructure and Regional Planning
- Civil Constructions
- Hydrology
- Transports and Urban Services

If so, do these tracks have different (well-defined):

[3] aims and objectives (general description of topics covered / taught by the programme and for what purpose, e.g. to prepare the student for (an) occupation(s) for which these are relevant)

[4] learning outcomes (statements of what the student should know and is able to do after completion of the programme)

Does your **bachelor** programme include:

[3] minor(s)

[7] electives

[] double major

If applicable, can the minor(s) / electives be taken outside your faculty at another faculty of your HE institution? [5] yes; [4] no

What is the space included in your **bachelor** programme for (a) minor(s) / electives in terms of ECTS credits:

[1] 0; [1] 1-10; [3] 11-20]; [2] 21-30; [] 31-45; [2] 46-60

Does your **bachelor** programme include a mobility window (a period that is reserved to take course units in another country which will replace course units (obligatory / electives / minors) of the degree programme that the student is taking at your HE institution:

[4] yes; [4] no

If so what is the number of ECTS credits involved: [1] 15; [4] 30; [-] 60; [] different, please specify:

How do you characterise your **bachelor** programme (*up to two answers are possible, except if the programme covers a more academic and a more applied track; then three answers are possible*):

[7] a traditional programme in which the focus is mainly on knowledge acquisition and transfer: the programme is largely based on lecture classes, which might be supported by seminar groups and, if applicable, limited laboratory work

[4] a student-centred programme¹ which requires active student learning, which is mainly based on a seminar / exercise course unit model and, if applicable, extended laboratory work

[1] based on research driven education

[1] based on applied driven education

Does your **bachelor** programme include a work based learning component (work placement / entrepreneurship / traineeship)?

[4] yes; [5] no

Please explain:

If so, what is the size of this component expressed in ECTS credits:

[1] 0-5; [2] 6-10; [] 11-15; [2] 16-20; [] 21 – 25; [] 26-30; different (specify):

Is your **bachelor** programme based on:

[8] (well-defined) aims and objectives (general description of topics covered / taught by the programme and for what purpose, e.g. to prepare the student for (an) occupation(s) for which these are relevant)

If so, how many: [] one general description; [3] 1-5 more explicitly formulated; [4] 6 or more; more explicitly formulated

Are these included in the course catalogue: [7] yes; [] no

Are these included in the course description / syllabi: [7] yes; [] no

and/or

[7] (well-defined) programme competence statements (broadly defined statements of the competences to be developed in the **bachelor** programme)

If so, how many: [1] up to 5; [3] 6-10; [2] 11 or more

[5] (well-defined) unit competence statements

If so, how many on average per unit: [2] up to 5; [3] 6-10; [-] 11 or more

Are these included in the course catalogue: [5] yes; [] no

Are these included in the course description / syllabi: [5] yes; [] no

and/or

[6] (well-defined) programme learning outcomes (statements of what the student should

¹ Definition of student-centred learning according to the European Student Union (ESU 2010): A learning approach characterised by innovative methods of teaching which aim to promote learning in communication with teachers and students and which takes students seriously as active participants in their own learning, fostering transferable skills such as problem-solving, critical and reflective thinking.

know and is able to do after completion of the **bachelor** programme)
 If so, how many: [2] up to 5; [2] 6-10; [-] 11 – 15; [2] 16 or more
 [6] (well-defined) course unit learning outcomes (statements of what the student should know and is able to do after completion of the unit)
 If so, how many on average per unit: [1] up to 5; [5] 6-10; [] 11 or more
 Are these included in the course catalogue: [6] yes; [] no
 Are these included in the course description / syllabi: [6] yes; [] no

Attention: From the responses it is seems that there is some confusion about the use of the terms 'aims and objectives', 'competences' and 'learning outcomes statements'.

Are the following skills / competences 'trained' in the framework of the **bachelor** programme (a full list of Tuning generic competences is attached to this questionnaire):

- [9] Abstract and analytical thinking
- [6] Ethical reasoning
- [9] Design and manage projects
- [1] Entrepreneurship
- [8] Oral communication
- [9] Problem solving
- [8] Learn-to-learn and stay up-to-date with learning
- [6] Critical and self-critical awareness
- [8] Planning and Time management
- [7] Collect, select, process and analyse information
- [9] Teamwork
- [3] Leadership (Taking responsibility)
- [3] Intercultural communication
- [5] Social responsibility and civic awareness
- [6] Generate new ideas (creativity)
- [8] Information and Communication Technologies
- [1] Other: Ability to communicate in a second language
- [1] Other: Knowledge and understanding of the subject area and understanding of the profession
- [1] Other: Commitment to health, well-being and safety

Are students expected to write (a) (research-based) paper(s) (besides a final thesis) in the framework of their **bachelor** programme? [2] yes; [7] no

If so, are research skills explicitly trained? [] yes; [1] no

If so, are writing skills explicitly trained? [] yes; [1] no

If so, are papers written which should have:

[] up to 2.500 characters (words, equal to up to 5 pages?)

[] 2.500 – 5.000 characters (words, equal to 5-10 pages?)

[2] more than 5.000 characters (words, equal to more than 10 pages?)

Attention: In the above mistakenly incorrect numbers of characters were included; they should have been a factor 5 higher to correspond with the information to be collected.

If so, what is the character of the (fast majority of) paper(s) to be written:

[1] Based on a well-defined research question, meeting the requirements of the disciplinary field

[] Based on an identified topic and having the character of an essay

[] Other,.....

Are students expected to prepare reports as a part of their **bachelor** programme?

[7] yes; [1] no

If so, for what purpose? Please explain: lab reports, internship reports, homework, final exam papers, research papers, design reports, project reports

What are the main modes / strategies for learning and teaching in your **bachelor** programme:

[9] lectures

[7] seminars

[7] tutorials

[9] exercise courses / practical classes

[8] fieldwork

[5] oral assignments

[6] written assignments

[] role play

[1] peer reviewing

[4] work based practice

[6] problem-solving sessions

[1] flipped classroom (combination of Internet instruction and classes)

[2] blended learning

[6] laboratory assignments

[1] Others: design-project based

[1] Others: individual supervision

[] Others:

Is your **bachelor** programme completed by a final thesis? [7] yes; [2] no

If so, are there minimum requirements in terms of length: [2] yes; [5] no

If so, how many:characters

One university reports the size of the final thesis: 15.000 characters.

What are the titles of your **MASTER** programme(s):

1. Civil Engineering
2. Environmental Engineering
3. Building Engineering
4. Mathematical Engineering
5. Construction and Project Management
6. Structural Engineering
7. Water Engineering
8. Architectural Engineering
9. Civil Engineering / Civil and Structural Engineering (also with a Year in Industry) (Integrated Master)
10. Structural Engineering and Architecture (Integrated Master)
11. Architectural Engineering (Integrated Master)
12. Ingénieur de l'École nationale des ponts et chaussées
13. Mestrado Integrado em Engenharia Civil
14. Structural Engineering
15. Reconstruction and Modernization of Buildings and Facilities ('Master for Bachelors')
16. Project Management in Construction ('Master for Bachelors')
17. Analysis and Design of Structures ('Master for Bachelors')
18. Environmental Protection and Sustainable Development

- 19. Antiseismic Design of Structures
- 20. Engineering Project Management

How can your **master** programme be characterized in terms of its profile, as a:

- [4] broad programme covering typical elements of the sector involved (e.g. Social Sciences, etc.), followed by specialization in a particular subject area / discipline (later)
- [1] broad programme covering different paradigms?, which are / can also (be) positioned outside the realm of the sector
- [11] specialized programme focusing (mainly or only) on the subject area involved

Does your **master** programme distinguish one or more types / tracks / orientations:

- [] yes; [] no

If so, can these be distinguished in (a) more research oriented type(s) / track(s) and (a) more applied type(s) / track(s)? [7] yes; [7] no. Please explain:

Examples of orientations or tracks:

- structural design and construction
- project management
- modernization
- rehabilitation and strengthening of civil engineering structures and facilities
- Structures
- Construction and Geomaterials
- Water Resources

If so, do these tracks have different (well-defined):

- [3] aims and objectives (general description of topics covered / taught by the programme and for what purpose, e.g. to prepare the student for (an) occupation(s) for which these are relevant)
- [5] learning outcomes (statements of what the student should know and is able to do after completion of the programme)

Does your **master** programme include:

- [2] minor(s)
- [11] electives
- [] double major

If applicable, can the minor / electives be taken outside your faculty at another faculty of your HE institution? [7] yes; [4] no

What is the space included in your **master** programme for (a) minor(s) / electives in terms of ECTS credits:

- [] 0; [2] 1-10; [4] 11-20 ; [3] 21-30; [3] 31-45; [-] 46-60

Does your **master** programme include a mobility window (a period that is reserved to take course units in another country which will replace course units (obligatory / electives / minors) of the degree programme that the student is taking at your HE institution:

- [10] yes; [5] no

If so what is the number of credits involved: [] 15; [3] 30 ; [7] 60; [] different, please specify

How do you characterise your **master** programme (up to two answers are possible):

- [10] a traditional programme in which the focus is mainly on knowledge acquisition and transfer: the programme is largely based on lecture classes, which might be supported by

seminar groups and if applicable limited laboratory work
[5] a student-centred programme² which requires active student learning, which is mainly based on a seminar / exercise course unit model and if applicable extended laboratory work
[5] based on research driven education
[3] based on applied driven education

Does your **master** programme include a work based learning component (work placement / entrepreneurship / traineeship)? [7] yes; [7] no

Please explain:

If so, what is the size of this component expressed in ECTS credits:

[3] 0-5 ; [] 6-10; [2] 11-15; [] 16-20; [] 21 – 25; [3] 26-30; different, please specify:
.....

Is your **master** programme based on:

[14] (well-defined) aims and objectives (general description of topics covered / taught by the programme and for what purpose, e.g. to prepare the student for occupation for which these are relevant)

If so, how many: [1] one general description; [4] 1-5 more explicitly formulated; [8] 6 or more; more explicitly formulated

Are these included in the course catalogue: [12] yes; [1] no

Are these included in the course description / syllabi: [12] yes; [1] no

and/or

[7] (well-defined) programme competence statements (broadly defined statements of the competences to be developed in the **master** programme)

If so, how many: [1] up to 5; [3] 6-10; [3] 11 or more

[7] (well-defined) unit competence statements

If so, how many on average per unit: [3] up to 5; [3] 6-10; [] 11 or more

Are these included in the course catalogue: [7] yes; [] no

Are these included in the course description / syllabi: [7] yes; [] no

and/or

[11] (well-defined) programme learning outcomes (statements of what the student should know and is able to do after completion of the **master** programme)

If so, how many: [2] up to 5; [3] 6-10; [3] 11 – 15; [2] 16 or more

[12] (well-defined) course unit learning outcomes (statements of what the student should know and is able to do after completion of the unit)

If so, how many on average per unit: [3] up to 5; [5] 6-10; [4] 11 or more

Are these included in the course catalogue: [12] yes; [] no

Are these included in the course description / syllabi: [12] yes; [] no

Attention: From the responses it is seems that there is some confusion about the use of the terms 'aims and objectives', 'competences' and 'learning outcomes statements'.

Are the following skills / competences 'trained' in the framework of the **master** programme (a full list of Tuning generic competences is attached to this questionnaire):

[13] Abstract and analytical thinking and synthesising of ideas

² See note 1

- [7] Ethical reasoning
- [10] Design and manage projects
- [2] Entrepreneurship
- [13] Oral communication
- [13] Problem solving
- [9] Learn-to-learn and stay up-to-date with learning
- [10] Critical and self-critical awareness
- [9] Planning and Time management
- [12] Collect, select, process and analyse information
- [12] Teamwork
- [10] Leadership (Taking responsibility)
- [5] Intercultural communication
- [8] Social responsibility and civic awareness
- [11] Generate new ideas (creativity)
- [13] Use of Information, Communication and Information Technologies
- [1] Other: Ability to communicate in a second language
- [1] Other: Ability to search for, process and analyse information from a variety of sources
- [1] Other: Ability to work in an international context

Are students expected to write (a) research-based paper(s) in the framework of their **master** programme? [7] yes; [7] no

If so, are research skills explicitly trained? [5] yes; [3] no

If so, are writing skills explicitly trained? [] yes; [] no

If so, are papers written which should have:

[] up to 2.500 characters (words, equals up to 5 pages?)

[3] 2.500-5.000 characters (words, equals 5-10 pages?)

[4] more than 5.000 characters (words, equals more than 10 pages?)

Attention: In the above mistakenly incorrect numbers of characters were included; they should have been a factor 5 higher to correspond with the information to be collected.

If so, what is the character of the (fast majority of) paper(s) to be written:

[6] Based on a well-defined research question, meeting the requirements of the disciplinary field

[1] Based on an identified topic and having the character of an essay

[1] Other: Based on a research topic in the form of a research paper (8 p.)

Are students expected to prepare reports as a part of their **master** programme?

[10] yes; [2] no

If so, for what purpose? Please explain: final paper, design, report, project report, assessment via reporting, laboratory report

What are the main modes / strategies for learning and teaching in your **master** programme:

[14] lectures

[10] seminars

[8] tutorials

[14] exercise courses / practical classes

[9] fieldwork

[8] oral assignments

[13] written assignments

[3] role play

[3] peer reviewing

- [8] work based practice
- [10] problem-solving sessions
- [4] flipped classroom (combination of Internet instruction and classes)
- [3] blended learning
- [10] laboratory assignments
- [1] Others: enquiring, research based
- [1] Others: individual supervision
- [] Others: design project

Is your **master** programme completed by a final thesis? [14] yes; [] no
 If so, are there minimum requirements in terms of length: [4] yes; [10] no
 If so, how many:characters

Typical occupations

Given the fact that both regulated professions and non-regulated professions are covered in the CALOHEE project, some questions might be of more relevance for some subject areas than for others. However, in all cases it is of relevance to obtain a better understanding of typical tasks and roles which are performed by holders of a bachelor and a master degree, and at what level. The information collected will be compared with the lists of competences / Learning outcomes on which the existing documents are based. Two surveys were implemented for Europe: one in 2001 and one in 2008. Furthermore, there is information available of Tuning surveys executed for some of the disciplines in other world regions at later dates.

An up-to-date overview of typical tasks which are performed in practice will help to identify / to confirm the competences to be developed (and assessed) in a typical degree programme, taking into account that there are more research driven and more applied degree programmes, both at bachelor and master level.

In which **type of sectors** do (most of) your graduates find employment?

- [7] Government (including departments, statutory authorities and government owned businesses)
- [7] Local Government
- [7] Public Company
- [12] Private Enterprise
- [-] Not for Profit Organisation
- [-] Other (please specify):

In which of the following industry classifications do (most of) your graduates find employment? If possible and data available, please give an indication of the percentage involved. A distinction is made between bachelor and master graduates.

Attention: a number of universities have sent percentage scales. These have not been included in this compilation. This information is too diverse to compare and to combine.

Employment sector:	Bachelor [%]	Master [%]
<input type="checkbox"/> [1] Armed forces and Emergency services	<input type="checkbox"/> []	<input type="checkbox"/> []
<input type="checkbox"/> [6] Banking, finance and insurance	<input type="checkbox"/> []	<input type="checkbox"/> []
<input type="checkbox"/> [7] Business and management	<input type="checkbox"/> []	<input type="checkbox"/> []
<input type="checkbox"/> [2] Charities and voluntary work	<input type="checkbox"/> []	<input type="checkbox"/> []
<input type="checkbox"/> [1] Creative arts and culture	<input type="checkbox"/> []	<input type="checkbox"/> []

[8] Energy and utilities	[]	[]
[10] Engineering, manufacturing and production	[]	[]
[8] Environment and agriculture	[]	[]
[6] Further or Higher education or Research	[]	[]
[8] Government and public administration	[]	[]
[] Health and social care	[]	[]
[1] Hospitality, tourism and sport	[]	[]
[2] IT, information services and telecommunication	[]	[]
[] Law and legal services	[]	[]
[] Marketing, advertising and PR	[]	[]
[1] Media and publishing	[]	[]
[2] Physical Resources (mining, quarrying, oil, gas,...)	[]	[]
[9] Property and construction	[]	[]
[] Recruitment and HR	[]	[]
[1] Retail and sales	[]	[]
[] Science, pharmaceuticals and food	[]	[]

Please list the **ten most common jobs** (if possible) of your graduates (e.g. policy officer, policy analyst, (education) administrator, team leader, (site) manager, teacher, researcher, technician, registered nurse, clinical nurse leader, healthcare service manager, human resources worker, journalist, text writer, communication officer, marketing director, operator, programmer, supervisor, inspector, counsellor, international relations officer, self employed, etc). Please complete for Bachelor and Master graduates separately:

Bachelor graduates

1. Civil engineer
2. Site engineer
3. Site manager
4. Site inspector
5. Project manager
6. Design engineer
7. Structural engineer
8. Geotechnical engineer
9. Hydromechanics engineer
10. Health and safety specialist
11. Teacher
12. Technician
13. Human resources worker
14. Operator
15. Site manager
16. Constructor
17. Self employed
18. Drawer
19. Technical manager
20. Coordinator of quality of construction work
21. Coordinator of health and safety conditions on the construction site
22. Quantity surveyor
23. Construction laboratory worker
24. Self employed
25. Public servants
26. Employed at technical offices

27. Employed at construction companies
28. Managers
29. Educational officer
30. Researchers
31. Construction project manager
32. Structural Designer
33. Geotechnical professional
34. Infrastructure manager
35. Transport planner
36. Expert in structures maintenance
37. Manager of treatment plants
38. Safety and health coordinator
39. Port manager
40. Graduate engineer with construction company
41. Graduate Engineer with Engineering Consultancy/Design Company
42. Site Manager
43. BIM Co-ordinator
44. Engineering Surveyor
45. Graduate Civil Engineer
46. Graduate Structural Engineer
47. Graduate Site Engineer
48. Project Manager
49. Environmental Consultant
50. Graduate Transport Planner
51. Architect
52. Graduate modeller
53. Management consultant

Master graduates

1. Engineer
2. Consultant
3. Analyst
4. PhD
5. Structural engineer
6. Project manager
7. Associate
8. Works engineer
9. Data scientist
10. Research engineer
11. Civil engineer
12. Site engineer
13. Site manager
14. Project manager
15. Design engineer

16. Geotechnical engineer
17. Hydromechanics engineer
18. Director
19. Research assistant
20. Construction manager

21. Structural designer
22. City engineer
23. Environmental engineer
24. Waterworks engineer
25. Urban planner
26. Highway engineer
27. Geotechnical engineer
28. Materials engineer
29. Rehabilitation engineer
30. Policy officer
31. Policy analyst
32. Teacher
33. Researcher
34. Technician
35. Human resources worker
36. Supervisor
37. Self employed
38. Master graduates
39. Team leader
40. Construction Project Manager
41. Administrative manager
42. University lecturer
43. Construction laboratory analyser
44. Public servants
45. Employed at technical offices
46. Manager
47. Employed at construction companies
48. Education officer
49. Structural designer
50. Geotechnical professional
51. Infrastructure manager
52. Transport planner
53. Expert in structures maintenance
54. Manager of treatment plants
55. Safety and health coordinator
56. Port manager
57. Project Manager
58. Senior Engineer with Construction Company
59. Senior Engineer with Engineering Consultancy/Design Company
60. Director
61. Designer
62. Technical supervisor
63. Inspector
64. Team leader
65. Technical analyst
66. Planner
67. Business/market manager
68. Water Engineer
69. Lecturer
70. Sustainability consultant
71. Hydrogeologist

Please list **10 typical tasks** performed by your graduates. These should be formulated in more general terms, e.g. for *nursing*, for example, hands-on care, administering medications, managing intravenous lines, observing and monitoring patients' conditions, maintaining records, provide advice and emotional support, etc.; for *historians*, for example, policy and analytical papers writing, coaching, planning, forecasting, reporting, negotiating, organizing, delegating, representing, communicating including offering presentations, media contributions / publishing, research, teaching, etc.; e.g. for *educational scientists* for example: teacher training, staff development, coaching, modelling, data analyses, research, programme designing, assessment designing, etc. for *civil engineers*, for example, planning and designing (using designated software), overseeing construction and maintenance of building structures and facilities, testing (soil, building materials), making cost calculations, analysing of reports and data, presenting, coaching, reporting, organizing, etc.; for *physicists* for example research and development conducting basic and applied research, designing research equipment, inspection, testing, quality control, etc.

Please indicate below the tasks performed by bachelor and master graduates.

Bachelor graduates

1. Designing structures
2. Analysing structural stability of structures
3. Planning construction of structures
4. Overseeing construction and maintenance of structures
5. Testing samples from site and structures
6. Making cost calculations
7. Controlling budget, schedule, and quality
8. Organizing and directing
9. Analysing data and preparing reports
10. Inspecting job sites
11. Overseeing construction and maintenance of building structures and facilities
12. Testing (soil, building materials)
13. Planning (using designated software)
14. Presenting
15. Coaching
16. Reporting
17. Organizing
18. Drawing of construction project
19. Managing construction work in construction site
20. Coordinating the quality of construction work
21. Coordinating the health and safety conditions on the construction site, and other.
22. Overseeing construction
23. Maintenance of building structures and facilities
24. Environmental Impact Assessment
25. Energy certificates for buildings
26. Making cost calculations
27. Planning and designing
28. Analysing of reports and data
29. Field testing
30. Designing infrastructures
31. Assessing maintenance
32. Making structures calculations

33. Planning infrastructures
34. Analysing reports
35. Collecting data
36. Making reports
37. Organizing construction site
38. Testing (soil, building materials)
39. Basic Cost Calculations
40. Planning and Scheduling of Site Works
41. Basic Engineering Design
42. Preparation of Reports
43. Supervision of personnel
44. Quality Control
45. Technical reporting
46. Organizing technical tests
47. Planning and designing (using designated software)
48. Analysing of reports and data

Master graduates

1. Undertaking technical and feasibility studies including site investigations
2. Using a range of computer packages for developing detailed designs
3. Undertaking complex and repetitive calculations
4. Liaising with clients and a variety of professionals including architects and subcontractors
5. Compiling job specs and supervising tendering procedures
6. Resolving design and development problems
7. Managing budgets and project resources
8. Scheduling material and equipment purchases and deliveries
9. Making sure the project complies with legal requirements
10. Assessing the sustainability and environmental impact of projects
11. Designing structures
12. Analysing structural stability of structures
13. Planning construction of structures
14. Overseeing construction and maintenance of structures
15. Testing samples from site and structures
16. Making cost calculations and analyses
17. Controlling budget, schedule, and quality
18. Organizing and directing
19. Analysing data and preparing reports
20. Conducting research studies
21. Managing human resources
22. Managing equipment
23. Quantity surveying
24. Designing structures
25. Designing water systems
26. Building roads
27. Maintaining buildings
28. Rehabilitating houses
29. Planning cities
30. Building houses
31. Planning and designing
32. Testing (soil, building materials)

33. Quality control
34. Planning and designing (using designated software)
35. Overseeing construction and maintenance of building structures and facilities
36. Analysing of reports and data
37. Presenting, coaching, reporting, organizing
38. Managing construction company
39. High administrative positions in the organizations on the field of the construction industry
40. Researching and university teaching
41. Managing construction projects
42. Environmental Impact Assessment
43. Energy certificates for buildings
44. Coaching
45. Overseeing construction
46. Maintenance of building structures and facilities
47. Field testing
48. Designing infrastructures
49. Overseeing construction
50. Assessing maintenance
51. Making structures calculations
52. Planning infrastructures
53. Collecting data
54. Making reports
55. Organizing construction site
56. Preparation and Presentation of Reports (for Internal use and to Clients)
57. Advanced Engineering Design
58. Advanced Cost Calculations
59. Taking overall responsibility for projects and teams
60. Analysing of reports and data presenting
61. Coaching
62. Organizing technical tests and activities
63. Technical reporting
64. Business/market management
65. Managing technical projects
66. Planning and designing (using designated software)
67. Overseeing construction and maintenance of building structures and facilities,
68. Organising and managing
69. Reporting
70. Presenting

Thank you for completing the questionnaires. You are asked to return these **before 30 April 2016** to the project coordinating team by using the designated CALOHEE e-mail address: calohee@rug.nl

Annex

TUNING List of Generic Competences

1. Ability to communicate in a second (foreign) language
2. Capacity to learn and stay up-to-date with learning
3. Ability to communicate both orally and through the written word in first language
4. Ability to be critical and self-critical
5. Ability to plan and manage time
6. Ability to act on the basis of ethical reasoning
7. Capacity to generate new ideas (creativity)
8. Ability to search for, process and analyse information from a variety of sources
9. Ability to work autonomously
10. Ability to identify, pose and resolve problems
11. Ability to apply knowledge in practical situations
12. Ability to make reasoned decisions
13. Ability to undertake research at an appropriate level
14. Ability to work in a team
15. Knowledge and understanding of the subject area and understanding of the profession
16. Ability to motivate people and move toward common goals
17. Commitment to conservation of the environment
18. Ability to communicate key information from one's discipline or field to non-experts
19. Ability for abstract and analytical thinking, and synthesis of ideas
20. Ability to interact constructively with others regardless of background and culture and respecting diversity
21. Ability to design and manage projects
22. Ability to interact with others in a constructive manner, even when dealing with difficult issues
23. Ability to show awareness of equal opportunities and gender issues
24. Commitment to health, well-being and safety
25. Ability to take the initiative and to foster the spirit of entrepreneurship and intellectual curiosity
26. Ability to evaluate and maintain the quality of work produced
27. Ability to use information and communications technologies
28. Commitment to tasks and responsibilities
29. Ability to adapt to and act in new situations and cope under pressure
30. Ability to act with social responsibility and civic awareness
31. Ability to work in an international context