

Description of the PhD Programme in Chemical Engineering

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Introduction: The Department of Chemical Engineering offers a Ph.d.-programme which gives a higher education within the field of Chemical Engineering.
Learning objectives: The PHD program in Chemical Engineering will provide training in how to generate and publish new knowledge in the field, as well as help strengthen the candidates' academic horizon in chemical engineering.
Subject areas: The Ph.d.-program in Chemical Engineering are connected to the Departments research groups: <ul style="list-style-type: none">- Catalysis- Colloid- and Polymerchemistry- Process- Systems Engineering- Environmental Engineering and Reactor Technology- Biorafinery and Fibre Technology
Admission , see. § 5 and 7.3 in the regulations for PhD degree at NTNU.
For admission a master's degree in technology from the Department of Chemical Engineering or an equivalent degree at master level is required. If the candidate has other qualifications than a master's degree from the department, the Faculty get information from the research group and the department's management, in order to decide if the background qualifies for admission or not, and whether the applicant may have to take extra qualification courses.
Funding : see § 5.2
A source of finance must be documented before admission will be granted.
Active participation in research, nationally and internationally , see § 4 and § 5.2
All candidates in the PhD programme have the possibility to get international experience through exchange with a collaborating institution.
Scientific and academic dissemination , see § 2, § 4 and § 5.2
The research is to be presented through publications in scientific journals with a referee system and presentations at both national and international meetings.

Academic training, see § 7.3				
The organized academic training in the PhD education programme is to provide scientific and methodical training, which is necessary for the thesis work.				
For students without a master's degree from the department, it is recommended to take courses from the list below.				
Recommended Courses:				
TKP4110	Kjemisk reaksjonsteknikk <i>Chemical Reaction Engineering</i>	H	7,5 sp	7,5 sp
TKP4105	Separasjonsteknikk <i>Separation Technology</i>	H	7,5 sp	7,5 sp
TKP4165	Prosessutforming <i>Process Design</i>	V	7,5 sp	7,5 sp

Ph.d.-courses at the Department of Chemical Engineering:

Course ID	Course	Semester	Credits
KP8100	Videregående prosess-simulering <i>Advanced Process Simulation</i>	H10	7,5
KP8102	Trekjemi i treforedlingsprosessene <i>Wood Chemistry in Pulping and Paper Making</i>	H11	9,0
KP8105	Matematisk modellbygging og modelltippassing <i>Mathematical Modelling and Model Fitting</i>	H11	7,5
KP8106	Gassrensing med kjemiske absorbenter <i>Gas Cleaning with Chemical Solvents</i>	H11	9,0
KP8107	Videregående kurs i membranprosesser/væskesystemer <i>Advanced Course in Membrane Separation Processes/Liquid Processes</i>	V11	9,0
KP8108	Videregående termodynamikk: Anvendelser innen fase- og reaksjonslikevekter <i>Advanced Thermodynamics : With applications to Phase and Reaction Equilibria</i>	H11	9,0
KP8110	Gassrensing med membraner, videregående <i>Membrane Gas Purification, advanced course</i>	V12	9,0
KP8115	Videregående prosessregulering <i>Advanced Process Control</i>	H10	7,5
KP8117	Papirfysikk og papirkjemi <i>Paper Physics and Paper Chemistry</i>	V12	9,0
KP8128	Videregående reaktormodellering <i>Advanced Reactor Modelling</i>	V11	12,5
KP8129	Kolloidkjemi for prosessindustrien <i>Colloid Chemistry for Process Industry</i>	V12	7,5
KP8130	Systembiologi, modellering og analyse <i>Systembiology, Modelling and Analysis</i>	H10	7,5
KP8131	Krystallisasjon og partikkeldesign <i>Crystallization and Particle Design</i>	H11/V12	7.5
KP8132	Anvendt heterogen katalyse <i>Applied Heterogeneous Catalysis</i>	H11	7.5

KP8133	Karakterisering av heterogene katalysatorer <i>Characterization of Heterogeneous Catalysts</i>	H10	7.5
KP8134	Surfaktanter og polymerer i vandig løsning <i>Surfactants and Polymers in Aqueous Solutions</i>	H10	7.5
KP8135	Videregående kurs i overflate, kolloid og polymerkjemi <i>Surface, Colloid and Polymer Chemistry Special Topics</i>	H10	7.5
KP8136	Modellering av katalytiske reaksjoner <i>Modelling of Catalytic Reactions</i>	V11	7.5
KP8137	Framstilling av katalytiske materialer <i>Design and Preparation of Catalytic Materials</i>	V11	7.5

Ph.d.-courses/Mastercourses at the Department of Chemical Engineering:

Course ID	Course	Semester	Credits
KP8901	Kjemisk prosess-system teknikk <i>Chemical Process System Engineering</i>	V11	7,5
KP8902	Reaktorteknologi <i>Reactor Technology</i>	V11	7,5
KP8903	Reaksjonskinetikk og katalyse <i>Reaction Kinetics and Catalysis</i>	H10	7,5
KP8904	Transportprosesser <i>Transport Phenomena</i>	H10	7,5

V = Spring

H = Autumn

Requirements for thesis, see § 7.4

The thesis is to be an independent scientific work at an international level.

The thesis may be in the form of a monograph or consist of a collection of scientific papers.