

TIØ5225 Project Management, Specialization course

TIØ5230 Project Management, Specialization Project, Fall 2023

Project Management - specialization

Position and function of the specialization:

The course is an obligatory course in the 3rd semester for students in MSPROMAN who take IØT as their main profile and in the 9th semester for students at MTIØT who takes project management as their main profile.

The learning outcomes for the specialization project are as follows:

Knowledge learnt in this course:

- Detailed knowledge about models and concepts within their chosen theme of project management
- Detailed knowledge about possible applications and solutions to theme-specific challenges within their chosen theme of project management

Competences learnt in this course:

- Dealing with integrated problems in project management on a high level

Other competences learnt in this course:

- The student should learn how to write a scientific report
- The student should learn about, and practice, how to search for relevant literature when dealing with a problem within their field of knowledge
- The student should practice gathering empirical data and analysing such data with a method suitable to the theme chosen

Possible supervisors:

Professor Vedran Zerjav

Professor II Wenche Aarseth

Associate professor Tim Torvatn (co-ordinator)

Other supervisors may be available depending upon project chosen and the total number of supervised projects in adjoining scientific areas.

If you wish to know more about the specialization, please contact the coordinator, Tim Torvatn (tim.torvatn@ntnu.no)

Requirements for being able to chose project management as a main profile:

Students from MTIØT who wish to take project management as their main profile need to have taken at least three of the four obligatory courses of the project management program.

The obligatory courses are:

- TIØ5200 Project Organizations
- TIØ5210 Programme and Portfolio Management
- TBA5200 Project Planning and Analysis
- TPK5100 Project Planning and Control

Students who have spent time abroad need to have taken courses with a similar content, or have at least 30sp of other courses relevant to project management, and accepted as such by the coordinator.

Taking the Specialization means to take both TIØ5230 Project Management Specialization Project and TIØ5225 Project Management Specialization Course. The Specialization course is described below, and is followed by a FAQ regarding the specialization, and then a list of the possible projects offered in TIØ5230 Project Management Specialization Project.

Description of TIØ5225 Project Management Specialization Course

Course contents:

The course is a further specialization within relevant subjects of Project Management and builds on subjects presented in the obligatory courses in the 1st year of the Master Programme in Project Management. The choice of subjects for the seminar may vary from one year to another. Included is also a seminar series on research methods, tailored to what is relevant for the students in their projects and master thesis work.

Learning activities:

The student need to participate in a minimum number of methodology and research seminars, but attendance to all is expected. If there is a re-sit examination, the examination form may be changed from written to oral. Re-scheduled examinations will be given in December or January, depending on the teaching schedule.

Learning outcomes for the course:

The position of the course: The course is restricted to students who have an IØT specialization in their 3rd semester of the international master of project management, and students in their 9th semester of the MTIØT program who have chosen project management as their main profile.

Knowledge learnt in this course:

- The student should acquire specific and detailed knowledge about a small set of advanced themes within project management. Preferably, at least one of these themes should be relevant for the theme chosen for the project work that the student is doing in parallel with this course
- The student should acquire general knowledge about the most important methodological challenges when doing research, as well as a set of ways to handle these challenges.

Competences learnt in this course:

- The student should be proficient in handling methodological questions and applying methodological theory to his or her own research work.

Other competences learnt in this course:

- The student should develop his or her ability to discuss advanced theories within project management with colleagues
- The student should develop his or her ability to present scientific work done by others.

FREQUENTLY ASKED QUESTIONS:

What specialisation do I choose?

Students who take Project Management as their main profile within a 5-year integrated study program **must** take the Specialisation Project which corresponds to their study program.

What about the specialisation Course?

For each Specialisation project there is a corresponding Specialisation Course. You **must** take the Specialisation Course at the same department as your Specialization Project.

Examinations are handled by the department giving the Specialization Project and you may thus have a different examination schedule from your classmates.

How do I choose projects?

Below is a list of the projects offered by the IØT department. Students from the MTIØT program should use the web solution which will be sent to you by the administration, and **choose 5 projects before 4/5-2023**. If there are more people on a project than the capacity of the supervisor, we will discuss solutions at that point in time. This is in order to give everyone a fair chance if some projects become very popular. To ensure flexibility, the students are asked to choose projects from more than one supervisor.

What if I have my own suggestions for a suitable project?

In such cases, the challenge is to find a suitable supervisor. Contact the co-ordinator and present your project to him. He should be able to help you with suggesting a supervisor. In the web choice, please indicate a “self-defined” project and the suggested supervisor at the appropriate place on your list.

Please observe that self-defined projects are a possibility, but not a right. The best possible use of the supervisors is the paramount factor when deciding upon distribution of projects, and this may lead to you not being given your self-defined project.

What about the Master project?

The normal situation is that the Master project is on the same area of expertise as the specialisation project. Thus, we will expect that you have the same supervisor for your Master project as for your specialisation project (or at least one from the same department). If, for some reason, you would like to change supervisor from project to master thesis, be sure to contact co-ordinator as soon as possible.

PROJECT PROPOSALS:

FOR TIØ5230 Project Management Specialization at IØT

PRO 01: Self-Defined project

In this project, you must describe a problem yourself. Send the description along to Tim Torvatn (tim.torvatn@ntnu.no), who will decide if a suitable supervisor is available.

Please observe that Self-Defined projects will be acted upon if a suitable situation can be found with respect to supervision. Thus, you may experience that your suggestion will not be followed.

PRO 02: Involvement of external organizations into product development projects

Any product development project may need to include other organizations into the project. Organizations included could be suppliers, customers, competitors, universities/research institutions, consultants and/or other types of organizations. In this project you look at why, how and/or with what results such organizations are involved, and how their involvement affects the product development project in itself.

Supervisor: Tim Torvatn

Linked to strategic initiative: Could be linked to sustainability, green value creation or health and public sector depending on case chosen.

PRO 03: Cooperation and coordination across organizational boundaries in construction projects

Most construction projects involves multiple organizations, such as architects, consulting engineers, main contractor(s) and different types of sub-contractors. This project looks at how construction project managers handle the involvement of other organizations into their construction project.

Supervisor: Tim Torvatn

Linked to strategic initiative: Leading transitions

PRO 04: Project Management in Non-profit organizations

Many Non-profit organizations are Project-oriented or run large Projects as part of their operations. However, they may not be as proficient in using organizations as for example Professional “For-profit” organizations. If you are interested in looking at non-profit organizations this may be of interest to you. I suggest three areas that you may look at, but other areas can also be handled:

- a) Using Portfolio models to choose the right mix of Projects to run in large non-profit organizations.
- b) Handling non-profit goals when choosing Projects and/or partners for Projects.
- c) How can we do Project management that focuses on the longer-term effects and goals of the Project, rather than "just" doing the Project as efficiently as possible?

Supervisor: Tim Torvatn

Linked to strategic initiative: Could be linked to sustainability or green value creation depending on case chosen.

PRO 05: Project management in a non-profit technical student organisations

Problem statement: NORDLYS NTNU, a new technical student organisations is being established. The organisation aims towards showcasing the strength of NTNU's wide range of disciplines, as well as the Norwegian growing sustainable technology industries, by competing in the international engineering competitions within **solar car racing**, i.e. The Australian World Solar Challenge. Establishing new routines for management and project management in Nordlys is a particular topic such as:

- How should the project management system be designed and implemented?
- How should you train managers and other members in relevant project management tools and methods?
- What are the main benefits and challenges of being a project manager?
- What can be done to prepare employees for their first job as project manager?

NORDLYS will priorities collaborations with students participating in their own organisation, however on this topic they will also consider collaboration with any student.

Supervisor: Associate Professor Ola Edvin Vie

Contacts: NORDLYS NTNU v/ Sivert Sande Kverme or other technical organisations
Linked to strategic initiative: Leading transitions

PRO 06: Project management in the NTNU Campus-project

Problem statement: The board at NTNU has decided to seek funding for moving students and employees from the Dragvoll Campus to an integrated campus around Gløshaugen. Like other big building projects funded by the government it is a complex project with many actors involved. There is on-going research on the development of Campus called Fremtidens Campus (The future Campus), however there are not too many looking at the project from a project management perspective. There are several possible topics to develop in collaboration with the NTNU-campus project, success-criteria, stakeholder management, collaborations between different project organisations etc., it is also possible to look more into the quality evaluation system for big government investments.

This project is more suitable for students with Norwegian language skills, as all documents are in Norwegian.

Supervisor: Associate Professor Ola Edvin Vie

Contacts: NTNU-Campus prosjektet v/ Kjersti Bjørkeng Størdal, Statsbygg

Linked to strategic initiative: Leading transitions and Health and Public Sector. Could also be linked to sustainability and/or green value creation, depending on angle of case chosen.

PRO 07: VM2025 Trondheim – the world's most sustainable sport event project in 2025

Problem statement: October 3rd, 2020, it was announced that Trondheim Norway will host the 2025 FIS Nordic World Ski Championships (the project). The ambition is to be no less than **the world's most sustainable sports event project in 2025**. Sustainability is going to be at the heart of everything the project does. Trondheim municipality has collaborated in sustainability research in previous sports event projects, and is now interested in research on the following topics/ problem statements in VM2025:

How to implement technology in the concept, planning and early phase in sports event projects? particularly related to UN sustainable goal 3 – sports technology and health technology.

Supervisor: Professor Wenche Aarseth

Linked to strategic initiative: Sustainability, Green value creation and health and public sector.

PRO 08: VM2025 Trondheim – the world's most sustainable sport event project in 2025

Problem statement: October 3rd, 2020, it was announced that Trondheim Norway will host the 2025 FIS Nordic World Ski Championships (the project). The ambition is to be no less than **the world's most sustainable sports event project in 2025**. Sustainability is going to be at the heart of everything the project does. Trondheim municipality has collaborated in sustainability research in previous sports event projects, and is now interested in research on the following topics/ problem statements in VM2025:

How to better transfer knowledge between sports event projects?

Supervisor: Professor Wenche Aarseth

Linked to strategic initiative: Sustainability, Green value creation and health and public sector.

PRO 09: VM2025 Trondheim – the world's most sustainable sport event project in 2025

Problem statement: October 3rd, 2020, it was announced that Trondheim Norway will host the 2025 FIS Nordic World Ski Championships (the project). The ambition is to be no less than **the world's most sustainable sports event project in 2025**. Sustainability is going to be at the heart of everything the project does. Trondheim municipality has collaborated in sustainability research in previous sports event projects, and is now interested in research on the following topics/ problem statements in VM2025:

How can mobility-as-a-service contribute to more sustainable sports event projects?

Supervisor: Professor Wenche Aarseth

Linked to strategic initiative: Sustainability, Green value creation and health and public sector.

PRO 10: VM2025 Trondheim – the world's most sustainable sport event project in 2025

Problem statement: October 3rd, 2020, it was announced that Trondheim Norway will host the 2025 FIS Nordic World Ski Championships (the project). The ambition is to be no less than **the world's most sustainable sports event project in 2025**. Sustainability is going to be at the heart of everything the project does. Trondheim municipality has collaborated in sustainability research in previous sports event projects, and is now interested in research on the following topics/ problem statements in VM2025:

How can innovation contribute to sustainability in sports event projects?

Supervisor: Professor Wenche Aarseth

Linked to strategic initiative: Sustainability, Green value creation and health and public sector.

PRO 11: 25 How do industrial actors encourage the sharing of contextualized knowledge? Case company: Aker BP, oil and energy sector.

Problem statement: The starting point of this project is the lack of implantation of developed technologies in the front-end of projects. Thinkers such as Grimm (2008) point to how an understanding of the larger context we operate in is taught to us from our surroundings. For instance, the Norwegian Petroleum Safety Authority states that a suboptimal understating of the environment around petroleum extraction contributes to the making of mistakes. Those working with early-phase project development must have a deep comprehension of the context the technology will be utilized, factors that underpin quality decision making (such as choosing the right business case and optimizing project portfolios) at the planning phase as well as from where and whom they can learn or gather such knowledge from.

In this project you will investigate the importance (or lack of importance) of and sharing of contextualized knowledge in the front-end of projects in the upstream oil and gas industry as a contribution to business transformation. The case company is Aker BP.

Contact Aker BP: Halvard Benjaminsen

Supervisor: Professor Wenche Aarseth

Linked to strategic initiative: Leading transitions.

PRO 12: Strategic Portfolio Management in Trondheim Municipality

Problem statement: In 2018, The Norwegian University of Science and Technology (NTNU) and Trondheim municipality entered into a partnership agreement to jointly develop a

University City. A national pilot based on five thematic focus areas; Education and Early development, Health and Welfare, Urban development, Innovation and Smart City. One of the important focal areas for Trondheim Kommune is to develop a robust capability framework for the management of portfolio of their projects including the strategic planning, selection, leadership and control of the execution and closure. There are a number of possible topics related to strategic management of project portfolios that will be discussed and defined and refined working with our partners in Trondheim Kommune. It could for example involve value and benefit management, stakeholder management, complexity management and performance tracking.

I would welcome up to 4 projects under this theme.

Supervisor: Professor Vedran Zerjav

Linked to strategic initiative : Leading Transitions

PRO 13: Programme Management of Infrastructure and City Development Projects

Problem statement: Governments and private owners around world are developing, planning and delivering infrastructure and city development programmes with different purposes. The main features of such initiatives is that they are typically of very large scales (often \$1Bn+) and comprise a number of interdependent projects which together lead to a high-level policy goal (such as reducing carbon emissions, achieving innovation, etc.) and are very often in the public coverage which makes them a good object of analysis. This topic is based on the student selecting a programme of their choice (in their home country or elsewhere) and then developing a study based on publicly available material (or empirical work) on the programme. Topics can include leadership, stakeholder issues, performance issues, financing and involvement with local communities. Some example programmes would include the UK High Speed 2, Crossrail (now known as The Elizabeth Line), Berlin Brandenburg Airport and Stuttgart 21, Olympics Projects around the world, Follobanen in Norway and many others. This list contains only some of the projects with relatively recent media exposure, but students are invited to choose a project in their home country as the setting. A number of topics can be possible, based on the specific case which will determine the conceptual and methodological focus.

I would welcome up to 4 projects under this theme.

Supervisor: Professor Vedran Zerjav

Linked to Strategic initiative: Leading Transitions, Health and Public Sector

PRO 14: Analysis of Major Projects and Programmes Portfolio of the Government of Norway

Problem statement: The Norwegian Government is implementing a programmes and projects of different types, scales and costs to implement their policy goals and deliver on their electoral mandates. The portfolio of projects and programmes is typically large and involves very complex and large investments of different levels of risk and interdependency. This project topic involves working with our partners from Concept Research Programme who developed and maintain a comprehensive database with detailed information about the performance of a large number of government projects and programmes. A variety of topics are possible and the same is the case for the methodological approach, although it is expected that there will be a focus on quantitative (mixed methods) analysis given the size of the sample of projects (N=80).

I would welcome up to 4 projects under this theme.

Supervisor: Professor Vedran Zerjav

Linked to Strategic initiative: Leading Transitions and Health and Public Sector

PRO 15: Project-based orchestration of supplier networks and development

This project is within the field of orchestration of supplier networks and development. It will challenge you to develop an understanding of factors that can promote or hinder orchestration of supplier networks and development in project-based organizations. You can choose between two different contexts for such an analysis. One is related to large construction projects such as the campus development project at NTNU or the Powerhouse project at Brattørkaia in Trondheim. The other is the context of a large event, such as the student cultural festival UKA or the upcoming World Championship in Nordic Disciplines in Trondheim 2025.

Project-based organizations are prevalent within several key sectors in Norway, and their handling of upstream activities is often key to their ability to operate. In typical large projects, up to 60-80% of the value creation is done through the acquisition of goods and services, and often several key purchases are new to the project and also to the mother organizations in charge of the project. Thus, the orchestration of supplier networks and development is often central to both the economic and technical success of the project.

Orchestration of supplier networks is often related to the complicated communication and organization of large projects, and the project's ability to engage suppliers in a development process is central to the ability to appropriate new technical solutions.

Although we have suggested two specific contexts for this work (large construction projects or large events), the knowledge acquired through working on this challenge is not context-specific, but instead useful for all kinds of project-based activities.

Practical information

We would like to invite student groups of 2-3 persons to this project, and are likely able to handle 2-3 such groups. Since the project work in the Fall semester will normally be a literature study, possibly with some exploratory case work, we would also invite the students to proceed in the Spring semester with a master thesis within the field, where an important task would be to test the framework developed in the project up against one or more relevant cases.

Supervisors: Elsebeth Holmen (elsebeth.holmen@ntnu.no), Victor Eriksson (victor.eriksson@ntnu.no), Ann-Charlott Pedersen (ann.pedersen@ntnu.no), Tim Torvatn (tim.torvatn@ntnu.no)

Linked to strategic initiatives: Leading transitions, Technology-based organizational design and Health and Public Sector.