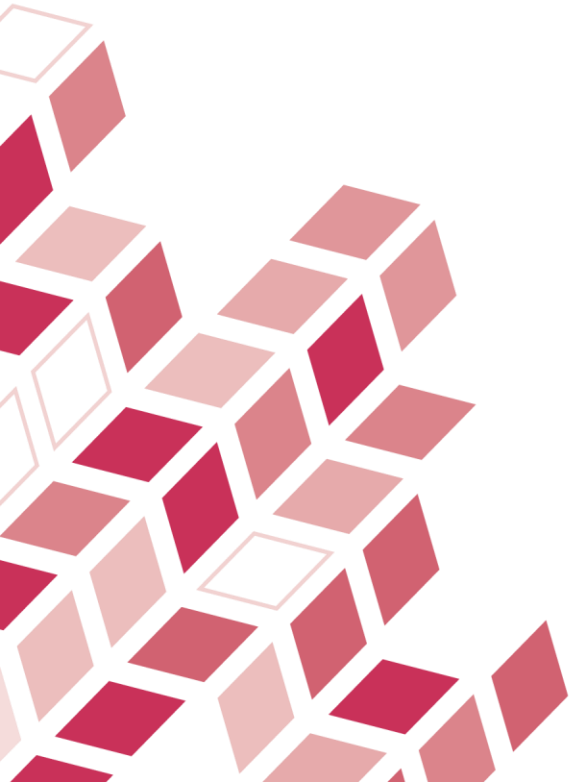
NOKUTs tilsynsrapporter

# Innovasjon og ledelse – samfunnsfaglig retning

Mastergradsstudium ved Høgskolen i Bergen

May 2014



NOKUT Nasjonalt organ for kvalitet i utdanningen

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|---|---|
| Institution: | Bergen University College (Høgskolen i Bergen) |
| Name of educational provision: | Innovation and Management – Social Science Track<br>Innovasjon og ledelse – samfunnsfaglig retning |
| Degree/Studiepoeng (ECTS): | Master degree, 120 studiepoeng (ECTS) |
| Date of Decision: | [12.05.2014] |
| Expert Committee: | Professor Mette Præst Knudsen, Syddansk universitet |
| | Førsteamanuensis Tim Torvatn, Norges teknisk- og naturvitenskapelige universitet |
| Archive Number: | 13/611 |

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# Introduction

The external quality assurance performed by NOKUT consists of evaluating the institution's quality assurance systems, accreditation of new provisions and revision of accredited provisions. Universities and university colleges have different self-accrediting powers. For an institution without self-accrediting powers to establish a provision in a certain cycle an application must be made to NOKUT.

Hereby NOKUT presents the accreditation report of a master degree programme in Innovation and Management – Social Science Track (Innovasjon og ledelse – samfunnsfaglig retning) at Bergen University College (Høgskolen i Bergen).The expert evaluation in this report is part of the accreditation process following Bergen University College's application for accreditation of a master degree programme submitted before the application deadline on 1 September 2013. This report clearly indicates the extensive evaluation performed to ensure the educational quality of the planned educational provision.

Master degree programme in Innovation and Management – Social Science Track (Innovasjon og ledelse – samfunnsfaglig retning) at Bergen University College fulfils NOKUT's conditions for accreditation and is accredited by resolution of 12 May 2014.

This decision does not have limited validity in time. NOKUT will however make a subsequent supervision of the educational provision within three years.

Lysaker, 12. May 2014

Terje Mørland
Director General

Information on accreditation of educational provisions (in Norwegian) at www.nokut.no

# Content

# 1 Information regarding the applicant institution

Bergen University College does not have power of self-accreditation for educational provisions in the second and third cycle (PhD and master degree) and therefore has to apply NOKUT for accreditation. The following educational provisions at the institution have obtained accreditation from NOKUT (in chronological order by year, names of the educational provisions in Norwegian):

- Mastergradsstudium i samfunnsarbeid, 120 studiepoeng (2006)
- Mastergradsstudium i kunnskapsbasert praksis i helsefag, 120 studiepoeng (2007)
- Mastergradsstudium i informatikk - programutvikling, 120 studiepoeng (2008)
- Mastergradsstudium i klinisk fysioterapi, 120 studiepoeng (2008)
- Mastergradsstudium i barne- og ungdomslitteratur, 120 studiepoeng (2009)
- Mastergradsstudium i undervisningsvitenskap, 120 studiepoeng (2009)
- Mastergradsstudium i klinisk sykepleie, 120 studiepoeng (2010)
- Mastergradsstudium i innovasjon og entreprenørskap, 120 studiepoeng (2011)
- Mastergradsstudium i samfunnsfagdidaktikk, 120 studiepoeng (2012)

Bergen University College has 700 employees and 7000 students. The University College is organised in three faculties; Faculty of Education, Faculty of Engineering and Faculty of Health and Social Sciences.

The planned master degree programme in Technology Management – Social Science Track /Teknologiledelse – samfunnsfaglig retning is placed under the Faculty of Engineering. The Faculty consists of six departments and one research centre (Centre of Innovation). Bergen University College has an accredited joint master in Innovation and Entrepreneurship (Innovasjon og entreprenørskap, en realfaglig master i teknologiledelse (IET), 120 studiepoeng/ECTS.

# 2 Description of procedure

NOKUT makes an administrative assessment to ensure that all basic conditions for accreditation are fulfilled as expressed in the Regulation concerning NOKUT's supervision and control of the quality in Norwegian higher education.[1]

After the application was approved administratively, NOKUT appointed 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 concerning NOKUT's supervision and control of the quality in Norwegian higher education.

Following their assessment, the expert committee shall conclude either with a yes or no as to whether the quality of the educational provision complies with the requirements in the Regulation concerning NOKUT's supervision and control of the quality in Norwegian higher education. NOKUT also

[1] http://www.lovdata.no/cgi-wift/ldles?doc=/sf/sf/sf-20110127-0297.html

requests that the expert committee advise on further improvements of the educational provision. All criteria must be satisfactorily met before NOKUT accredits an educational provision.

If the conclusion reached by the expert committee is negative, the report is sent to the applicant institution, which is then given three weeks to comment. Thereafter NOKUT decides whether the comments should be sent to the committee for additional consideration. The committee has been given more time for the final assessment because of the complexity and that they have to evaluate two programmes, and produce two reports. Based on the first report, and the additional assessment, the director general then reaches a final decision about accreditation.

The current report presents the accreditation process chronologically. As described above, the committee is free to change its conclusion on accreditation in the course of the process. The final conclusion is found in part 7.

The committee chose to write their assessment in English. The application and the commentary from Bergen University College however, is in Norwegian.

# 3 Administrative Assessment

Regulation concerning NOKUT's supervision and control of the quality in Norwegian higher education *Forskrift om tilsyn med utdanningskvaliteten i høyere utdanning***.**

**§ 7-1: Basic Conditions for accreditation**

1. Demands expressed in the Universities and Colleges Act concerning the following arrangements will be assessed:

    a. Internal regulations and governance
    b. Appeals Committee
    c. Learning Environment Committee
    d. Educational Plan
    e. Diplomas and Diploma Supplement
    f. Quality assurance system

NOKUT's assessment

The intention of this article is to make it clear and predictable what regulations in the University and Colleges Act (2002) that NOKUT supervises. Bergen University College offers accredited educational provision. Hence, it is presupposed that the demands expressed in the Universities and Colleges Act are fulfilled. The diploma and Diploma Supplement is commented and evaluated under Part 4. The institution's quality assurance system was evaluated and approved in 2011.

# 4 Expert Assessment

This chapter is the expert committee's assessment. The term "we" refers to the expert committee as such. The number preceding each heading refers to the corresponding provision in the Quality Assurance Regulation on Higher Education.

**Summary**

The program is well built up with a staff focusing mainly on innovation and management. The background and research interests of the staff support this area well, and fulfil the formal criteria for a master-level program. The study plan for the program concentrates on innovation management courses, and also supports this with more general management subjects. The students are recruited from bachelor programs in economics and administration, so their backgrounds within these areas are expected to be sufficient.

The main challenge is the placement of the program within the broader field of technology management, and the idea that the candidates should become leaders of technological companies. The reviewers find that this focus on technology management is not well supported. The students recruited have no background in technology, and have few, if any technological skills. The planned study program has courses which touch upon technological problems and challenges (in their innovation courses), but without this background in technological studies and without a substantial number of technological courses in the master's degree, the reviewers believe that the link to the technological area is too weak to support such a focus. Also, the faculty staff is mainly educated in the economics and management field, and mainly does not have a technological background. Thus, the name may be misleading. The reviewers suggest that the name is changed to Master in innovation and/or in innovation management, as such a claim is better supported. Alternatively, the technological component of the program must be expanded, staff with technological background must be brought in and the students must have a more technology-oriented background (or at least a natural science background).

*In summary, the committee can not recommend that the study of Master i Teknologiledelse – samfunnsfaglig retning is offered based on the current application. We recommend further that Bergen University College resubmits its application based on a revision according to the suggestions and requirements in this evaluation.*

## *4.1 Grunnleggende forutsetninger for akkreditering[2]*

### 7-1 1. Krav i lov om universiteter og høyskoler.

*These demands have been evaluated by NOKUT.*

[2] The revised regulation is not officially translated into English. The criteria are therefore only in Norwegian in this report.

### 7-1 1. Vitnemål og Diploma Supplement

#### Assessment

The papers provided in the report fulfil the criteria, but the name and the learning outcomes focuses too much on technology. This will be commented later in the document.

#### Conclusion

YES, Bergen University College fulfil this criterion for the program if the name and focus is changed as discussed below.

- We recommend that the name and focus in the diploma supplement should be updated according to the later comments to changes in the name of the programme and the learning outcomes.

### 7-1 2. Krav i aktuelle forskrifter og rammeplaner fra Kunnskapsdepartementet skal være oppfylt.

#### Assessment

The master's program is a 2 years (120 studiepoeng/ECTS) full time discipline master (cf. national regulation for master's degree section (§) 3). The master's thesis is 30 studiepoeng/ECTS, and meets the requirement according to section (§) 6. Admission requirements 3 year's bachelor's degree with specialization in the master's programme subject (organisasjons- og ledelsesfag, økonomi og administrasjon). Formal requirements regarding size of the program and admission regulations are all fulfilled.

The school should look at how they arrange for cross-disciplinarity between general management and innovation management. The study program contains these two main areas, and they thus need to be integrated through explicit facilitation. Nevertheless, we find little about how Bergen University College plan to accomplish such cross-disciplinarity. This also relates to the different educational backgrounds of the students as they enter the program.

#### Conclusion

YES, Bergen University College fulfils all the formal criteria for the program.

- We recommend that Bergen University College seriously considers ways to make more explicit arrangements for cross-disciplinarity between innovation management and general management.

### 7-1 3. Rekruttering av studenter til studiet skal være stor nok til at institusjonen kan etablere og opprettholde et tilfredsstillende læringsmiljø og et stabilt studium.

#### Assessment

The number of students to be recruited is low, where we find 15 students being in the lower end of what is necessary for a good learning environment. However, as we have seen that there are similar-sized sister programs at Bergen University College, the total number of students taking master level education in innovation should be sufficient for a good learning environment within this field.

Students recruited will mainly come from the internal bachelor program in economics and administration, and second from similar bachelor educations at other universities and university colleges in Norway. Thus, the students should have a fairly similar background, and should correspondingly be easy to integrate into a joint program.

It should be noted that with the suggested recruitment base for the program, none of the candidates will likely have any background in technology-related subject fields. We will return to this point later, since this has a significant impact on the recommendation of the accreditation of the program.

#### Conclusion

YES, the study program fulfils this criterion.

- We suggest that Bergen University College makes an explicit effort to enhance the recruitment from 15 to 20-25 students intake to maintain a sufficient base of students for a coherent learning environment.

### 7-1 4. For studier med praksis skal det foreligge tilfredsstillende avtaler som regulerer vesentlige forhold av betydning for studentene.

#### Assessment

Practice is mainly organised in the course MOØ224, which has four weeks of practice and three reflection seminars that are evaluated based on a final report. In the practice period, students will also gather data for two other courses. This is a very ambitious and interesting idea, which has the potential to become a positive experience. In particular, the idea of linking assignments in other courses to data gathering in the practice company is very nice.

However, the practice period seem much too short to enable the goal achievement. 2x3 weeks with a period in between would be better, and more time, possibly over two semesters (2nd and 3rd) would be even better. Is it possible to extend the number of ECTS points in this course (and correspondingly reduce the ECTS for Gründerskolen)?

A critical point for execution of this idea is the link to the companies. Faculty staff needs to be involved directly with the companies and supervise students while in practice. It is also of crucial importance to have a good understanding with company managers so they are familiar with and accept the scope and focus of the students work obligations. Bergen University College needs to work out and document good procedures for how this will be done and ensured.

Another question is whether Bergen University College can manage to give all the students in this program and the planned sister programs good practice periods in companies. With approximately 30-40 students in the three planned programs, this seems to be a lot of work for nearby companies. We would like to see a better documentation describing the companies involved and the number of students they can integrate with sufficient learning outcomes to be certain that sufficient high-quality practice places exist. The attached example of a company agreement for an individual student seems to be sufficient to serve as a template for additional agreements.

#### Conclusion

NO, we believe the sketched program will fulfil the criteria for the program, and could make the program a very interesting one, but

- The link to the companies needs to be stronger and formalised, especially because Bergen University College needs a high number of committed companies. This is a difficult situation were quality assurance procedures will be of critical importance, and they should be thought through and documented.
- Bergen University College needs to expand the period that students are actually in companies.
- Bergen University College also needs to document that they have access to sufficient number of practice places.

## *4.2 Plan for studiet*

### 7-2 1. Studiet skal ha et dekkende navn.

#### Assessment

The current title stresses technology management. The committee believes that since students recruited to this study program will have none, or at best very few technological courses in their background, and the program does not add any technological courses. In addition, the content of the courses are more managerial than technological in nature. It is true that similar courses are used in other programs to support a focus on technology management but in those cases there are always other courses that are more technology-oriented. Thus, by themselves, these courses cannot support a

technology-oriented name such as the one Bergen University College wants to use here. Thus, the committee find that the name is not suitable for the program

Instead, since the program is tailored around a number of specific courses in innovation, and the rest of the courses are general management or economics courses, the name should reflect these observations. Thus, names such as master in innovation or master in innovation management would be more suitable for the sketched program.

### Conclusion

NO, the name of the study program is not appropriate.

- Given the list of courses provided in the program and the suggested background of the students. Bergen University College should consider other names, preferably adding concepts such as innovation and management.

**7-2 2. Studiet skal beskrives gjennom krav til læringsutbytte, jf. Nasjonalt kvalifikasjonsrammeverk for livslang læring. Det skal formuleres ett totalt læringsutbytte for hvert studium, definert i kunnskap, ferdigheter og generell kompetanse.**

*The learning outcome as described in the program:*

*The learning outcome as described in the program:*

***Knowledge-based learning outcomes***

*K1) The candidate has acquired advanced knowledge in technology management and innovation.*

*K2) The candidate has acquired advanced knowledge of the process of bringing new products and/or services to the market and to the public sector.*

*K3) The candidate is able to combine and apply her/his understanding of innovation and entrepreneurship with her/his insights from management in business or public sector.*

*K4) The candidate has gained an up-to-date understanding of the field in regard to the process of assessing the commercial potential of new products, services and markets.*

*K5) The candidate has acquired an advanced understanding when it comes to identifying opportunities and challenges associated with organising and financing new initiatives such as new business ventures.*

*K6) The candidate has acquired advanced knowledge on business ethics, ethics for decision-making and corporate social responsibility (CSR).*

*K7) The candidate has acquired advanced knowledge on the Nordic model of industrial relations and industrial democracy.*
*K8) The candidate has acquired basic or advanced knowledge in Financial Management and Marketing Management.*

***Skill-based learning outcomes***
*S1) The candidate has acquired advanced analytical skills in technology management and innovation.*
*S2) The candidate has developed the ability to assess the commercial viability of a new idea. The candidate can use various methods and tools for this purpose.*
*S3) The candidate has developed the ability to transform research-based ideas into feasibility- and business plans. The candidate can use (tacit and explicit) methods and tools for this purpose.*
*S4) The candidate has developed advanced skills in entrepreneurship, innovation, processes for organising production, and in presenting new ideas to the private and public sectors.*
*S5) The candidate has advanced skills in analysing technology management, strategies and change processes.*

***General qualifications***
*The candidates should be able to handle and to analyze a broad spectrum of managerial challenges. In that context the candidates should be able to include reflections related to ethics and corporate social responsibility. The candidates should also be able to perform extensive, independent, analytical work, and be able to impart and communicate his/her findings.*

## Assessment

The depth and level of competency that the learning outcomes describe, seems sufficient for a master degree. However, many of them are formulated in general and broad terms. Unspecific outcome formulations constitute a problem because they are not good in guiding the students and evaluators of courses. For example, K6 states "advanced knowledge on business ethics". First, business ethics is in itself a very broad and heterogeneous field and since the outcome has to be obtained through teaching in two different fields with other goals to attain, we find the formulation concerning.

In particular, however, we have problems with the technology concept and the way that it is described and achieved. Technology management is a reasonable concept when the student has technological courses in addition to the management and economics courses, so that the courses can be linked to basic premises for technology. Without these courses, most students are unable to make the connection between technology and management required for proper use of the concept. Adding to this, we also encourage that the program formulates its own understanding of the "technology" to be managed.

Clearly, there are differences in managerial approaches relating to bio and pharma as compared to nano-technologies (just to provide a few examples).

Another challenge is the use of mutually exclusive concepts in the same learning outcome. For example, learning outcome K8 states that "The candidate has acquired basic or advanced knowledge…". This needs to be clarified, so the learning outcome states exactly which level of knowledge to reach. We recommend that a master level program seeks to provide advanced knowledge. With this ambition, there are consequences for the recruitment of the students, since the candidates must have basic knowledge in these fields.

### Conclusion

NO, the learning outcomes are not suited to the content of the program.

- Bergen University College must adapt learning goals K1 and S5 to change the use of technology management. A suitable concept to replace technology management in these learning outcomes could be innovation management, but this needs to be clarified.
- Bergen University College must change learning outcomes with mutually exclusive concepts to make them consistent.
- We also recommend to tighten up the most general learning outcomes, such as K1, K6, K7, K8, S1, S4 and S5, so that they become precise and consistent.

## 7-2 3. Studiets innhold og oppbygning skal samsvare med og være tilpasset læringsutbyttebeskrivelsen slik at læringsutbyttet oppnås.

### Assessment

In general, the structure of the courses reflects an emphasis on innovation and if the name and learning outcomes are changed as suggested above, the structure is suitable for the program.

Bergen University College should however look at the structure for the 1st semester and decide what level the students should reach in marketing and financial management. We suggest that advanced level should be the ambition, since this is a master program.

We agree to the inclusion of practice-based elements in the program, as many of the more specific learning outcomes regards skills that can be taught better as a combination of theory and practice. We do however find that Gründerskolen is giving the students too many ECTS for a rather limited theoretical workload. Conversely, the practice element in MOØ224 should be larger, to achieve the expected learning outcomes (see also earlier description of this point).

### Conclusion

NO, the criteria are not fulfilled. The structure of the program is suited to the learning outcomes described in the plan only IF the necessary changes are made.

- Bergen University College must implement the necessary changes as required in 7-2.2 (and 7-2.1).
- Bergen University College needs to enlarge the number of hours spent in the companies to enhance the effect of the practice period.

## 7-2 4. Arbeids- og undervisningsformer skal samsvare med og være tilpasset læringsutbyttebeskrivelsen slik at læringsutbyttet oppnås.

### Assessment

The suggested program has a suitable work load, and a good spread between lectures, supervised and unsupervised exercises and self-studies. Other learning forms such as practice in companies and fieldwork are also included, making the program well-rounded in its approach to teaching forms. Ordinary lectures are used in courses where most of the learning outcomes are primarily individually-based knowledge competences, whereas courses where reflection and analysis are more important, can have seminars added, and practice-oriented competences are achieved through company visits and actual skills development on companies (for example, students are expected to train their skills in interviewing by interviewing company representatives from co-operating companies to complete an assignment in the course MOØ223). For the master thesis, individual supervision is used, and it is a goal that the thesis work will be done in cooperation with a company.

### Conclusion

YES, the work load and forms of teaching are suitable for the program and for achieving the learning outcomes (given the earlier recommendations) as described in the program description.

## 7-2 5. Eksamensordninger og andre vurderingsformer skal samsvare med og være tilpasset læringsutbyttebeskrivelsen slik at læringsutbyttet for studiet oppnås.

### Assessment

The program has a well-chosen variety of evaluation assessments, such as oral and written exams in addition to written reports. Written exams are generally used to test individual knowledge-based competences, and when learning outcomes such as reflection and analytical competences are important, a home exam (giving the student more time to think) and/or a combination of assignments and exams are used. Thus, exam forms also seems well-suited to the individual character of each

course, and at the same time all important forms of evaluation is used at least once in the program as a whole. For the master thesis, a written thesis, a poster presentation and an oral exam are used, which seems well suited for the learning outcomes of the course.

### Conclusion

YES, the exam and evaluation forms are well-suited to the learning outcomes of the program, and at the same time harmonize well with the individual character of each course.

## 7-2 6. Studiet skal ha en tydelig faglig relevans for arbeidsliv og/eller videre studier.

### Assessment

We find that the program provides the students with a solid background within innovation management, along with general management skills that are suitable for staff positions and lower management positions in firms that have (or want to develop) highly innovative product or service offerings. There is thus no doubt that this makes the candidates interesting for private and public companies and organisations, as candidates with knowledge about innovation and entrepreneurship are in huge demand. As such a name referring to innovation management and/or entrepreneurship as opposed to technology management could even be an advantage to the candidates. The practice element will also assist in making the candidates more visible in the local area and increase the likelihood of candidates being recruited by local businesses, but potentially also in other regions.

As a full 120sp master program, the program also qualifies the candidates for phd studies. The practice of including master students in research projects should help prepare the candidates better for such a career path, so its use should be encouraged.

### Conclusion

YES, we believe the program will be well adapted to the requirements of private and public organisations.

- We recommend that Bergen University College work on describing typical jobs that a candidate can get and use this in their recruitment policies. After some years, real data on what jobs candidates actually got can be added.

### 7-2 7. Studiet skal ha tilfredsstillende kopling til forskning, faglig og/eller kunstnerisk utviklingsarbeid, tilpasset studiets nivå, omfang og egenart.

#### Assessment

The research focus of the staff is primarily oriented towards innovation management in different forms although less on innovation processes within firms. Thus, given that the name and learning outcomes will be changed as per 7-2.1 and 7-2.2 in this report, the program seems to be aligned with the research areas of the staff although an explicit focus on internal innovative activities and practices would be welcome. The staff mainly has backgrounds from economics/business or social sciences, and this fit well with the "soft" approach to innovation management represented in the program.

Another positive aspect presented in the documentation is that 8 out of 11 candidates from the IET (innovasjon og entreprenørskap) joint degree program with University of Oslo, wrote their master thesis in connection with an active research program at Bergen University College. The master thesis has this as a goal, but it is nice to see that sister programs are successful in achieving this, and this inspires confidence in the ability of the Bergen University College to achieve this.

#### Conclusion

NO, but if the name is changed according to the suggestions made above, the program has appropriate linkages to research work within innovation done by the faculty staff. If the connection to technology is kept, the staff must add staff members with strong research backgrounds in specific technology areas.

- Bergen University College should continue the practice of involving master students in their active research programs.
- Bergen University College should consider when recruiting further to add researchers focusing more on internal innovative processes within the firm.

### 7-2 8. Studiet skal ha ordninger for studentutveksling og internasjonalisering relevant for studiets nivå, omfang og egenart.

#### Assessment

The visit to Gründerskolen is a central part of the second semester and is mentioned in the application as the primary exchange option. Gründerskolen is definitely relevant for internationalisation, as it is situated in Houston, Texas, but accepts students from all over the world for its practically oriented programs in entrepreneurship. For the reviewers, it seems as if Grunderskolen is too light in theoretical knowledge to defend the size of 20sp. Also, from the agreement provided, it seems as if the capacity at

Gründerskolen is too low to support all the programs that use Gründerskolen. This is a concern for the committee.

As an alternative, a link to the University of California – Berkeley has been provided. It is not clear whether this link constitutes an alternative to "Gründerskolen" or whether it is a separate issue regarding student exchange, or both. This point needs to be clarified. We suggest that Bergen University College confirms the capacity at the Gründerskolen or alternatively establishes a fully supplementary relationship with another program. We do not find that this relationship has to be with an international program although it will be a strength.

### Conclusion

NO. Although the study program looks as if it may satisfy the criteria, the assessment committee questions whether Gründerskolen can actually fulfil the role required of it. Also, we lack descriptions of alternatives to Gründerskolen, and a description of how and in what situations Berkeley can be used in addition to and/or instead of Gründerskolen.

- Bergen University College needs to explain what alternatives exist to Gründerskolen, and also needs to re-evaluate the sp credits given to Gründerskolen, or at least argue why they think it can defend such a high number of study points.

## 7-2 9. Studiet skal ha lokaler, bibliotekstjenester, administrative og tekniske tjenester, IKT-ressurser og arbeidsforhold for studentene, som er tilpasset studiet.

### Assessment

According to the provided information, the students will have access to facilities and infrastructure at the main campus of Bergen University College. This includes library services, learning platforms and administrative services necessary to the students. More programme specific infrastructure such as access to incubators (both the incubator at Senter for Nyskaping and the student incubator) is also documented in the application. Thus, this should be sufficient. For international exchange, the agreement governing Gründerskolen in Houston seems to secure sufficient infrastructure for students staying there. The reviewers assume that Bergen University College will cover this point in similar agreements with other exchange universities.

### Conclusion

YES, the students in this study program seem to have access to infrastructure relevant for the study program.

- Bergen University College should make sure that infrastructure needs are covered in agreements with future exchange universities

## *4.3 Fagmiljø tilknyttet studiet*

### 7-3 1. Fagmiljøets sammensetning, størrelse og samlede kompetanse skal være tilpasset studiet slik det er beskrevet i plan for studiet og samtidig tilstrekkelig for å ivareta den forskning og det faglige eller kunstneriske utviklingsarbeidet som utføres.

#### Assessment

The faculty (including the newly recruited professor) of the program are a mix between staff with a PhD in economics and staff with PhD in social sciences. Only two staff members are engineering graduates and have a cross-disciplinary approach to innovation. This means that it is difficult to support the proposed emphasis on management of technology-based companies.

However, they clearly have sufficient competence within general management and within the field of innovation and entrepreneurship to run the study program if the name and learning outcomes are slightly changed towards these areas. The foreign exchange program is also manned with staff, which seems well qualified to accept students from this program.

The staff is actively involved in research projects and has recent publications to support their qualifications within the area of innovation and entrepreneurship. They also seem to have recent experience in supervising master candidates in these areas.

#### Conclusion

NO, the faculty for this program does not seem large enough, and competent enough, to support the educational plans, as well as research in areas important to the content of the program as presented in the current application.

- Provided that the learning outcomes and name is changed according to previous comments, the faculty should be sufficient to pass this criteria. However, they do not have sufficient background in technology to support the learning outcomes related to management of technology-based companies. If this focus is kept, more of the staff should have engineering backgrounds.

### 7-3 2. Fagmiljøet skal delta aktivt i nasjonale og internasjonale samarbeid og nettverk relevante for studiet.

#### Assessment

The faculty has close links to similar programs and research groups at several other universities and university colleges. In the application, University of Wales, University of Bergen, BI Norwegian Business School, and Norwegian School of Economics (NHH) are among those most frequently mentioned. Although most of these co-operative networks seems to be organised around persons and are used in particular research projects, they still document that the faculty has research partners that can be utilised into the program applied for.

#### Conclusion

YES, the faculty has sufficient links to national and international research groups to be able to fulfil this criteria.

### 7-3 3. Minst 50 prosent av årsverkene knyttet til studiet skal utgjøres av tilsatte i hovedstilling ved institusjonen. Av disse skal det være personer med minst førstestillingskompetanse i de sentrale delene av studiet.

For de ulike sykler gjelder i tillegg:

a. For første syklus skal minst 20 prosent av det samlede fagmiljøet være ansatte med førstestillingskompetanse

b. For andre syklus skal minst 10 prosent av det samlede fagmiljøet være professorer eller dosenter og ytterligere 40 prosent være ansatte med førstestillingskompetanse.

#### Assessment

The study program faculty is of sufficient capacity, and with the new recruitment (a professor in entrepreneurship) has the required quality in the crucial fields of innovation and entrepreneurship. Though more of the staff should have engineering background, the criteria that at least one of the academic staff has at least "førstestillingskompetanse" in the innovation and entrepreneurship part of the program is fulfilled and if the name is changed according to our suggestion, this would become the core area and the staff would have the necessary competence.. At least 50 per cent of the academic FTEs (full-time equivalent) allotted to the provision are members of the institution's own academic staff. 29 per cent of the relevant discipline community are full professors/dosent, and about 93 per cent are associate professors (førstestillingskompetanse).

#### Conclusion

YES, the faculty fulfils this criterion.

### 7-3 4. Fagmiljøet skal drive aktiv forskning, faglig- og/eller kunstnerisk utviklingsarbeid.

*De syklusene som ikke er aktuelle for denne rapporten, markeres i svakt grått*

For de ulike sykler gjelder i tillegg:

a. For første syklus skal fagmiljøet ha dokumenterte resultater på et nivå som er tilfredsstillende for studiets innhold og nivå.

b. For andre syklus skal fagmiljøet ha dokumenterte resultater på høyt nivå.

#### Assessment

The faculty has been successful in acquiring research grants for their key areas in innovation management and entrepreneurship, and also has been able to publish recently in scientific journals. They are also part of research networks working on similar topics, for example at the University of Wales, University of Bergen, BI Norwegian Business School and Norwegian School of Economics (NHH)

#### Conclusion

YES, the faculty staff fulfils this criteria.

### 7-3 5. For studier med praksis skal fagmiljøet og eksterne praksisveiledere ha hensiktsmessig erfaring fra praksisfeltet.

#### Assessment

The program has two practice parts, Gründerskolen/Berkeley and the company-placement course in the third semester. Gründerskolen/Berkeley has well qualified faculty staff with experience within the practice field, so this is sufficient. However, since we do not know what other universities may be participating in the exchange program, Bergen University College needs to make sure that any alternatives to Gründerskolen/Berkeley also fulfils this criterion. The staff also has experience with the company-placement course from a sister program.

#### Conclusion

YES, the staff fulfils this criteria.

- Bergen University College should make sure that the universities they cooperate with in the future can document sufficient experience with the practice field to continue to fulfil this criterion.

# 5 Conclusion

Based on the above assessments and conclusions relating to the application "*Søknad om akkreditering: Master i teknologiledelse – samfunnfaglig retning"* the committee concludes the following:

**The Committee does not recommend accreditation of the *Master i teknologiledelse – samfunnsfaglig retning* at Bergen University College.**

The expert assessment states which demands the institution is required to meet in order to achieve accreditation. In addition, the committee has provided advice for the further development of this educational provision.

**The following demands are not met:**

**7-1 4. For studier med praksis skal det foreligge tilfredsstillende avtaler som regulerer vesentlige forhold av betydning for studentene.**

**7-2 1. Studiet skal ha et dekkende navn.**

**7-2 2. Studiet skal beskrives gjennom krav til læringsutbytte, jf. Nasjonalt kvalifikasjonsrammeverk for livslang læring. Det skal formuleres ett totalt læringsutbytte for hvert studium, definert i kunnskap, ferdigheter og generell kompetanse.**

**7-2 3. Studiets innhold og oppbygning skal samsvare med og være tilpasset læringsutbyttebeskrivelsen slik at læringsutbyttet oppnås.**

**7-2 7. Studiet skal ha tilfredsstillende kopling til forskning, faglig og/eller kunstnerisk utviklingsarbeid, tilpasset studiets nivå, omfang og egenart.**

**7-2 8. Studiet skal ha ordninger for studentutveksling og internasjonalisering relevant for studiets nivå, omfang og egenart.**

**7-3 1. Fagmiljøets sammensetning, størrelse og samlede kompetanse skal være tilpasset studiet slik det er beskrevet i plan for studiet og samtidig tilstrekkelig for å ivareta den forskning og det faglige eller kunstneriske utviklingsarbeidet som utføres.**

**The following demands must be met in order to achieve accreditation:**

- The link to the companies needs to be stronger and formalised, especially because Bergen University College needs a high number of committed companies. This is a difficult situation were quality assurance procedures will be of critical importance, and they should be thought through and documented.
- Bergen University College needs to expand the period that students are actually in companies.
- Bergen University College also needs to document that they have access to sufficient number of practice places.
- Given the list of courses provided in the program and the suggested background of the students. Bergen University College should consider other names, preferably adding concepts such as innovation and management.
- Bergen University College must adapt learning goals K1 and S5 to change the use of technology management. A suitable concept to replace technology management in these learning outcomes could be innovation management, but this needs to be clarified.
- Bergen University College must change learning outcomes with mutually exclusive concepts to make them consistent.
- Bergen University College must implement the necessary changes as required in 7-2.2 (and 7-2.1).
- Bergen University College needs to enlarge the number of hours spent in the companies to enhance the effect of the practice period.
- Bergen University College should continue the practice of involving master students in their active research programs.
- Bergen University College should consider when recruiting further to add researchers focusing more on internal innovative processes within the firm.
- Bergen University College needs to explain what alternatives exist to Gründerskolen, and also needs to re-evaluate the sp credits given to Gründerskolen, or at least argue why they think it can defend such a high number of study points.
- Provided that the learning outcomes and name is changed according to previous comments, the faculty should be sufficient to pass this criteria. However, they do not have sufficient background in technology to support the learning outcomes related to management of technology-based companies. If this focus is kept, more of the staff should have engineering backgrounds.

**The committee offers the following advice to develop this educational provision further:**

- We recommend that the name and focus in the diploma supplement should be updated according to the later comments to changes in the name of the programme and the learning outcomes
- We recommend that Bergen University College seriously considers ways to make more explicit arrangements for cross-disciplinarity between innovation management and general management.
- We suggest that Bergen University College makes an explicit effort to enhance the recruitment from 15 to 20-25 students intake to maintain a sufficient base of students for a coherent learning environment.
- We also recommend to tighten up the most general learning outcomes, such as K1, K6, K7, K8, S1, S4 and S5, so that they become precise and consistent.
- We recommend that Bergen University College work on describing typical jobs that a candidate can get and use this in their recruitment policies. After some years, real data on what jobs candidates actually got can be added.
- Bergen University College should make sure that infrastructure needs are covered in agreements with future exchange universities.
- Bergen University College should make sure that the universities they cooperate with in the future can document sufficient experience with the practice field to continue to fulfil this criterion.

# 6 Commentary from the institution

Bergen University College's comments to the report was received on 22 January 2014. There were 13 attachments to the main document. The comments is only in Norwegian, and will not be translated.

Overordnet kommentar – Master i ledelse av Innovasjon og teknologi – samfunnsfaglig retning

Denne masteren er en videreutvikling og utvidelse av opptaksgrunnlaget for et studium som allerede eksisterer og fungerer meget bra. Det ble opprettet (egenakkreditert) av UiO i 2009 og HiB fikk det akkreditert som en fellesmaster i 2011 (Vedlegg 1 og 2). Den gang var tilbakemeldingene fra faglig kommisjon svært positive og vi ble oppfordret til å videreutvikle mastergraden og utvide opptaksgrunnlaget til også å inkludere kandidater med bachelorgrad i økonomi og administrasjon og ledelsesfag (ØkAdm). Høgskolen i Bergen er en av få høgskoler i landet der ingeniørutdanning og ØkAdm er tett integrert i samme avdeling. For HiB er det et viktig samfunnsmandat å utdanne høyt utdannede fremtidige medarbeidere og ledere for teknologisk virksomheter. Frem til 2030 er etterspørselen etter slik kunnskap antatt å være betydelig (Cappelen et al., 2013: 27). I teksten under viser vi hvordan vi innfrir anbefalingene fra faglig komite:

7-1 1. Oppdatert Vitnemål og Diploma Supplement er vedlagt (vedlegg 3 og 4).

7-1 4 Avtaler om Praksisplasser

Vedlegg 5 dokumenterer avtaler om praksisplasser (vedlegg 5). Gjennom vårt tette samarbeid med regionale næringsklynger har vi tilgang til rundt 150 virksomheter og kan tilby praksis tilpasset hver enkelt students faglige bakgrunn, ønsker og behov. Vi mener derfor at ikke alle praksisplasser kan eller bør forhåndsdefineres. HiB ved Senter for nyskaping har etablert svært nære relasjoner til sentrale næringsklynger i regionen. Disse er NCE Subsea, MediArena og Maritim Cleantech West. NCE Subsea med om lag 130 bedriftsmedlemmer var også en pådriver for etableringen av studiet fra et tidlig tidspunkt. Dette samarbeidet er også en del av innovasjons-programmet Accel der våre masterstudenter deltar og som Høgskolen i Bergen driver sammen med Bergen Teknologioverføring AS. De sentrale bedriftene i de nevnte næringsklyngene har gjennom Accel programmet også tatt i mot studenter i tillegg til å bidra i innovasjonsprogrammet.

Vi tar, etter anbefaling fra faglig kommisjon, sikte på å utvide praksisperioden i 3. semester til 5-6 uker (Emne MOØ224).

7-2 1 Studiet skal ha et dekkende navn

Vi er enig med fagkomiteen i at det er naturlig å løfte frem vår viktige innovasjonskompetanse i mastergradens navn. Samtidig ønsker vi å beholde henvisningen til vår nære kunnskapskobling til de produksjonsorienterte ingeniørfagene og vår tunge utdanningsportefølje innen organisering og ledelse. På utdanningssiden er masteren en hovedsatsing innen Avdeling for Ingeniørutdanning (AI) ved HiB. På forskningssiden er innovasjon og teknologiledelse blant de høyest prioriterte områdene (Vedlegg 6). HiB har fått godkjent en fellesmaster med UiO med tittel «Innovation and Entrepreneurship / Teknologi innen innovasjon og entreprenørskap». I søknaden som denne merknaden gjelder, er fagene i teknologiledelse ved masteren utvidet i forhold til den vi alt har fått godkjent.

Teknologiledelse er i forsknings- og læreboktradisjonen gitt ulike definisjoner. To hovedtrender skiller seg ut: Det er brukt som over- eller metabegrep for fagtradisjonene økonomi, innovasjon/entreprenørskap og organisasjon og ledelse. Dette er bl.a. vist i to nyere læreverk som er utgitt i Norge: Teknologiledelse (Torvatn, 2012) og Teknologiledelse. Innovasjon – Økonomi – Organisasjon (Sending and mfl., 2013). Den andre forståelsen er snevrere og dekker organisering og ledelsesfunksjoner i teknologibedrifter eller deler av virksomheter der den teknologiske dimensjonen står sentralt (Skauge, 2011) (Vedlegg 7). Det er den siste forståelsen som er lagt til grunn for emne MOØ222. I vår justerte tittel legger vi oss på den første definisjonen, men velger å synliggjøre den store innovasjonskomponenten i studiet særskilt.

Det som i hovedsak skiller teknologiledelse fra annen type ledelse, vil være teknologiforståelse. Dersom studentene ikke har noen bakgrunn innen teknologiske fag, er det derfor viktig å gi studentene denne forståelsen gjennom studiet. Ikke minst er dette viktig på Vestlandet der teknologibedrifter er sentrale for verdiskaping og har ledelse både med og uten teknologisk utdanning. I vår omsøkte master får studentene teknologiforståelse både gjennom MOØ200 Innovation Theory and Innovation Strategy, MOØ214 Operations Management, MOØ222 Teknologiledelse, hospitering i teknologibedrifter og masteroppgaven. I tillegg vil vi opprette tverrfaglige grupper i fellesfagene, som i MOØ210 og MOØ222. Dessuten vil studentene oppleve det flerfaglige miljøet på lesesalen og andre sosiale sammenhenger på studiet (Vedlegg 8).

Denne forståelsen av teknologiledelse er også i overensstemmelse med faglig forankring i andre studier som bruker begrepet teknologiledelse. Rett nok har de fleste studiene med teknologiledelse i navnet ingeniører/teknologer som målgruppe, men det finnes også eksempler på norske studier i teknologiledelse hvor det ikke kreves utdannelse i teknologiske fag (verken som forkunnskaper eller underveis i studiet), f.eks. Master of Technology Management (MTM) ved NTNU/NHH Executive og MBA i Teknologiledelse ved UiN. Teknologiledelse ved Universitetet i Bergen forutsetter heller ikke teknologiutdanning og er tungt forankret i organisasjons- og ledelsesfagmiljøet der.

7-2 2 og 7-2 3 Krav til læringsutbytte og samsvar med studiets innhold og oppbygging

Vi har etter kommisjonens anbefaling justert læringsutbyttene til studiet, Se vedlegg 9 og kommentar under 7-1 4

7-2 7 Studiets kopling til forskning

Fagkomiteen uttaler at dersom masterens navn endrer navn på en slik måte at innovasjonselementet kommer tydeligere fram har programmet «appropriate linkages to research work» (s.11). Som vist ovenfor er denne endringen er nå gjennomført. I tillegg vil vi understreke at fagmiljøets forskningsaktiviteter både knyttet til fagområdene «Teknologiledelse og organisering» og «Innovasjon og entreprenørskap» (masterens to fagpillarer) er blitt ytterligere styrket etter at den opprinnelige søknaden ble sendt inn. (Vedlegg 11) Innenfor det første fagområdet er det kommet til to nye ekstern finansierte utviklings- og forskningsprosjekter hvor fagmiljøet deltar. Dette er prosjektene «Kompetanseutvikling i CNC og robot-næringsmiljøet i Hordaland», som finansieres av Innovasjon Norge og hvor også en rekke næringslivsaktører deltar noe som innebærer at vårt samarbeid med praksisfeltet styrkes, og prosjektet «Transition to sustainable energy systems in emerging economies: A South African focused comparative project», som finansieres av Norges Forsknigsråd og hvor noen av samarbeidspartnere er Universitetet i Bergen og University of Cape Town (South Africa). Videre deltar fagmiljøet i to store nye innovasjonsfaglige forskningsprosjekter: «Path development in different regional settings. Regional policy approaches in the global economy» og «Exploring the role of VRI in regional innovation system formation and new path development». Samarbeidspartnerne på disse prosjektene er blant annet Universitetet i Stavanger, Universitetet i Agder, Universitetet i Tromsø, NIFU Step og Universitetet i Lund. Prosjektene finansieres av Norges forskningsråd, er treårige, og har en samlet ramme på ca 35 millioner kroner. HiBs andel er ca 7,5 millioner kroner.

7-2.8 Ordninger for studentutveksling og internasjonalisering

I 2. semester legger vi opp til at studentene enten kan ta Gründerskolen i Houston med tilhørende opplegg, eller reise på utveksling til UC Berkeley. Studenter som ikke har mulighet til å reise utenlands har et eget opplegg i Bergen. For at det skal bli mest mulig likt de som reiser til Houston, har vi besluttet å endre fagstørrelsene til 2x10 studiepoeng også for de som følger opplegget i Bergen (MOØ220 og MOØ221), se vedlegg 3, 4 og 10.

Gründerskolen er et samarbeidsprosjekt mellom mange utdanningsinstitusjoner i Norge. Programmet koordineres av Senter for entreprenørskap (SFE) ved Universitetet i Oslo. Det er dette senteret vi i dag har en fellesmaster med og de plasserte allerede fra starten av Gründerskolen inn som en naturlig del av opplegget. SFE, ved leder Truls Erikson, har sagt seg positive til å fortsette dette også dersom vi skulle utvide opptaksgrunnlaget og/eller få egenakkrediterte mastergrader. Gründerskolen er et veletablert og kvalitativt godt tilbud på mastergradsnivå og integrert i flere liknende masterprogram

ved norske universitet (f.eks. ved NMBU og UiO). Gründerskolen har også mottatt ros for sitt opplegg (Kunnskapsdepartementets pris for fremragende arbeid med utdanningskvalitet – utdanningskvalitetsprisen i 2007) og den var også en sentral del av søknaden fra Senter for entreprenørskap ved UiO om status som Senter for fremragende utdanning der senteret kom til finalen.

7-3 1 Fagmiljøets sammensetning, størrelse og samlede kompetanse

Som tidligere vist er masterprogrammets navn endret slik at innovasjonselementet kommer tydeligere fram. I følge fagkomiteen er fagmiljøet sammensetning, størrelse og samlede kompetanse da av en slik art at «the faculty should be sufficient to pass this criteria» (s.14). Vi ønsker imidlertid å gi noen supplerende opplysninger knyttet til fagmiljøet.

Etter at den opprinnelige søknaden ble sendt inn er Marina Solesvik ansatt som professor II på programmet. Det kan ta tid å besette en full professorstilling innen innovasjon og ledelse, så vi oppretter nå et eget II'er program hvor vi vil rekruttere inn 3-4 II'er stillinger (Vedlegg 12), i tillegg til Solesvik, for å betjene masterprogrammet og styrke fagmiljøet. Dette gir oss mulighet til også å hente inn kandidater med relevant næringslivbakgrunn, og dermed styrke vår kobling mot praksisfeltet. Videre vil vi opplyse om at HiB i desember 2013 gjorde et styrevedtak om at «Innovasjonspraksis i et profesjons- og samfunnsperspektiv» skal løftes fram som en ny doktorgradssatsing ved HiB. Dette innebærer en ytterligere styrking av HiBs satsing på teknologiledelse, innovasjon og entreprenørskap, som igjen vil være svært gunstig for fagmiljøet knyttet til masterprogrammet.

Konklusjon:

Vi har gjennomgått de punkt der fagkomiteen har påpekt svakheter. Innvendingene er konstruktive og vi har blant annet endret studiets navn og justert våre planer i henhold til anbefalingene. Vi ber om at NOKUT gir HiB tillit til at vi kan starte opp dette mastertilbudet som en parallell til vår eksisterende master for ingeniører. Søknaden om utvidet opptaksgrunnlag er en iverksetting av rådet NOKUT ga oss i 2011.

# 7 Expert Committee's additional evaluation

### Assessment of the Commentary from the Institution

**7-1 4. For studier med praksis skal det foreligge tilfredsstillende avtaler som regulerer vesentlige forhold av betydning for studentene.**

In the assessment based on the application from the university college, we concluded that the following demands had to be met in order to fulfil the criteria:

*NO, we believe the sketched program will fulfil the criteria for the program, and could make the program a very interesting one, but*

- *The link to the companies needs to be stronger and formalised, especially because Bergen University College needs a high number of committed companies. This is a difficult situation*

*were quality assurance procedures will be of critical importance, and they should be thought through and documented.*

- Bergen University College needs to expand the period that students are actually in companies.
- Bergen University College also needs to document that they have access to sufficient number of practice places.

### Assessment

In the attachments to the application from the institution, there are now included formal agreements with several companies. Although the number of companies still seems to be lower than the need (at least when the program is fully implemented), the committee finds that the formal contracts attached to the application shows that the institution has the necessary network among local industry to arrange for the practice period, and that additional practice places can be added when necessary. We cannot, however, see that quality assurance procedures have been developed for ensuring the quality of the practice period, as we asked for. We do, however, realize that the institution needs more time to develop these thoroughly, and we therefore accept this point, but advise that the institution develops such procedures before the start of the program.

### Conclusion

Yes, the criterion is fulfilled.

- Bergen University College is advised to develop and document quality assurance procedures to ensure the quality of the learning processes in and around the practice period.

**7-2 1. Studiet skal ha et dekkende navn.**

In the assessment based on the application from the university college, we concluded that the following demands had to be met in order to fulfil the criteria:

*NO, the name of the study program is not appropriate.*

- *Given the list of courses provided in the program and the suggested background of the students. Bergen University College should consider other names, preferably adding concepts such as innovation and management.*

### Assessment

The name has been changed and is now Master i ledelse av innovasjon og teknologi – samfunnsfaglig retning. Thus, innovation is now a part of the name, and that is a step in the right direction. However, as the committee has said before, it does not seem proper to use the concept technology management in the name when in particular the students, but also for the main part the scientific staff do not have technological backgrounds.

The institution argues that this program is located within the engineering department, and is a central part of that department and its strategic plans. We agree with that, but it is not relevant as long as the program is not designed to utilize the technological skills of the staff from the engineering department. The institution also points to the book “Teknologiledelse” by Torvatn, and says that this book shows that technology management is a concept that covers economic and managerial topics applied to

technological companies. It is correct that this book contains chapters taken from teaching material in economics and management, but the institution overlooks the fact that the use of the book is in a context where the students are engineering students, and the teaching staff in the course where the book is used all have engineering backgrounds. This is not the context in which the concept is used in this program. Thus, the comparison is not very relevant for the challenge at hand. A third argument forwarded by the institution is that other programs, such as the Master of Technology Management (MTM) at NTNU/NHH, do not require students to have a technological background either. Again, while this is strictly true in the sense that students with a master in economics and administration can take the MTM program, the institution again fails to recognize the different context of this program. MTM is directed towards people with at least five years of relevant work experience in a technology firm, and students applying for the program need to submit a CV documenting this experience. Also, many of the teaching staff involved in the program has engineering backgrounds. None of these factors are part of the context of the program that the institution wants us to assess.

### Conclusion

No, the provision does not have an adequate name.

- Bergen University College must either take technology management out of the name, or change the background requirements for the students (and/or assign more staff with a technological background to the program). The committee points out that Master in innovation management would be fully acceptable, given the background of the faculty staff and the students, and the course content of the program.

**7-2 2. Studiet skal beskrives gjennom krav til læringsutbytte, jf. Nasjonalt kvalifikasjonsrammeverk for livslang læring. Det skal formuleres ett totalt læringsutbytte for hvert studium, definert i kunnskap, ferdigheter og generell kompetanse.**

In the assessment based on the application from the university college, we concluded that the following demands had to be met in order to fulfil the criteria:

*NO, the learning outcomes are not suited to the content of the program.*

- *Bergen University College must adapt learning goals K1 and S5 to change the use of technology management. A suitable concept to replace technology management in these learning outcomes could be innovation management, but this needs to be clarified.*
- *Bergen University College must change learning outcomes with mutually exclusive concepts to make them consistent.*
- *We also recommend to tighten up the most general learning outcomes, such as K1, K6, K7, K8, S1, S4 and S5, so that they become precise and consistent.*

### Assessment

Most of these learning outcomes have been changed in ways that is acceptable to the committee. However, in K1b), the learning outcome is "The candidate has acquired a thorough understanding of technology…". Here, again, we disagree with the institution and find that the students cannot possibly achieve this learning outcome. These are students with no background in technology, and their faculty staff does not in general have a technological background either. Thus, even though the practice period is useful, it will in the opinion of the committee not be enough to really understand technology. The options are therefore either to take it out of the learning outcomes, to change the outcome to something that the students are likely to achieve, or thirdly, to specify more clearly based on the single courses the exact parts of technology they now understand (e.g. from the operations management course).

### Conclusion

No, the learning outcomes is not adequate.

- Bergen University College must revise or delete learning outcome K1b as described in the comment.

**7-2 3. Studiets innhold og oppbygning skal samsvare med og være tilpasset læringsutbyttebeskrivelsen slik at læringsutbyttet oppnås.**

In the assessment based on the application from the university college, we concluded that the following demands had to be met in order to fulfil the criteria:

*NO, the criteria are not fulfilled. The structure of the program is suited to the learning outcomes described in the plan only IF the necessary changes are made.*

- *Bergen University College must implement the necessary changes as required in 7-2.2 (and 7-2.1).*
- *Bergen University College needs to enlarge the number of hours spent in the companies to enhance the effect of the practice period.*

### Assessment

The institution has expanded the time spent in the practice period, and this is adequate respond to the second bullet point in this point. However, the name and the learning outcome K1b have not been sufficiently changed, so the first bullet point has not been cleared.

### Conclusion

No, the provision's content and design is not adequate.

- Bergen University College must change the name and learning outcome K1b in correspondence with the comments above (7-2.1 and 7-2.2).

**7-2 7. Studiet skal ha tilfredsstillende kopling til forskning, faglig og/eller kunstnerisk utviklingsarbeid, tilpasset studiets nivå, omfang og egenart.**

In the assessment based on the application from the university college, we concluded that the following demands had to be met in order to fulfil the criteria:

*NO, but if the name is changed according to the suggestions made above, the program has appropriate linkages to research work within innovation done by the faculty staff. If the connection to technology is kept, the staff must add staff members with strong research backgrounds in specific technology areas.*

- *Bergen University College should continue the practice of involving master students in their active research programs.*
- *Bergen University College should consider when recruiting further to add researchers focusing more on internal innovative processes within the firm.*

### Assessment

In the response from the university college, the institution shows that they have two new programs that are added to the institutions portfolio. Both these programs are cross-disciplinary, and thus shows the institutions commitment to this principle. The themes of these two programs also support the institution's strength within innovation and related areas, and thus also strengthens the research background relevant to the program. The committee feels that this proves that the institution moves in the right direction, thus having indicated that they are able to fulfil this criteria.

### Conclusion

YES, the criteria is fulfilled

- Bergen University College should continue to use their research programs to support cross-disciplinary efforts, and in particular strive to find projects where both the researchers from this department and researchers from technical departments are working together. This will serve to strengthen the links to technology, thus going in the direction of technology management.

**7-2 8. Studiet skal ha ordninger for studentutveksling og internasjonalisering relevant for studiets nivå, omfang og egenart.**

In the assessment based on the application from the university college, we concluded that the following demands had to be met in order to fulfil the criteria:

*NO. Although the study program looks as if it may satisfy the criteria, the assessment committee questions whether Gründerskolen can actually fulfil the role required of it. Also, we lack descriptions of alternatives to Gründerskolen, and a description of how and in what situations Berkeley can be used in addition to and/or instead of Gründerskolen.*

- *Bergen University College needs to explain what alternatives exist to Gründerskolen, and also needs to re-evaluate the sp credits given to Gründerskolen, or at least argue why they think it can defend such a high number of study points.*

### Assessment

The institution has secured an agreement with Gründerskolen, which allows for expansion of the number of students coming from HiB, and as also changed the courses at their own institution to allow for a comparable alternative for students who cannot or will not go abroad. Thus, they have satisfied our comments.

### Conclusion

Yes, the exchange arrangement is organized in a satisfactory way.

**7-3 1. Fagmiljøets sammensetning, størrelse og samlede kompetanse skal være tilpasset studiet slik det er beskrevet i plan for studiet og samtidig tilstrekkelig for å ivareta den forskning og det faglige eller kunstneriske utviklingsarbeidet som utføres.**

In the assessment based on the application from the university college, we concluded that the following demands had to be met in order to fulfil the criteria:

*NO, the faculty for this program does not seem large enough, and competent enough, to support the educational plans, as well as research in areas important to the content of the program as presented in the current application.*

- *Provided that the learning outcomes and name is changed according to previous comments, the faculty should be sufficient to pass this criteria. However, they do not have sufficient background in technology to support the learning outcomes related to management of technology-based companies. If this focus is kept, more of the staff should have engineering backgrounds.*

### Assessment

We believe that the professor II positions can help the program to achieve a stronger cross-disciplinary approach, but this would obviously depend on the background of the people holding these positions. Thus, if these positions are used to recruit scholars with a technological background, this would help in enabling further the cross-disciplinary approach.

The faculty must be assessed in relation to the programme, and as long as the learning outcomes and the name of the programme has not been changed according to previous comments, the committee's conclusion is the same.

### Conclusion

No, the discipline community is not adequate for the programme.

- Bergen University College must still change the name and the learning goal K1b in order to have personell that covers the learning outcomes of the program and thus fulfils the promise given in the title.

## Conclusion

Based on the written application "*Søknad om akkreditering: Master i teknologiledelse – samfunnsfaglig retning"*and the comments from Bergen University College to the expert assessment, the committee concludes the following:

**The Committee does not recommend accreditation of the *Master i teknologiledelse– samfunnsfaglig retning* / *MSc in Technology Management – Social Science Track* at Bergen University College.**

# 8 Decision[3]

Høgskolen i Bergen søkte til søknadsfristen 1. september 2013 om akkreditering av mastergradsstudium i teknologiledelse – samfunnsfaglig retning ved Høgskolen i Bergen. De sakkyndige avga sin uttalelse i vurdering datert 19. desember 2013, med tilleggsvurdering av 12. mars 2014.

NOKUT har vurdert vilkårene i NOKUTs forskrift om tilsyn med utdanningskvaliteten i høyere utdanning av 28. februar 2013, og har etter dette truffet følgende vedtak:

*Søknad om akkreditering av mastergradsstudium i teknologiledelse – samfunnsfaglig retning (120 studiepoeng) ved Høgskolen i Bergen avslås.*

Begrunnelse for vedtaket
*Følgende krav i forskrift om tilsyn med utdanningskvaliteten i høyere utdanning av 28. februar 2013 (studietilsynsforskriften) er ikke oppfylt:*

7-2 Plan for studiet

Studiet skal ha dekkende navn

Studiet skal beskrives gjennom krav til læringsutbytte, jf. Nasjonalt kvalifikasjonsrammeverk for livslang læring. Det skal formuleres ett totalt læringsutbytte for hvert studium, definert i kunnskap, ferdigheter og generell kompetanse.

Studiets innhold og oppbygning skal samsvare med og være tilpasset læringsutbyttebeskrivelse slik at læringsutbyttet oppnås

7-3 Fagmiljøet tilknyttet studiet

Fagmiljøets sammensetning, størrelse og samlende kompetanse skal være tilpasset studiet slik det er beskrevet i plan for studiet og samtidig tilstrekkelig for å ivareta den forskning og det faglige eller kunstneriske utviklingsarbeidet som utføres.

## Omgjøring av vedtak

Vi viser til NOKUTs vedtak 14.03.2014 der søknad om akkreditering av mastergradsstudium i teknologiledelse – samfunnsfaglig retning ved Høgskolen i Bergen ble avslått. NOKUT mottok et brev 03.04.2014 fra Høgskolen i Bergen der høyskolen anmoder om omgjøring av dette vedtaket.

I brevet opplyser høyskolen om at de har etterfulgt komiteens krav:

[3] The decision is not translated into English, but in the letter informing the applicant of the decision, we write the following: "It is NOKUT's assessment that the conditions in NOKUT's Regulations concerning NOKUT's supervision and control of the quality of Norwegian higher education of 28 february.2013 are not met, and the master degree program in Technology Management – Social Science Track /Teknologiledelse – samfunnsfaglig retning (120 studiepoeng/ECTS ) at Bergen University College is not accredited.

NOKUT has received new information about the programme. It is NOKUT's assessment that the conditions in NOKUT's Regulations concerning NOKUT's supervision and control of the quality of Norwegian higher education of 27.01.2011 now are met, and the master degree program in Innovation and Management – Social Science Track / innovasjon og ledelse – samfunnsfaglig retning at Bergen University College is accredited. The accreditation is valid from the date of the decision.

*«Vedtaket er i tråd med anbefaling fra sakkyndig utvalg. Slik vi leser tilsynsrapporten av mars 2014 hviler avslaget på de fire punktene 7-2 1., 7-2 2., 7-2 3. og 7-3 1. og at sakkyndig utvalg mener alt vil være tilfredsstillende dersom vi endrer navnet på studiet og fjerner ett av læringsutbyttene. (Læringsutbytte K1b som er relatert til teknologiforståelse). På bakgrunn av dette anmoder vi NOKUT om å vurdere saken på nytt idet vi endrer navnet på studiet i tråd med forslaget fra sakkyndig utvalg og fjerner det omstridte læringsutbyttet…*

*… På bakgrunn av disse nye opplysningene i tilleggsevalueringen ønsker vi å imøtekomme de presiseringer som nå er kommet. Vi vil særlig legge vekt på at komiteens siste konklusjon er svært klar og tydelig, slik at navnet nå blir:*

*Master i innovasjon og ledelse*
*MSc in lnnovation and Management*

*Som en oppfølging av dette, vil vi selvfølgelig fjerne læringsutbytte K1b».*

NOKUT har etter forvaltningsloven § 35 mulighet til å etterkomme anmodningen fra høyskolen. Etter en vurdering og på bakgrunn av de nye opplysningene, mener NOKUT at det er hensiktsmessig å omgjøre vedtaket. Vedlagt følger en uttalelse fra de sakkyndige.

NOKUT har etter de nye opplysningene vurdert vilkårene i NOKUTs forskrift om tilsyn med utdanningskvaliteten i høyere utdanning av 28. februar 2013, og har etter dette truffet følgende vedtak:

*Mastergradsstudium i innovasjon og ledelse – samfunnsfaglig retning (120 studiepoeng) ved Høgskolen i Bergen akkrediteres.*

Akkrediteringen er gyldig fra vedtaksdato. NOKUT forutsetter at Høgskolen i Bergen fyller de til enhver tid gjeldende krav for akkreditering. I tillegg forventes at institusjonen vurderer de sakkyndiges merknader og anbefalinger i det videre arbeidet med utvikling av studiet.

For mastergradsstudier som NOKUT akkrediterer, må institusjonen selv søke Kunnskapsdepartementet om rett til å etablere studiet.

# 9 Documentation

Høgskolen i Bergen - søknad om akkreditering av masterstudium i teknologiledelse - samfunnsfaglig retning, 29.08.2013, 13/4094 / 13/611-1

Oppdatert dokumentasjon - Høgskolen i Bergen - søknad om akkreditering av masterstudium i teknologiledelse - samfunnsfaglig retning, 27.11.2013, 13/5826 / 13/611-8

Kommentar til sakkyndig rapport - Høgskolen i Bergen - søknad om akkreditering av masterstudium i teknologiledelse - samfunnsfaglig retning, 22.01.2014, 14/333 / 13/611-10

Anmodning om omgjøring av vedtak - Høgskolen i Bergen - søknad om akkreditering av masterstudium i teknologiledelse - samfunnsfaglig retning, 03.04.2014, 14/2066 / 13/611-14

# 10 Presentation of the Expert Committee

**Professor Mette Præst Knudsen, Syddansk universitet**
Mette Knudsen Præst is Professor at the Department of Marketing & Management and Director of the Centre for Integrative Innovation Management at the University of Southern Denmark. Knudsen has PhD in Economics from Aalborg University in 1999. She teaches and is a researcher within the disciplines of product development, innovation in particular open innovation, collaborative innovation and attitudes to innovation, and sustainability. The Centre for Integrative Innovation Management is an interdisciplinary research unit established by the Faculty of Social Sciences and The Faculty of Engineering. Her experience with the pairing of the technical and the social sciences is relevant for the assessment of the application from Bergen University College. An overview of Knudsen's scientific and professional work can be found at the website of University of Southern Denmark: http://findresearcher.sdu.dk:8080/portal/da/person/mpk

**Førsteamanuensis Tim Torvatn, Norges teknisk- og naturvitenskapelige universitet**
Tim Torvatn is affiliated with the Department of Industrial Economics and Technology Management. He has dr.ing. in Industrial Economics and Technology Management (Productivity in industrial networks - a study of the Purchasing function) from NTNU (formerly NTH) in 1996. Torvatn has also a degree in Master of Business Administration from Queen's University Canada in 1991. He has taught at NTNU since 1995, and has since 2005 been program director at the Institute for Industrial Economics and Technology Management. He has relevant experience leading and developing studies / study programs in the field.