AKKREDITERINGS-RAPPORT

Master i brannsikkerhet (Fire Safety Engineering)

Høgskulen på Vestlandet

2026

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Grad/studiepoeng	Master/120 studiepoeng
Sakkyndige	Anne Simone Dederichs, Javal Barabady, Jonas Joel Jpseoh
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Forord

NOKUT ensures the quality of Norwegian higher education through, among other things, supervision of institutions' systematic quality work, accreditation of new study programs, and supervision of established programs. Universities and university colleges have varying authority to establish study programs. If institutions wish to establish a program beyond their authority, they must apply to NOKUT for accreditation of the program.

The expert committee appointed by NOKUT has assessed the application from the Western Norway University of Applied Sciences (HVL) for accreditation of Master in Fire Safety Engineering. The committee has compiled its assessments in this report.

About this report

NOKUT's method for accrediting study programs, as described in Appendix 2 of this report, allows the committee to revise its assessments and conclusions during the evaluation process if new information becomes available. This report includes new assessment based on new information from HVL.

HVL got commitment to accreditation on December 22th 2025, and after receiving response from HVL January 7th 2026 showing that HVL has changed the Study Plan for the programme in accordance with the recommendation from the Committee, NOKUT could accredit the program.

Hege Brodahl

Director for Higher Education

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1 Information regarding the applicant institution

Western Norway University of Applied Sciences (Høgskulen på Vestlandet, HVL) is a merger of three university colleges; Bergen University College (Høgskolen i Bergen), Sogn and Fjordane University College (Høgskulen i Sogn og Fjordane) and Stord/Haugesund University College (Høgskolen i Stord/Haugesund). The merger took place 1 January 2017.

As a University College, Western Norway University of Applied Sciences (HVL) has self-accreditation rights for all bachelor level programmes. HVL has accreditation for four programmes at PhD level and has self-accreditation rights for programmes at master's level within the field of these PhD programmes.

The institution's quality assurance system was approved by NOKUT in 2020.

HVL must apply NOKUT for accreditation of other programmes at master's and for new programmes at PhD level. HVL applied for accreditation of Master in Fire Safety Engineering by the application deadline of 15 September 2024.

HVL applied for accreditation of Master in Fire Safety Engineering by the application deadline of 15 September 2024.

Master in Fire Safety Engineering was first accredited in 2015 for campus students. This new application is for a flexible, digital, part-time offering of the same programme.

2 Decision

Vilkårene i Forskrift til universitets- og høyskoleloven §§ 1-10 til 1-18 av 1. august 2025 er oppfylt. NOKUT akkrediterer master i brannsikkerhet (120 studiepoeng) ved Høgskulen på Vestlandet.

Akkrediteringen er gyldig fra vedtaksdato.

3 Expert assessment

New regulations, including regulations of the accreditation of study programmes, came into force on 1 August 2025. The Regulation Concerning Supervision and Control of the Quality in Higher Education (*studiekvalitetsforskriften*) and the Academic Supervision Regulations (*studietilsynsforskriften*) have been merged into a single set of regulations, Regulation on Universities and University Colleges (*forskrift til universitets- og høyskoleloven*). The changes to the regulations do not contain any material changes. This report includes references to the new regulations. The regulations have not been translated.

3.1 Summary

This report presents the expert committee's evaluation of the proposed Master in Fire Safety Engineering at the Western Norway University of Applied Sciences (HVL). The programme is a degree of 120 ECTS, digitally delivered and offered on a part-time basis, designed to meet the growing demand for advanced fire safety expertise in industry and research. The expert assessment covers the programme's academic content, structure, pedagogical approach, research integration, the availability of the elective courses, international collaboration, and alignment with national accreditation standards.

The committee finds that the programme demonstrates strong academic competence and relevance, with clear links to ongoing research and international networks such as IAFSS, NFSN, and NFSD. However, several areas require improvement, including course progression, digital learning strategies, student inclusion, and the integration of research methodology as a mandatory component. While the academic staff possess relevant pedagogical competence — including formal training in university pedagogy and experience with digital content creation— the programme-level strategy for digital teaching and student engagement is underdeveloped. Requirements are provided to enhance the programme's coherence, accessibility, and academic quality, ensuring it meets the expectations of a second-cycle degree in fire safety engineering.

This is, in many ways, a strong educational program, situated within a vibrant and excellent research environment. The institution is taking its first steps toward implementing a digital education model, which is innovative in several respects and has the potential to become an excellent offering with some of the improvements outlined in the current report. In the committee's view, the response from HVL on the draft report demonstrates that the institution has introduced new and satisfactory actions to support digital learning.

However, the approach of making everything fully remote and digital to this extent is new and has not yet been thoroughly evaluated. It is therefore important to monitor how this model functions in practice—how learning progresses, how students are thriving, how they benefit from the rich research environment, whether academic integrity is maintained, and so on.

A structured evaluation over the coming years is essential to gain insights and learn from this digital teaching approach.

In the committee's view, the response from HVL to the draft report provides useful clarifications but does not change the main conclusion that the programme must be strengthened in areas such as course progression and prerequisites to meet the requirements of a coherent and accredited master's degree.

Comment from NOKUT

After response from HVL addressing the requirements from the committee NOKUT accredited the programme.

3.2 Basic prerequisities for accreditation

3.2.1 Demands expressed in the Universities and College Act

Regulation Concerning Supervision and Control of the Quality in Higher Education
Section 3-1 (4) It is a condition for accreditation being granted that the requirements of the Universities and University Colleges Act are met. Regulations adopted under the authority of Section 3-2 of the Universities and University Colleges Act shall form the basis for the accreditation.

Academic Supervision Regulations
Section 2-1 (1) The requirements of the Act relating to Universities and University Colleges and its corresponding regulations must be met.

New regulation (Regulation on Universities and University Colleges**):**
§ 1-10 Generelle vilkår for akkreditering
Et vilkår for akkreditering av studietilbud er at kravene i universitets- og høyskoleloven med forskrifter er oppfylt.

Assessment

Governance arrangements, regulations, appeals committee, learning environment committee, and the quality assurance system have not been assessed at this time, as the institution is an accredited university college.

This section only evaluates the relevant requirements outlined in the Regulation on Universities and University Colleges.

The program fulfils the requirements of a minimum of 30 credits of independent work. The total scope of the degree corresponds to 120 credits and qualifies as a regular master's degree (Regulation on Universities and University Colleges section 2-6).

Applicants with an engineering background comprising 25 ECTS in Mathematics, 5 ECTS in Statistics, and 7.5 ECTS in Physics meet the academic prerequisites for admission to the Master in Fire Safety Engineering.

Admission requires an average grade of C, along with sufficient English proficiency to understand the curriculum. This broad eligibility allows students from various backgrounds, including IT and computer technology, to apply. However, the committee notes the absence of chemistry requirements, which is a concern given the importance of chemistry in fire science and toxicology.

To address this gap, the institution should consider:

1. requiring basic chemistry knowledge from upper secondary education
2. accepting chemistry knowledge acquired through other relevant courses

3. offering a preparatory course of 2.5 or 5 ECTS credits for students lacking prior academic credits in chemistry

Both the Diploma and Diploma Supplement are in order. The English version of the learning outcomes in the Diploma Supplement is an accurate and complete translation of the original Norwegian text.

The institution is advised to

- establish clear entry requirements in chemistry

Assessment after new information from HVL

The entry requirements at HVL now include 2,5 credits in chemistry.

Conclusion

The requirements are fulfilled.

3.2.2 Information about the programme

Academic Supervision Regulations
Section 2-1 (2) Information provided about the programme must be correct and show the programme's content, structure and progression, as well as opportunities for student exchanges.

New regulation (Regulation on Universities and University Colleges**):**
§ 1-11 Krav til studietilbudet
k. Informasjonen om studietilbudet skal være korrekt, vise studiets innhold, oppbygging og progresjon, herunder muligheter for studentutveksling.

Assessment

The Master in Fire Safety Engineering is a 120 ECTS degree, offered digitally and on a part-time basis by HVL at Campus Haugesund. Designed for working professionals, it combines academic rigor with practical relevance and is supported by a strong research environment in fire safety.

The curriculum includes core courses in fire dynamics, risk assessment, and fire safety design, alongside a broad selection of electives and a master's thesis. Students also have the opportunity to participate in international exchanges in Australia and Germany, enriching their global perspective.

However, the programme description lacks information regarding progression through the programme (assessment 3.3.5). Prerequisite knowledge for the courses in the programme

is limited to general admission, with no course-specific prerequisites except for the thesis. This may hinder structured academic development and lead to a high degree of course repetition, reducing the overall coherence of the learning experience. Furthermore, while the elective offerings are extensive, they lack clear guidance on how they support progression and specialization, potentially resulting in fragmented learning paths.

The institution is required to:

- adjust the entry requirements to include course-specific prerequisites that support structured academic progression and reduce redundancy

Assessment after new information from HVL

The entry requirements now include 2.5 credits in Chemistry. There are no compulsory prerequisites for individual courses, as they are offered both as part of the master's programme and as standalone courses. This structure offers flexibility for professionals seeking targeted skills development and allows prospective students to join the programme at a later stage. Courses that have been successfully completed and approved may be credited towards the master's degree. Therefore, prerequisites are recommended but not mandated for each course, while the study plan clearly outlines the recommended progression through the programme.

The three comments have been addressed by revising and clarifying the recommended progression in the master's programme. The revised study plan makes Research Methodology (SIK512) a compulsory first-semester course, providing essential research skills used throughout the programme. Evacuation and Human Behaviour (SIK508) and Modelling of Fire Safety (SIK504) have been moved to Semester 3 to align with recommended prerequisites, while Risk Assessment (SIK502) has been moved to the fifth semester and is recommended after completion of other compulsory courses. Fire Science (SIK503) remains in its current semester due to its foundational prerequisites. In addition, the course Contingency Management and Fire Preventive Work (SIK506) has been strengthened with additional teaching on fire brigade operations, and the final assessment now includes an oral component to better align with the programme's strategy.

HVL has not established course-specific prerequisites. The committee considers it essential that such prerequisites be defined to ensure coherent progression throughout the programme. This requirement is particularly critical as the programme increasingly seeks to attract and accommodate international students. The committee maintains that course-specific prerequisites must be implemented.

The institution is required to:

- adjust the entry requirements to include course-specific prerequisites that support structured academic progression and reduce redundancy

Assessment after commitment to accreditation

The Study Plan now content compulsory prerequisites for individual courses in accordance with the recommendations for accreditation from the committee.

Conclusion

The requirements are fulfilled.

3.3 Demands to the educational provision

3.3.1 Learning outcome and title of programme

Academic Supervision Regulations
Section 2-2 (1) The learning outcomes for the programme must be in accordance with the National Qualifications Framework for Lifelong Learning, and the programme must have an appropriate title.

New regulation (Regulation on Universities and University Colleges):
§ 1-11 Krav til studietilbud
c. Læringsutbyttet skal være i samsvar med Nasjonalt kvalifikasjonsrammeverk for livslang læring for det aktuelle nivået.
a. Studietilbudet skal […], ha […] og et dekkende navn.

Assessment

Overall Learning Outcomes of the Programme
HVL writes in the application that the master in Fire Safety Engineering shall educate professionals with an in-depth understanding of fire safety, as well as an understanding of how to apply knowledge to real-life risks and situations.
The learning outcomes of the Master in Fire Safety Engineering are clearly formulated within the categories of knowledge, skills, and general competence, and are aligned with the National Qualifications Framework for Lifelong Learning at the second-cycle (master's) level. The outcomes reflect advanced subject knowledge, analytical and modelling skills, the ability to conduct independent research, and broad professional competence—including communication, teamwork, and innovation.

The mapping of learning outcomes across courses ensures coherence and progression throughout the programme. Furthermore, the learning outcomes are consistent with the programme title, *Master in Fire Safety Engineering*, and accurately reflect the course content.

Name of the Programme
The programme title, Master in Fire Safety Engineering (sivilingeniør), is appropriate, precise, and consistent with both Norwegian and international academic and professional terminology.

Conclusion

The requirements are fulfilled.

3.3.2 The programme's academic update and professional relevance

Academic Supervision Regulations
Section 2-2 (2) The programme must be academically up-to-date and have clear academic relevance for further studies and/or employment.

New regulation (Regulation on Universities and University Colleges):
§ 1-11 Krav til studietilbud
b. Studietilbudet skal være faglig oppdatert og ha tydelig relevans for videre studier eller arbeidsliv.

Assessment

The programme is academically up to date, as reflected in the study plan and course descriptions. For example, in SIK5000 – Experiment and Current Developments in Fire Safety, students engage with research articles published less than six months prior to the course, ensuring exposure to the latest scientific findings and experimental methods.

In SIK504 – Modelling of Fire Safety, students learn to use current industry-standard simulation tools such as FDS, CFAST, and Pyrosim, reflecting the latest computational methods applied in design, research, and safety assessments. SIK506 – Contingency Management integrates Norwegian and international emergency preparedness legislation, recent accident evaluations, and modern crisis management theory, ensuring relevance to contemporary practice.

Western Norway University of Applied Sciences (HVL) has documented the programme's relevance both for further study and employment. Regarding employment, HVL has provided several recommendations from industrial stakeholders who express clear support and a need for graduates of the programme. This confirms that the programme is well aligned with industry demands.

In terms of further study, HVL specifically references PhD programmes at the University of Stavanger (UiS) and the University of Bergen (UiB). The institution has a history of collaboration with these universities and has employed doctoral students pursuing their PhDs there.

Overall, the programme is academically relevant and well-positioned to support both professional employment and doctoral-level education.

Conclusion

The requirements are fulfilled.

3.3.3 The programme's workload

Academic Supervision Regulations
Section 2-2 (3) The total workload of the programme must be between 1,500 and 1,800 hours per year for full-time students.

New regulation (Regulation on Universities and University Colleges):
§ 1-11 Krav til studietilbud
f. Studietilbudets samlede arbeidsomfang skal være på 1500–1800 timer per år for heltidsstudier.

Assessment

The Master in Fire Safety Engineering is a 120 ECTS degree, offered digitally and on a part-time basis, with a standardised period of study of four years. 30 ECTS per year on a part-time basis, providing a workload of 750–900 hours annually. This corresponds proportionally to the standard full-time requirement of 1,500–1,800 hours per year, ensuring that the total workload of the program is consistent with national regulations. Therefore, the workload appears realistic to achieve the defined learning outcomes, and the distribution between activities like lectures, self-study and portfolio preparation is well balanced.

Conclusion

The requirements are fulfilled.

3.3.4 The programme's content, structure and infrastructure

Academic Supervision Regulations
Section 2-2 (4) The programme's content, structure and infrastructure must be adapted to the programme's learning outcomes.

New regulation (Regulation on Universities and University Colleges):
§ 1-11 Krav til studietilbud
d. Studietilbudets innhold, oppbygging og progresjon skal være tilpasset læringsutbyttet.
h. Studietilbudets organisering og infrastruktur skal være tilpasset læringsutbyttet og stå i forhold til antallet studenter.

Assessment

Content

The programme is designed to equip professionals with advanced expertise in fire dynamics, risk assessment, and fire safety design, addressing emerging societal challenges through a flexible, digitally accessible format tailored to working professionals.

The programme comprises the following components:

- 60 ECTS compulsory theoretical courses: Introduction to Fire Safety (SIK500) or Fire Prevention for students with a bachelor's degree in Fire Prevention, Risk Assessment (SIK 502), Fire Science (SIK503), Modelling in Fire Safety (504), Structural Fire Safety (SIK505), Contingency Management (SIK 506), Industrial Fire Safety (SIK 507) and Evaluation, Theory and modelling (SIK508).
- 30 ECTS elective courses. The students must choose between eight courses, and they also have the opportunity for international exchange in Australia and Germany.
- a master's thesis (30 ECTS)

In addition, all the students must take a 0 ECTS course "Current Development in Fire Safety" (SIK5000) as a prerequisite before they can start on their master thesis.

Course descriptions are generally well-developed and provide relevant information for prospective students. Teaching methods are clearly described and intended learning outcomes are defined in terms of both knowledge acquisition and skill development.
The programme offers a broad selection of electives, but it is unclear whether all electives are consistently available. To improve transparency and planning, the institution should clarify:

- how course viability is ensured in terms of participant numbers
- what contingency plans are in place if a course does not attract sufficient enrolment

The course in **SIK512 Research Methodology** is an elective but should be made mandatory as it reinforces the academic foundation of the programme.

Structure and organization
The programme will be fully digital except for SIK 5000 and the option of two elective courses and a master's thesis on campus. All the courses will be asynchronous with the use of recorded lectures. The students will take alle the compulsory courses during the first four semesters, and the last four semesters the elective courses and master's thesis.
The current admission criteria allow students from diverse academic backgrounds to enter the programme. While this promotes accessibility, it may also contribute to challenges in course progression and coherence—particularly when foundational knowledge in chemistry and fire dynamics is lacking. To mitigate this, the institution should consider aligning admission requirements more closely with the intended course sequence and learning outcomes. This could include mandatory preparatory modules or stricter prerequisites for key foundational courses.

The current structure does not adequately support the intended learning outcomes due to limited progression and insufficient coverage of fire brigade actions.

Only the master's thesis has entry requirements. All other courses are available to students with access to the programme. This may impede educational progression as it increases the risk of students departing from the intended learning trajectory. Introducing course-

specific prerequisites would better support student development and ensure a logical learning trajectory. Furthermore, improving the sequencing of courses would better support academic progression:

Evacuation and Human Behaviour, currently scheduled in semester 4, should be moved to semester 1, as it is foundational to both academic and practical aspects of fire safety Risk Assessment, currently offered in semester 1, should be placed later in the programme, after students have acquired knowledge in fire dynamics, evacuation, and fire chemistry. Fire Science (Fire Dynamics), currently in semester 2, should be taught in the first semester due to its foundational importance.

Infrastructure
The programme will be fully digital, and HVL use the learning management system Canvas to develop the courses. HVL also has a learning lab, including a recording studio, that all teachers have access to when developing courses. Activities to ensure students engagement and motivation will be designed and run through digital platforms such as Canvas, Zoom and Kahoot.
HVL has a large-scale fire facility, the Hall of Flame which may be used for fire-test.

The student administration will perform the most important tasks involved in supporting and following up with students. The library offers digital resources for finding literature and software for organising references within texts.

The pedagogical rationale—particularly in the context of a digital learning environment—is not clearly described. There is no explanation of how these digital tools support student engagement, interaction, or the achievement of learning outcomes in a fully online format. A more explicit pedagogical strategy would strengthen the programme's foundation and clarify how digital methods are used to foster active learning. For assessment see part 3.3.5.

The institution is required to

- clarify the pedagogical approach behind the use of digital infrastructure
- adapt the courses to better support digital learning and student engagement
- ensure that students have opportunities to interact with teachers and peers, both academically and socially
- make changes to the Study Plan that addresses progression through the programme and the purely remote character of the programme
- clarify how the research environment contributes to social and academic inclusion, especially at the start of the programme
- introduce course-specific entry requirements to support a progressive academic structure
- add courses on fire brigade operations to strengthen practical relevance
- clarify how the course sequence supports learning outcomes and academic progression
- ensure research methodology in a mandatory course to reinforce the academic foundation of the programme

- clarify the feasibility and sustainability of elective courses, including how student numbers will be secured
- define progression requirements and course sequencing to avoid overlap and ensure logical development
- clarify connections between courses and revise their order to support a structured learning pathway

Assessment after new information from HVL

HVL has made some changes in the study plan to improve the flow and ensure the achievement of the learning outcome.

To address progression through the study plan and academic progression HVL has

- established SIK508 Research methodology as a compulsory course taught in the first semester
- moved SIK508 Evacuation and Human behaviour to the third semester, to be taught after or concurrently with SIK504 Modelling Fire Safety
- moved SIK502 Risk Assessment to the fifth semester and recommended to be taken only after successful completion of all other compulsory courses

HVL argues that it is important that SIK500/SIK 501 is taught before SIK503 Fire Science because of its recommended prerequisites.

HVL will not set course-specific requirements since these courses will also be offered as standalone courses. HVL argues that the standalone courses allow professionals to deepen their knowledge in specific areas relevant to their career development and give prospective students greater flexibility to join the programme at an early stage.

To strengthen practical relevance, additional teaching hours on fire brigade operations have been incorporated into the course SIK Contingency Management and Fire Preventive Work HVL requires a minimum five students to attend an elective course. To ensure the best approach the students will be asked at the beginning of the fourth semester to make a list of three electives they plan to choose for the coming semester. HVL will consider each situation individually to offer the students the highest number of options.

To contribute to academic inclusion HVL includes students in the Glød fire safety research meeting at an earlier stage. This is supported by the inclusion of research Methodology in the first semester.

The committee appreciates most of the implemented changes.

The committee's judgement is that it will be very difficult to teach Risk Assessment to students who have not completed the listed prerequisites in fire development and evacuation. These should not be merely recommended—they need to be mandatory prerequisites. Progression within the programme is essential also for the learning outcome.

The committee cannot recommend offering several standalone courses without course requirements for three main reasons:

- it would require lengthy introductions at the start of each course to bring new students up to speed, creating a repetitive experience for students who follow the recommended structure of the programme
- students without prerequisites would hinder discussion and reduce the overall quality of teaching
- merely recommending certain prerequisites would be insufficient; as the programme aims to recruit students from outside Norway, requirements must be communicated clearly and unambiguously, with explicit identification of the foundational knowledge on which each course is based in order to support academic progression for students from diverse educational backgrounds

Requiring a minimum of five students to enrol for a program with the expectation of selecting certain courses, without guaranteeing that these courses will be offered, creates uncertainty and undermines transparency. The committee recommends reducing the number of elective courses to a level that enables HVL to guarantee their availability, or alternatively, ensuring that all listed courses are offered regardless of enrolment numbers. Students must have clarity regarding the structure and content of the programme to make informed decisions about their educational commitment.

Conclusion

The requirements are not fulfilled.

The institution is required to

- introduce course-specific entry requirements to support a progressive academic structure

The institution should

- reduce the number of elective courses to a level that guarantees their availability, or alternatively, ensuring that all listed courses are offered regardless of enrolment numbers, in order to provide students with clarity and reliability regarding the programme they commit to.

Assessment after commitment to accreditation

The Study Plan now content compulsory prerequisites for individual courses in accordance with the recommendations for accreditation from the committee. HVL has also reduced elective courses in line with advice from the committee.

Conclusion

The requirements are fulfilled.

3.3.5 Teaching, learning and assessment methods

Academic Supervision Regulations
Section 2-2 (5) The teaching, learning and assessment methods must be adapted to the programme's learning outcomes. The programme must facilitate students taking an active role in the learning process.

New regulation (Regulation on Universities and University Colleges):
§ 1-11 Krav til studietilbud
e. Undervisnings-, lærings- og vurderingsformer skal være tilpasset læringsutbyttet og utformet slik at de fremmer at studentene tar en aktiv rolle i å forme læringsprosessen.

Assessment

Teaching and learning methods

HVL writes in the application that the teaching methods are adapted to a fully digital situation and allow part-time students to reconcile their professional life with their student life. The teaching methods include asynchronous lectures, exercises, real case studies, project assignments and self-study.
While the digital format increases accessibility, this way of organising the programme may limit students' engagement with the university's vibrant academic and international environment, including:

- active study communities
- international research networks
- exposure to scientific excellence

HVL writes that a good learning environment for the students must be re-established in each course, and this will be particularly important in the introductory courses and at the 4-day gathering on campus Haugesund. Besides this it is not clear how the digital situation supports the students' active learning through the programme.

The purely digital nature of the programme poses challenges, particularly during the initial phase of the programme. A fully remote programme requires further evaluation.

Key concerns include:

- how students engage with the active research environment at HVL
- how students benefit from the social and psychological dimensions of learning
- what strategies are in place to promote inclusion in a digital learning environment
- how student democracy is fostered and how students are integrated into the faculty, department, and research activities
  how students benefit from established international research networks

The academic staff collectively possess the necessary competence to deliver the programme. However, the social and pedagogical dimensions of digital learning are underdeveloped. The courses do not appear to be tailored to the specific challenges of online education, and there is no clear strategy for:

- student support
- academic integration
- social inclusion
- active learning

These elements are essential to ensure a high-quality learning experience in a digital environment. The programme would benefit from a more robust framework for supporting students remotely, including mechanisms for peer interaction, mentoring, and community-building.

Assessment methods
According to the study plan and course descriptions, the programme uses a wide range of assessment formats, including:

- portfolio exams
- project assignments
- written home exams
- oral exams
- case study reports
- digital presentations
- course papers with oral examination
- group presentations
- individual written assignments

These assessment methods appear to be well-aligned with the programme's intended learning outcomes, emphasizing applied knowledge, critical thinking, and communication skills. While the methods appear aligned in principle, the documentation lacks sufficient explanation and integrity mechanisms to confirm their effectiveness. The lack of on-site assessments and insufficient documentation on integrity measures raise concerns about the robustness of the evaluation system. A clearer rationale for the choice and application of assessment strategies would strengthen the programme's pedagogical foundation.

In many courses, multiple forms of assessment are combined to provide a more comprehensive evaluation of student performance. Examples include:

- portfolio + Oral Exam
- written Exam (home-based) + Portfolio
- case Study Report + Oral Presentation
- course Paper + Oral Examination

Notably, there are no written exams or other assessments conducted on-site. All assessments are carried out remotely or in digital formats. For most of the courses there is an oral examination in addition to written examinations.

Research indicates that cheating is more prevalent in online assessments compared to traditional face-to-face exams. Despite this, the programme documentation does not describe how academic integrity is safeguarded in the absence of physical supervision. There is no mention of:

- proctoring tools
- plagiarism detection systems
- mechanisms to prevent impersonation or unauthorized collaboration

Addressing these concerns is essential to ensure the reliability and fairness of the evaluation process, especially in an international context where standards and practices may vary.

The institution is required to

- clarify the rationale for the choice and application of assessment strategies

The institution is advised to:

- reflect on the lack of on-site assessments with respect to concerns about the reliability and fairness of the evaluation process
- for the explicit part of a mandatory course ensure that all students are equipped with the skills and access needed to engage with and contribute to research and development activities
- carry out a structured evaluation over the coming years in order to gain insights and learn from this digital teaching approach

Assessment after new information from HVL

HVL outlines the institution's approach to digital learning, drawing on existing knowledge and prior institutional experience. The approach is based on a theoretical model that emphasizes the importance of social, cognitive and, teaching presence in creating meaningful learning experiences. The document *Strategy for Digital Learning Master`s in Fire Safety Engineering* integrates the institution's pedagogic framework with the operational strategy required to implement it in the Digital Master in Fire safety Engineering.

After received the report from the expert committee HVL has introduced new actions to support digital learning. As mentioned in part 3.4.4, HVL has incorporated students in its research community as students now attend GLØD meetings minimum three times per semester. The students have an option to join the meeting digitally.

The study programme implements a multi-layered, integrated model designed to reduce opportunities for cheating, support transparency and maintain high academic standards.

The Committee will further stress the need for evaluation. Evaluations and exams usually are different between on-line and on-campus studies. Given that digital teaching is still developing, X should regard the programme as a learning process and evaluate it after one complete cycle of delivery.

Conclusion

The requirements are fulfilled.

The institution is advised to

- carry out a structured evaluation over the coming years in order to gain insights and learn from this digital teaching approach

3.3.6 Links to research and/or artistic development work and academic development work

Academic Supervision Regulations
Section 2-2 (6) The programme must have relevant links to research and academic development work and/or artistic research.

New regulation (Regulation on Universities and University Colleges):
§ 1-11 Krav til studietilbud
g. Studietilbudet skal ha relevant kobling til forskning eller kunstnerisk utviklingsarbeid og faglig utviklingsarbeid.

Assessment

The programme offers courses that are clearly aligned with ongoing research, reflecting a strong connection between academic content and current scientific developments. The programme benefits from a strong academic research environment, with faculty actively engaged in international research networks and demonstrating high levels of scholarly competence. The academic community is actively engaged in publishing in international journals and presenting at major conferences. Researchers are also committed members of key networks such as the International Association for Fire Safety Science (IAFSS) and the Nordic Fire and Safety Network and collaborate with institutions including the University of Magdeburg. These affiliations strengthen the programme's academic credibility and provide students with access to cutting-edge research and international expertise.

The programme demonstrates links to research and academic development. However, when all courses are delivered online, the challenges arising from a fully digital format regarding student engagement in research environments and academic communities— should also be more explicitly addressed.

The documentation does not explain how students are introduced to or integrated into the research community, nor how student participation in faculty, departmental, or research activities is facilitated.

The institution is required to:

- ensure that students have opportunities to interact with teachers and peers, both academically and socially and take part of the active academic environment offered

Assessment after new information from HVL

To contribute to academic inclusion, HVL now includes students in the Glød fire safety research meeting at an earlier stage. This is supported by the inclusion of Research Methodology in the first semester.

Conclusion

The requirements are fulfilled.

The institution is advised to

- include academic inclusion into the evaluation suggested above

3.3.7 The programme's internationalisation arrangements

Academic Supervision Regulations
Section 2-2 (7) The programme must have internationalisation arrangements adapted to the programme's level, scope and other characteristics.

New regulation (Regulation on Universities and University Colleges):
§ 1-11 Krav til studietilbud

i. Studietilbudet skal ha ordninger for internasjonalisering som er tilpasset studietilbudets nivå, omfang og egenart. Studietilbud som fører fram til en grad, skal i tillegg ha faglig relevante ordninger for internasjonal studentutveksling.

Assessment

All subjects will be taught in English, which facilitates participation by international and exchange students who are not affiliated with HVL. HVL receives 4 exchange students from Germany each year, but it is not clearly stated how many come from Australia. Additionally, several staff members are international, and their professional networks could be a valuable resource for the program. This makes the programme more accessible for international students, since they have competence in English and to live abroad.

HVL has established formal collaboration agreements with Otto von Guericke University in Magdeburg, Germany, and Victoria University in Australia, enabling international exchange and joint academic initiatives. The faculty is actively engaged in leading international research networks, including the International Association for Fire Safety Science (IAFSS), the Nordic Fire and Safety Network (NFSN), and the Nordic Fire Safety Database (NFSD). Several staff members also serve as work package leaders in collaborative research projects, reflecting a strong commitment to international cooperation, scientific advancement, and knowledge exchange.

The programme benefits from a strong academic research environment, with faculty demonstrating high levels of competence and active engagement in international research networks.

According to the submitted CVs, the academic community participates in and presents their publications at national and international conferences as well as in international journals. The staff publishes extensively in international peer-reviewed journals such as Fire Safety Journal, Fire Technology, Combustion and Flame, and the Journal of Loss Prevention in the Process Industries. Their research covers fire dynamics, combustion, fire risk assessment, evacuation, explosion safety, and industrial fire safety, and includes both theoretical contributions and applied experimental studies relevant to industry. The academic staff maintains active national and international collaborations with Imperial College London (UK), Otto von Guericke University Magdeburg (Germany), University of Victoria (Australia), University of Maryland (USA), and Universidad Politécnica de Madrid (Spain), as well as with the Fire Research and Innovation Centre (FRIC) and other Norwegian partners such as Norconsult, Aibel, and Gassco. These collaborations are reflected in joint publications, research projects, and opportunities for student mobility.

Conclusion

The requirement is fulfilled.

3.3.8 Arrangements for international student exchange

Academic Supervision Regulations
Section 2-2 (8) Programmes that lead to a degree must have arrangements for international student exchanges. The content of the exchange programme must be academically relevant.

New regulation (Regulation on Universities and University Colleges):
§ 1-11 Krav til studietilbud
i. Studietilbudet skal ha ordninger for internasjonalisering som er tilpasset studietilbudets nivå, omfang og egenart. Studietilbud som fører fram til en grad, skal i tillegg ha faglig relevante ordninger for internasjonal studentutveksling.

Assessment

HVL has signed agreements with Otto von Guericke University in Magdeburg and Victoria University in Australia.

The agreement with Otto von Guericke University Magdeburg (Germany) is an Erasmus+ agreement and provides opportunities for student exchange to the program Sicherheit und Gefahrenabwehr (Safety and Hazard Prevention). The programme provides an interdisciplinary approach to fire safety combining engineering, natural sciences, and social sciences. The university has a strong research profile in fire dynamics, risk analysis, and

emergency management. They actively collaborate with fire brigades, civil protection agencies, and industry. The program offers both Bachelor's and Master's programmes in safety engineering.

Erasmus+ facilitates collaboration with other institutions in Europe. In addition, it provides additional incentives for international exchange as funding is made available to finance exchange activities.

Victoria University (Australia) has an internationally recognized fire safety research group, with a focus on fire dynamics, human behaviour in fire, evacuation modelling, and performance-based design. They are active in global research collaborations and standards development and offer graduate and postgraduate programs and research opportunities in fire safety engineering.

In addition, HVL refers to ongoing conversation with the University of Gent and the university of Lund in order to develop agreements in the near future. The committee calls for more exchange agreements with other universities, such as other Scandinavian institutions. This would broaden the opportunities available to all students.

The international student exchange agreements show that incoming exchange students attend campus at HVL. There is no information about how they interact with the Norwegian students.

Conclusion

The requirements are fulfilled.

3.3.9 Supervised professional training

Academic Supervision Regulations
Section 2-2 (9) Programmes that include supervises professional training must have formal arrangements between the institution and the host for supervised professional training.

New regulation (Regulation on Universities and University Colleges):
§ 1-11 Krav til studietilbud
l. For studietilbud med praksis skal det foreligge praksisavtale mellom institusjon og praksissted.

Assessment

- Not applicable for this programme.

3.3.10 The programme's defined limitations and academic breadth

Regulations on Quality Assurance in Higher Education
Section 3-2 (1) Master's degree programmes shall be defined, delimited and have sufficient academic breadth.

New regulation (Regulation on Universities and University Colleges):
§ 1-11 Krav til studietilbud

a. Studietilbudet skal være definert og avgrenset, ha tilstrekkelig faglig bredde (og et dekkende navn.)

Assessment

The programme is well defined and delimited, with a clear profile focused on advanced fire safety engineering. Core subjects cover fire dynamics, structural fire safety, risk assessment, contingency management, explosions, industrial fire safety, and evacuation. Electives expand into applied and emerging areas such performance-based design, laboratory experiments, and detection and extinguishment systems.

The programme has sufficient academic breadth, covering theoretical foundations, applied engineering, societal aspects, and research methodology (as an elective course). The inclusion of a 30 ECTS master's thesis ensures depth and independent research competence.

Conclusion

The requirements are fulfilled.

3.4 Faculty / teaching staff

3.4.1 The faculty / teaching staff's composition, size and competence

Academic Supervision Regulations
Section 2-3 (1) The faculty / teaching staff for each programme must be of a size proportionate to the number of students and the programme's characteristics, be stable over time in terms of competence and have a composition that covers the programme's topics and subjects.

New regulation (Regulation on Universities and University Colleges):
§ 1-12.Generelle krav til fagmiljø
Første ledd: Fagmiljøet tilknyttet studietilbudet skal ha en størrelse som står i forhold til antallet studenter og studiets egenart, være kompetansemessig stabilt over tid og ha en sammensetning som dekker fag, emner og veiledningen som inngår i studietilbudet.

Regulations on Quality Assurance in Higher Education
Section 3-2 (2) Master's degree programmes shall have a broad, stable faculty / teaching staff comprising a sufficient number of staff with high academic expertise in education, research or artistic research and academic development work within the field of study. The faculty / teaching staff shall cover the subjects and courses that the study programme comprises. Staff members in the faculty / teaching staff in question must have relevant expertise.

New regulation (Regulation on Universities and University Colleges):
§ 1-14. Særskilte krav til studietilbud på høyere grad
Første ledd: Fagmiljøet skal være bredt og ha relevant, stabil og høy kompetanse innenfor utdanning, faglig utviklingsarbeid og forskning eller kunstnerisk utviklingsarbeid.

§ 1-12.Generelle krav til fagmiljø
Første ledd: [...] og ha en sammensetning som dekker fag, emner og veiledningen som inngår i studietilbudet.

Assessment

The programme is planned with an annual intake of 15–20 students. The academic environment consists of 15 permanent scientific staff members (8,5 full-time equalities), this creates a good staff–student ratio, ensuring students have access to close supervision and a strong research environment.

The academic environment is stable over time, mainly consisting of professors and associate professors, but also of lecturers with extensive academic and professional experience. Several staff members hold leadership positions within the department, and many have long-standing employment at the institution, which contributes to institutional continuity and stability. The staff members are engaged in ongoing research and development work, publish actively in international journals, and contribute to professional networks both nationally and internationally.

The CVs of academic staff show expertise spanning fire dynamics, combustion, fire risk assessment, fire protection engineering, explosion safety, evacuation, and industrial fire safety. This breadth covers all core subjects outlined in the study plan of the program, meaning the academic staff collectively spans the required knowledge areas.

In total, the staff in the academic community have competence profile that is satisfactory for the planned programme.

According to the documents submitted by HVL, the academic community is actively engaged in research and development. Many of them have published research articles and can demonstrate ongoing research activity. The results are published in international journals and presented at major conferences.

Conclusion

The requirements are fulfilled.

3.4.2 The faculty / teaching staff's educational competence

Academic Supervision Regulations
Section 2-3 (2) The faculty / teaching staff must have relevant educational competence.

New regulation (Regulation on Universities and University Colleges):
§ 1-12 Generelle krav til fagmiljø
Tredje ledd: Fagmiljøet skal ha relevant utdanningsfaglig kompetanse i universitets- og høyskolepedagogikk og -didaktikk, samt kompetanse til å utnytte digital teknologi for å fremme læring. Institusjonen skal legge til rette for oppdatering og utvikling av fagmiljøets kompetanse.

Assessment

Teaching experience and pedagogical courses

The academic environment outlined in *Attachment 15 – CVs for the academic staff* reflects a robust foundation of educational competence. The faculty covers disciplines such as fire safety engineering, physics, applied mathematics, chemical engineering, and risk management. Many staff members bring substantial experience from both academia and industry, ensuring a teaching approach that is both research-informed and practically grounded.

Importantly, most staff have completed higher education pedagogy courses, covering key areas such as:

- didactics
- assessment and feedback literacy
- student-active learning
- PhD supervision

Several faculty members have earned formal ECTS credits in university pedagogy, and some have contributed to the development of digital teaching resources, including participation in initiatives like *Digital snublegruppe* to enhance online education.

This blend of academic qualifications, pedagogical training, and practical experience ensures that the academic environment aligns with national and international standards for educational competence, supporting high-quality teaching and learning in both physical and digital formats.

Pedagogical Development and Support
The institution has implemented a multi-year plan to build teacher competence in digital teaching, as outlined in the *Procedure for Development and Pedagogy Teaching of Teachers*. The methods presented are well-suited to remote learning and reflect a thoughtful integration of digital pedagogy.
Training and support activities include:

- full-day seminar on pedagogy and online video development (Autumn 2024)
- hands-on training with video equipment via *Læring lab*
- manuscript writing for educational videos
- filming and peer review of course videos
- student feedback integration and iterative improvement of materials

There is a strong focus on continuous improvement:

- courses are peer-reviewed during their first run
- student feedback is collected and used to refine teaching materials
- the procedure is repeated each semester to ensure ongoing development

Digital Teaching Methods
Digital teaching methods are central to course delivery:

- all courses (SIK500–SIK599) use online videos available throughout the course
- emphasis on self-study, group work, and problem-based learning
- use of digital meetings and supervision

Although the programme utilizes pre-recorded video content, the underlying pedagogical rationale for these methods—especially in the context of student-centered digital learning environments—is not clearly described in the documentation. Clarifying how these tools support student engagement, interaction, and learning outcomes would strengthen the pedagogical foundation.

Nevertheless, the institution has established a systematic structure for training teachers in digital content creation and pedagogy. The programme uses modern, flexible assessment formats aligned with digital delivery, and feedback loops ensure continuous improvement and adaptation.

While the academic staff possess relevant pedagogical competence—including formal training in university pedagogy and experience with digital content creation—the programme-level strategy for digital teaching and student engagement is underdeveloped. The pedagogical design and implementation of digital learning methods require further development to ensure alignment with the programme's learning outcomes. This is addressed under Sections 3.3.4 and 3.3.5.

As mentioned above, the general educational competence of the staff is not in question. However, given the fact that the programme is purely digital, offering the academic staff a mandatory course in digital learning could further improve staff competence and, as a consequence, programme design.

Conclusion

The requirements are fulfilled.

The institution is advised to

- consider offering the academic staff a mandatory course in digital learning

3.4.3 Academic leadership

Academic Supervision Regulations
Section 2-3 (3) The programme must have a clear academic leadership with defined responsibilities for quality assurance and the development of the study programme.

New regulation (Regulation on Universities and University Colleges):
§ 1-11 Krav til studietilbudet
j. Studietilbudet skal ha en tydelig faglig ledelse med et definert ansvar for kvalitetssikring og -utvikling av studiet.

Assessment

An assistant professor that also is assistant head of department will be appointed as the programme coordinator. An assistant professor will be appointed as a deputy programme coordinator. The programme coordinator will maintain dialogue with the coordinators of each course to share experiences and discuss possible adjustment to the courses.

In addition, the head of the department as well as the assistant department head are connected to the programme, and HVL states this will ensure good coordination and complete coupling between the department and the programme.

Conclusion

The requirements are fulfilled.

3.4.4 Staff with primary employment

Academic Supervision Regulations
Section 2-3 (4) At least 50 per cent of the academic full-time equivalents affiliated to the programme must be staff with their primary employment at the institution. Of these, academic staff with at least associate professor qualifications must be represented among those who teach the core elements of the programme. In addition, the following requirements apply to the faculty / teaching staff's level of competence:

a) For first-cycle programmes, at least 20 per cent of the members of the faculty / teaching staff must have at least associate professor qualifications.

b) For second-cycle programmes, at least 50 per cent of the members of the faculty / teaching staff must have at least associate professor qualifications. At least 10 per cent must have professor or docent qualifications.

c) For third-cycle programmes, the faculty / teaching staff must consist of academic staff with at least associate professor qualifications. At least 50 per cent must have professor qualifications.

New regulation (Regulation on Universities and University Colleges):
§ 1-12. Generelle krav til fagmiljø
Andre ledd: Minst 50 prosent av årsverkene tilknyttet studietilbudet skal utføres av ansatte i hovedstilling ved institusjonen. I de sentrale delene av studietilbudene skal det være ansatte i hovedstilling med førstestillingskompetanse. Førstestillingskompetanse innehas av ansatte i førstestilling og andre med doktorgrad. Førstestillinger er stillingene førstelektor, førsteamanuensis, dosent og professor.

§ 1-14. Særskilte krav til studietilbud på høyere grad
Andre ledd: Innenfor studietilbudets fagområde skal minst 50 prosent av årsverkene i fagmiljøet ha førstestillingskompetanse og minst ti prosent av årsverkene ha professor- eller dosentkompetanse. For studier med obligatorisk praksis kan inntil ti prosent av årsverkene utgjøres av ansatte i delte stillinger og erstatte årsverk med førstestillingskompetanse. Slike delte stillinger kan ikke erstatte andelen årsverk med professor- eller dosentkompetanse.

Assessment

There are 8.5 full-time equivalents (FTEs), with the majority linked to the master's programme. The core components of the programme are fire safety subjects. Some staff members hold 50 percent positions. The FTEs include both primary and senior academic positions.

The academic staff consists of professors, associate professors and assistant professors in addition to one engineering staff. This satisfies the Academic Supervision Regulations §2-3 (4) as:

- all members of the academic staff except one professor with 20 percent position are primary employed at HVL. Four of them holds 50 percent positions.
- more than 50 percent of academic staff have associate professor or higher qualifications (8,1 full-time equivalents)

- more than 10 percent of academic staff hold professor qualifications (3,6 full-time equivalents)
- core courses are taught by associate professors or professors

More details about the qualifications of the academic staff are presented in 3.4.1 in this report.

Conclusion

The requirements are fulfilled.

3.4.5 The faculty / teaching staff's research and/or artistic research and academic development work

Academic Supervision Regulations
Section 2-3 (5) The faculty / teaching staff must be actively engaged in research and academic development work and/or artistic research and be able to demonstrate documented results with a satisfactory quality and scope in relation to the programme's content and level.

Regulations on Quality Assurance in Higher Education
Section 3-2 (3) The faculty / teaching staff must be able to demonstrate documented results at a high level, and results from collaborations with other faculty / teaching staffs, nationally and internationally. The institution's assessments shall be documented so that NOKUT can use them in its work.

New regulation (Regulation on Universities and University Colleges):
§ 1-14 Særskilte krav til studietilbud på høyere grad
Tredje ledd: Fagmiljøet skal drive forskning og kunstnerisk utviklingsarbeid og faglig utviklingsarbeid innenfor studietilbudets fagområde. Fagmiljøet skal kunne vise til dokumenterte resultater på høyt nivå, av en kvalitet og i et omfang som er tilfredsstillende for studietilbudets innhold og nivå i samsvar med kvalifikasjonsrammeverket nivå 7. Fagmiljøet skal kunne vise til resultater i samarbeid med andre fagmiljøer nasjonalt og internasjonalt.

Assessment

The programme benefits from a strong academic research environment, with faculty demonstrating high levels of competence and active engagement in international research networks. The academic staff involved in the Applied Master's Programme in Fire Safety Engineering at Western Norway University of Applied Sciences (HVL) demonstrate a high level of engagement in research and academic development work. Their CVs document a substantial body of peer-reviewed publications, conference contributions, and applied research projects directly relevant to the programme's content and level 7 of the Norwegian Qualifications Framework for Lifelong Learning.

According to the submitted CVs, the academic community participates and presents their publications in national and international conferences as well as international journals. The staff publishes extensively in international peer-reviewed journals such as Fire Safety

Journal, Fire Technology, Combustion and Flame, and the Journal of Loss Prevention in the Process Industries. Their research covers fire dynamics, combustion, fire risk assessment, evacuation, explosion safety, and industrial fire safety, and includes both theoretical contributions and applied experimental studies relevant to industry. The environment maintains active national and international collaborations with Imperial College London, Otto von Guericke University Magdeburg (Germany), University of Victoria (Australia), University of Maryland (USA), and Universidad Politécnica de Madrid (Spain), as well as with the Fire Research and Innovation Centre (FRIC) and other Norwegian partners such as Norconsult, Aibel, and Gassco. These collaborations are reflected in joint publications, research projects, and opportunities for student mobility.

Conclusion

The requirement is fulfilled.

3.4.6 The faculty / teaching staff's external participation

Academic Supervision Regulations
Section 2-3 (6) The faculty / teaching staff for programmes that lead to a degree must actively participate in national and international partnerships and networks that are relevant for the programme.

New regulation (Regulation on Universities and University Colleges):
§ 1-12 Generelle krav til fagmiljø
Fjerde ledd: Fagmiljøet tilknyttet studietilbud som fører fram til en grad og andre studietilbud av et omfang på 60 studiepoeng eller mer, skal delta aktivt i relevante nasjonale og internasjonale samarbeid og nettverk.

Assessment

HVL has established formal collaboration agreements with Otto von Guericke University in Magdeburg, Germany, and Victoria University in Australia, enabling international exchange and joint academic initiatives (see assessment under 3.3.7). The faculty is actively engaged in leading international research networks, including the International Association for Fire Safety Science (IAFSS), the Nordic Fire and Safety Network (NFSN), and the Nordic Fire Safety Database (NFSD). Several staff members also serve as work package leaders in collaborative research projects, reflecting a strong commitment to international cooperation, scientific advancement, and knowledge exchange.

Conclusion

The requirements are fulfilled.

3.4.7 Supervision of professional training

Academic Supervision Regulations
Section 2-3 (7) For programmes involving mandatory supervised professional training, the members of the faculty / teaching staff must have relevant and updated knowledge from the field of the professional training. The institution must ensure that professional training supervisors have relevant competence and experience in the field of the professional training.

New regulation (Regulation on Universities and University Colleges):
§ 1-12. Generelle krav til fagmiljø
Femte ledd: For studietilbud med obligatorisk praksis skal fagmiljøet tilknyttet studietilbudet ha relevant og oppdatert kunnskap fra praksisfeltet. Institusjonen må sikre at praksisveilederne har relevant kompetanse og erfaring fra praksisfeltet.

Assessment

Not applicable for this programme.

4 Conclusion

4.1 Recommendation from the committee

Based on the written application and the attached documentation and the institutions feedback on the committee´s draft report, the expert committee concludes as follows:

> The committee does not recommend accreditation of the Master`s Programme in Fire Safety Engineering at the Western Norway University of Applied Sciences.

The following requirements in Regulation on Universities and University Colleges are not fulfilled:

§ 1-11 Krav til studietilbudet

k. Informasjonen om studietilbudet skal være korrekt, vise studiets innhold, oppbygging og progresjon, herunder muligheter for studentutveksling.
d. Studietilbudets innhold, oppbygging og progresjon skal være tilpasset læringsutbyttet.

4.2 NOKUTs final Conclusion

As the requirements mentioned above are now fulfilled in line with the recommendation from the committee, the Master`s Programme in Fire Safety Engineering at the Western Norway University of Applied Sciences can be accredited.

5 Documentation

24/01218-1 Høgskulen på Vestlandet Søknad om akkreditering av master i Master brannsikkerhet (sivilingeniør)

24/01218-2 Institusjonsprofil

24/01218-15 Tilsvar på rapportutkast Høgskulen på Vestlandet – Akkreditering av master i brannsikkert (sivilingeniør)

24/01218-17 Svar på tilsagn om akkreditering – HØGSKULEN PÅ VESTLANDET – Akkreditering av master i brannsikkerhet (sivilingeniør)

Appendix

1. Learning outcome of the programme

The overall learning outcome of the education is presented as follow:

Knowledge:

The candidate…

- has advanced knowledge and a comprehensive understanding of fire safety analysis and can evaluate various fire scenarios and their expected impact
- has a thorough knowledge of human behaviours in fire and evacuation situations
- has a thorough knowledge of risk-based safety assessments and barrier philosophies with preventive and consequence-reducing measures
- knows the research and development in the field of fire safety in general and especially within their specialization
- can update their fire safety knowledge by gathering varied information and consulting with experts

Skills

The candidate…

1. can analyse and solve theoretical, technical and practical issues in fire safety for buildings, process plants, ships and tunnels
2. can perform modelling of various fire scenarios and impact assessment of these
3. can calculate and model smoke production and toxicological effects depending on the type of fire and materials
4. can model evacuation for actual user groups and identify and remedy bottlenecks for effective evacuation
5. can use appropriate methods to assess fire safety levels in a given context
6. can aid in the design of selected active and passive fire protection measures
7. can identify major accident hazards and suggest appropriate measures for the reduction of major accidents
8. can apply knowledge and relevant results from research and development when proposing risk-reducing measures
9. can complete independent, limited research or development work under supervision and in accordance with applicable ethical norms

General competence

The candidate…

10. can describe and make use of national and international standards

11. can reflect on their professional practice, also in interdisciplinary teams, and adapt the efforts of the current working situation
12. can contribute to the development of good practice in fire safety and apply their knowledge and skills in new areas
13. can discuss human behaviour, including challenges related to risk groups, when developing the organisational fire protection
14. can contribute to innovation, innovation of systems, organisations or designs that improve fire safety
15. can analyse and think critically about information sources and apply these to make decisions
16. can communicate fire-related issues and risks to companies, the relevant authorities, specialists in the field, and the general public.

2. The accreditation process

NOKUT makes an administrative assessment to ensure that the application and documentation is suitable for external expert review. For applications that have been approved administratively, NOKUT appoints external experts for the evaluation of the application. The external experts have declared that they are legally competent to perform an independent evaluation, and carry out their assignment in accordance with the mandate for expert assessment passed by NOKUT's board, and in accordance with the requirements for educational quality as determined by the Regulation to the Act relating to universities and university colleges (*Forskrift til universitets- og høyskoleloven*). The institution is given the opportunity to comment on the committee's composition.

NOKUT is responsible for the training and guidance of the experts during the entire process. Based on the documentation the expert committee writes their assessment. The expert committee conclude either with a yes or no, as to whether the quality of the educational provision complies with the requirements in the Regulation to the Act relating to universities and university colleges (*Forskrift til universitets- og høyskoleloven*). NOKUT also requests that the expert committee advise on further improvements of the programme. All criteria must be satisfactorily met before NOKUT accredits a programme.

If the expert committee recommends accreditation of the programme, the report is sent to the applicant institution, which is then given one week to comment on factual errors. If the committee do not recommend accreditation of the programme, the applicant institution is given three weeks to comment and make smaller adjustments to the programme. The committee receives the institutions comments and submits a revised assessment. The Director of The Department for Accreditation and Quality Assurance/Head of Higher Education then reaches a final decision about accreditation.

3. Presentation of the expert committee

The Academic Supervision regulations section 5-6 determine the expert committee requirements for accreditation of study programmes at the bachelor's and master's level.

Jonas Joel Joseph, University of Bergen
Jonas Joel Joseph is a student in the teacher education programme at the University of Bergen and has previously studied at NLA University College and the School of Leadership and Theology. Joseph is a member of the Student Parliament at UiB, the steering committee for teacher education, and the learning environment committee. At the national level, he is a former member of NSO's International Committee and UHR Administration, and now he is a member of UHR Teacher Education and the Norwegian Institute at Athens.

Anne Simone Dederichs, Technical University of Denmark (DTU)
Anne S. Dederichs has been affiliated with the Technical University of Denmark (DTU) since 2006 and served as Programme Director for the Master's Degree in Fire Safety Engineering from 2009 to 2015. She is currently Associate Professor at DTU and Senior Researcher at RISE Research Institutes of Sweden, where she leads international projects on fire safety engineering, evacuation modeling, and performance-based design.

She is responsible for core courses such as *Fire Dynamics* and *Performance-Based Fire Requirements* and contributes to several other advanced subjects within fire safety. Dederichs has supervised more than 120 bachelor's, master's, and PhD projects, and has acted as examiner and accreditation expert for engineering programs in Norway, Sweden, and Latvia.

Dederichs earned her PhD in Fire Safety Engineering from Lund University in 2004 and holds a degree from the University of Copenhagen. Her research focuses on evacuation safety, human behavior in fire, and innovative fire safety solutions for sustainable buildings. She has published extensively in international peer-reviewed journals and conferences and actively participates in European research collaborations, including leadership roles in large-scale projects such as FireBIM and Smart Evacuation.

Dederichs is a recognized expert in fire safety education and research, contributing to standardization efforts and serving on advisory boards for academic and industry initiatives across Scandinavia and Europe.

Javad Barabady, UiT The Arctic University if Norway
Javad Barabady joined the University of Tromsø in 2007 and became a professor in Safety and Technology at the same institution in 2011. He has been programme director for the master's degree *Technology and Safety in the High North* for over 10 years and has extensive experience in teaching and supervising students. He is responsible for and teaches *Risk and Reliability Engineering*, in addition to several other courses at UiT. Barabady has supervised students at bachelor's, master's, and doctoral levels and has acted as examiner for more than 50 master's theses at the University of Stavanger.
He has published over 80 peer-reviewed international articles in various fields, including

reliability and risk analysis, operation and maintenance engineering and planning, as well as production assurance analysis and management.

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