



National Defence University

Study Guide 2019

Doctor of Military Sciences Degree

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Maanpuolustuskorkeakoulu

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National Defence University

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To the Reader

This Study Guide has been prepared to provide an overview of the reformed structure of the Doctor of Military Sciences degree and to be used by degree students as a basis for planning the studies. The guide has been drawn up on the basis of the new curriculum accepted in June 2019 and it contains basic information and describes the study contents of the Doctor of Military Sciences degree.

All students starting their studies after the adoption of the 2019 curriculum must follow the new curriculum in their studies. Previous students are also recommended to transition to the new curriculum.

Students who have started their studies prior to the acceptance of the new curriculum (in total 70 credits) in June 2019 have the option to complete their doctoral studies following the previous curriculum, which was accepted in December 2015, until the end of 2023.

If a student chooses to transition from the 2015 curriculum to the new curriculum, they are responsible together with the thesis supervisor, the relevant discipline and the Department of Academic Affairs for ensuring that the courses completed in accordance with the previous curriculum can be approved according to the 2019 curriculum. In addition, the student is required together with their thesis supervisor to draft a personal study plan in accordance with the new curriculum and to submit this for approval by the director of research.

The comparability of previous studies and approval of courses as part of the studies in accordance with the new curriculum will be assessed and decided on a case-by-case basis for each completed course. The aim is to apply flexibility in the approval of previously completed studies, where possible. The main approval criterion is how well the previous studies comply with the learning outcomes set out for the course in the new curriculum. This means that not all previously completed studies will necessarily be approved as part of the new personal study plan. Furthermore, transitioning to the new curriculum may require completing some supplementary studies.

The introductory chapter of this Study Guide provides basic information about the Doctor of Military Sciences degree. The chapter outlines the fundamental task of the degree programme, as well as the competencies the programme provides. In addition, the chapter also describes the degree structure and objectives, the curriculum model and implementation of the studies. Chapters 1 and 2 specify the contents of the degree studies. Chapter 3 provides basic information about the contents of possible supplementary studies. Appendix 1 specifies the common credit allocation principles for different learning activities in the doctoral programme.

Appendix 2 provides basic instructions on how to draft a personal study plan (PSP). Following the adoption of the new curriculum, all PSPs, including those drafted according to the previous curriculum, must be re-drafted or updated using the tem-

plate provided in Appendix 2. In addition to the planning of one's personal studies, the template in Appendix 2 is also used for the approval and reporting of completed studies, as well as for the monitoring of the progress of studies.

This Study Guide and its chapters provide the basic information needed to prepare a personal study plan. The aim is to plan the studies so that the study components support the student's thesis process and the development of the student's expertise, as well as produce the competencies set out for the degree.

To ensure smooth progress in studies, students are recommended to read the Study Guide carefully to gain an overview of the degree structure and to be able to plan their studies effectively. The thesis supervisor also plays a key role in the planning and implementation of the studies. The student and the supervisor should together plan the degree studies so that they provide the best possible support for building the student's expertise.

Guidance and further information about planning the studies and about the degree structure are available from the supervising professor, the relevant discipline at the National Defence University and the education planner and course secretary at the Department of Academic Affairs.

Good luck with your studies!

Study Guide Authors

DOCTOR OF MILITARY SCIENCES DEGREE

This chapter provides basic information about the Doctor of Military Sciences degree. The chapter outlines the fundamental task of the degree programme, expected competencies, the curriculum model, and the extent of the degree and duration of studies. In addition, the chapter presents the learning outcomes set out for the degree and the degree structure.

A. Fundamental task of the degree programme

The Doctor of Military Sciences degree is based on the Act on the National Defence University (laki Maanpuolustuskorkeakoulusta 1121/2008) and is deemed comparable with doctoral degrees from other universities pursuant to the Decree on higher education degree structure (asetus korkeakoulututkintojen järjestelmästä 426/2005). According to the Act on the National Defence University, the task of the National Defence University (NDU) is to advance research in military sciences and to provide education in military sciences that is based on research and best practice. In carrying out its tasks, the National Defence University interacts with the rest of society and promotes the social effectiveness of research results.

The purpose of the Doctor of Military Sciences degree programme is to produce

1. expertise that benefits the Defence Administration, the Defence Forces, the Border Guard and society at large,
2. competencies required in post-graduation positions and
3. knowledge that is based on defence research.

Doctors in military sciences are especially produced for the needs of the Finnish Defence Forces and the Border Guard but also to serve the rest of the Finnish society¹. The fundamental objective of the Doctor of Military Sciences degree programme is to conduct research and produce new scientific knowledge for the development of defence capabilities and military sciences, as well as to support teaching and decision-making. The basic task of the degree programme is to produce doctors in military sciences with appropriate knowledge and skills in the field of military sciences, as well as with the required capabilities to carry out independent research work or operate in senior-level research positions.

The Doctor of Military Sciences degree is part of the academic career path. The competencies and experience provided by the degree give the graduate the required capabilities to lead research projects and teams and to advance in their career to positions such as professor or military professor.

¹ In the case of foreign students, this objective is applied on a case-by-case basis.

B. Competencies provided by the degree

According to the Government Decree on the National Defence University (valtionneuvoston asetus Maanpuolustuskorkeakoulusta 1124/2008), the objective of the postgraduate degree programme in military sciences is that the student:

1. becomes well-versed in their own field of research and its social significance and gains knowledge and skills needed to apply scientific research methods independently and critically and to produce new scientific knowledge within their field of research;
2. becomes conversant with the development, basic problems and research methods of their own field of research; and
3. gains such knowledge of the general theory of science and of other disciplines relating to their own field of research that enables them to follow developments in those fields.

In addition to the objectives specified in the Decree, the student is required to gain such knowledge of the general theory of science and of other disciplines relating to their own field of research that enables them to participate in demanding research projects.

Section 15 of the Government Decree on the National Defence University provides, pursuant to the Government Decree on University Degrees (794/2004), the following regarding the components of the Doctor of Military Sciences degree:

To be awarded the Doctor of Military Sciences degree, the postgraduate student must

1. complete the required postgraduate studies;
2. demonstrate independent and critical thinking in the field of research; and
3. write a doctoral dissertation and defend it in public.

Pursuant to section 1 of the Government Decree on the National Framework for Qualifications and Other Competence Modules (120/2017) and the Annex to the Decree, the Doctor of Military Sciences degree is a Level 8 postgraduate degree.

The objective of the Doctor of Military Sciences degree programme is to produce profound field-specific and interdisciplinary research and expertise. Graduates are capable of working independently in the most demanding expert tasks of the field and to be able to engage in international cooperation accordingly. Another aim of the degree programme is to strengthen the doctoral student's research skills and expertise and their ability to self-management and lifelong learning. The objective is also to deepen the student's critical thinking and to enhance their argumentation and problem-solving skills.

Another key objective is to further the student's integration within the national and international scientific community, and thus to also improve the student's commu-

nication, leadership and negotiation skills. The student is also expected to achieve the verbal and written communication skills required in demanding interdisciplinary research and expert positions.

Graduates will also have a profound knowledge of the nature of military sciences and of the main theories, concepts, research methods and disciplines in this area. They will have the skills to produce new knowledge in the area of military sciences that benefits the Defence Forces and the rest of the society. They will also have the ability to understand the theoretical and practical relations relating to military science phenomena, and they will know how to apply their knowledge in practice.

Graduates will also have excellent capabilities for independently working and engaging in cooperation in demanding positions requiring competence in military sciences. Graduates will also be capable of developing and applying new ideas, theories, approaches and processes even in most demanding operating environments.

The competencies provided by the degree programme can be divided into eight categories:

1. research capabilities
2. expertise
3. capabilities to operate internationally
4. research skills and expertise
5. interaction skills
6. leadership skills
7. communication skills
8. profound knowledge in the field of military sciences.

In addition, graduates must have a sufficient level of understanding of the Finnish Defence Forces, the Finnish defence system and defence principles and warfare.²

C. Curriculum model

The curriculum for the Doctor of Military Sciences degree is competency- and course-based. The curriculum is designed so that the degree and study contents comply with the competency requirements set out for the degree and so that the studies build the student's competencies in all specified competency areas.

When drafting a personal study plan or assessing the achievement of the learning outcomes, it is essential to remember that the competencies produced by the degree programme do not arise exclusively from the curriculum and course work but also from the combined effect of interdisciplinary networking and participating in various social events and other activities that support competence development.

² In the case of foreign students, the competency objectives and degree contents are determined for each case specifically taking account, for example, the defence forces and military science traditions in the student's country of origin.

The competency-based curriculum is composed of degree components, study modules and courses. The degree structure is common for all students, but the degree contents vary between the disciplines. The studies are divided into general studies and discipline specific studies. In addition, the studies may also include supplementary studies, which are not included in the degree but are nevertheless recorded in the transcript of study records.

The dissertation included the doctoral degree in military sciences can be completed in the following disciplines:

1. leadership
2. operational art and tactics
3. military history
4. military economics
5. military technology
6. military pedagogy
7. military sociology
8. strategy.

It is also possible to complete a dissertation in other separately agreed fields.

The course-based nature of the curriculum means that the general studies, discipline specific studies and supplementary studies are listed in this Study Guide by discipline, divided into study modules and individual courses. The detailed study contents are specified in course descriptions, which outline the learning outcomes, study contents, study methods, assessment criteria, and required additional details.

The chosen curriculum model (i.e. the competency- and course-based curriculum) enables individual building of the student's expertise and competencies. The model also enables flexible planning of the components of the personal study plan on the basis of the discipline and individual needs of the student. Furthermore, the model enables individual assessment of the achievement of the competency requirements set out for the degree.

The underlying purpose behind the structure and components of the curriculum, and specifically the detailed course descriptions, is to ensure transparency of the studies and equal and fair treatment of students. The competency- and course-based curriculum also enables taking the student's previous studies better into account when planning the study contents, and thus ensuring that the degree genuinely enhances the student's expertise.

D. Extent of the degree and duration of studies

The extent of the scientific studies contained in the degree is 50 credits³. In addition to this, the degree also includes a dissertation that must be publicly defended. The extent of the dissertation is not specified.

Full-time students can complete the Doctor of Military Sciences degree in four years. The right to study starts once the Rector of the National Defence University has accepted the applicant as a student in the degree programme in military sciences and the applicant has accepted the offered student place.

E. Degree structure and study objectives

The Doctor of Military Sciences degree is composed of three main components:

1. general studies (minimum 10 credits)
2. discipline specific studies (minimum 40 credits)
3. a dissertation.

If the student's previous degrees are from a field other than military sciences, or if the student does not have the required capabilities to start their discipline specific studies, the student will be instructed to complete at most 15 ECTS of supplementary studies outside the degree structure.

The objectives and the responsible parties for each degree component are as follows:

General studies

The objective of the general studies is for the student to gain such knowledge of the general theory of science and military sciences that enables them to follow developments in those fields and participate in military science discussion. Furthermore, the aim is to build the general competencies required from doctoral students in postgraduate working life.

The different disciplines at the National Defence University together with the subject departments are responsible for ensuring that doctoral students achieve the objectives set out for the general studies, as well as for the contents and development of the general studies.

Discipline specific studies

The objective of the discipline specific studies is for the student to become well-

³ ECTS (European Credit Transfer and Accumulation System). On average, one ECTS credit equals around 27 hours of work.

versed in their own field of research and its social significance and to gain the knowledge and skills needed to apply scientific research methods independently and critically and to produce new scientific knowledge within their field of research. In addition, the aim is for the student to become conversant with the development, basic problems and research methods of their own field of research.

The thesis supervisor⁴ is responsible for ensuring that the student achieves the objectives set out for the discipline specific studies, as well as for the contents and development of the discipline specific studies.

Dissertation

The dissertation refers to the written thesis work required for the completion of a doctoral degree. It may be either a monograph or compilation thesis. A compilation thesis is composed of a number of scientific articles or manuscripts accepted for publication and a summary that presents the research objectives, methods and results, or it can be a corresponding work that fulfils the scientific criteria for dissertations. The articles may also include co-publications, provided that the doctoral student can demonstrate their independent contribution towards the article.

The thesis supervisor and a professor in the relevant discipline together with the Research Council of the National Defence University are responsible for ensuring that the thesis meets the requirements for dissertations.

Supplementary studies

The doctoral programme in military sciences is primarily designed for persons who have completed the Master of Military Sciences degree or the General Staff Officer's degree. If, for some justified reason, a person with some other higher education degree is accepted as a doctoral student, or if the student otherwise does not have the required capabilities or skills to achieve the learning outcomes specified for the course, the student can be instructed to complete at most 15 credits of supplementary studies. These studies do not, however, contribute towards the Doctor of Military Sciences degree. The decision on the necessity and contents of supplementary studies will be made by the relevant discipline together with the Postgraduate Department and a professor of the discipline in which the thesis is written.

The need for supplementary studies is determined on the basis of the objectives set out for the Doctor of Military Sciences degree. Supplementary studies are composed of two study modules:

⁴ For the purpose of this guide, 'thesis supervisor' refers to the professor, military professor, assistant professor, assistant military professor or another person appointed by the Research Council to be responsible for the supervision of the thesis process. Hereinafter in this Study Guide, this person is referred to as 'the thesis supervisor'.

1. Knowledge of national defence and Finnish defence principles⁵ (max 9 credits) and
2. Knowledge of one's own discipline and related expertise (max 15 credits).

The key output of the Doctor of Military Sciences degree is the student's doctoral thesis. The contents of the studies should be planned so that they support the writing of the thesis. The student drafts together with a professor in their field of research and the thesis supervisor a personal study plan (PSP) on the basis of their personal learning needs and the curriculum.

When preparing a PSP, it should be kept in mind that each course or learning activity can be included in the studies only once. For example, participating in a single conference, seminar or some other similar learning activity cannot be taken into account in two different courses.

In addition, the following should also be taken into account when preparing a PSP:

- in the case of a compilation thesis, articles submitted to obtain credits may not be included in the doctoral thesis;
- the maximum number of credits for participating in conferences is 6 ECTS credits to ensure that conference attendance does not account for a disproportionate share of the total credits;
- the maximum number of credits for teaching and thesis supervision is 4 ECTS credits to ensure that teaching and thesis supervision do not account for a disproportionate share of the total credits.

Chapters 1 and 2 present the detailed contents of the studies included in the Doctor of Military Sciences degree and Chapter 3 describes the contents of the supplementary studies.

F. Allocation of credits and recognition of prior learning

The basis of measurement of the workload involved in studies is one ECTS (European Credit Transfer and Accumulation System) credit. Learning activities awarding less than one (1) ECTS credit do not contribute towards the degree. On average, one ECTS credit equals around 27 hours of work.

The principles behind the allocation of credits in the case of the most common learning activities are presented in Appendix 1. The same credit allocation principles must be applied to all courses included in the doctoral degree in order to keep the workload reasonable and to ensure equal and fair treatment of students.

If a learning activity is assessed to significantly exceed the estimated average workload due to the mental burden involved, challenging nature of the activity or some

⁵ In the case of foreign students, this objective is applied on a case-by-case basis.

other justified reason, the student may be awarded more credits for the activity than specified in Appendix 1. If an activity is deemed challenging due to, for example, the level of difficulty of the literature or mathematical equations or complicated or complex theories involved, the credit allocation guidelines may be interpreted more loosely (e.g. fewer pages may be required to obtain the credits). However, where the credit allocation deviates from the common principles, it must be ensured that the credits allocated are consistent and comparable with the principles specified in Appendix 1.

The responsible teacher (professor, adjunct professor, etc.) must assess the necessity to deviate from the common credit allocation principles together with the student on a case-by-case basis and decide the number of credits awarded for the activity on the basis of this assessment. To ensure transparency and equal treatment of students, if the credit allocation for a learning activity deviates from the common principles, a brief written report must be prepared on the learning activity, indicating the credits awarded and the grounds for deviating from the common principles. This report must also be appended to the written acceptance notification concerning the learning activity.

The doctoral student is responsible for the notification of completed studies to the course secretary at the National Defence University's Department of Academic Affairs, as well as for checking that the credits are accurately entered in their study records. Students are recommended to check the accuracy and relevance of the credits and details in their study records once every academic year and to request their data to be updated, if necessary. Students are also responsible for checking that all completed courses are entered accurately into the study record before submitting their thesis manuscript for preliminary examination.

The course secretary of the Department of Academic Affairs will enter the accepted studies into the study record only once they have received a written confirmation of the acceptance from the responsible teacher or assessor of the learning activity by mail or email.

The student must also keep their personal study plan drafted in accordance with Appendix 2 fully updated. The student is required to fill in and update the plan and the required details as their studies progress. It is recommended to record all completed studies in the PSP immediately after the learning activities are accepted. The student must present a revised and updated PSP to their thesis supervisor for approval at least once a year at the start of the new academic year. The tables on the front page indicating the accumulated ECTS credits must also be updated at least once a year at the start of the new academic year.

Degree students also have an opportunity to complete some of their studies in another university or higher education institution, provided that the National Defence

University does not offer corresponding studies (Flexible Study Rights)⁶. However, students must choose at least 50 per cent of their courses from the NDU offering. In the case of doctoral degree students in military sciences, the decision on the inclusion of studies in another university or higher education institution as part of the degree will be made by the party responsible for the relevant course.

Students also have the opportunity to apply for recognition of their prior learning as part of the Doctor of Military Sciences degree in accordance with a separate process. The Regulation of the National Defence University on the Identification and Recognition of Prior Learning is applied in the process of application and approval of prior learning as part of the degree. In the case of studies in accordance with the curriculum for the Doctor of Military Sciences degree, prior learning may account for at most 15 credits.

At the National Defence University, the following prior learning is eligible for recognition:

1. studies completed at another higher education institution
2. studies completed at the National Defence University and
3. prior learning acquired through some other means than formal education.

The recognition can take place in two ways:

1. studies included in the degree according to the curriculum can be replaced with corresponding studies completed elsewhere, or
2. studies completed elsewhere can be included in the degree (such as studies that are not included as part of another degree or studies completed at a foreign university). Studies included in the degree may also concern supplementary studies completed in addition to the compulsory courses included in the degree.

Recognition of prior learning can be applied for by using the template 'Identification and recognition of prior learning' available from the Department of Academic Affairs. The template must be accompanied by a written description of the prior learning and a statement of the grounds for the application for recognition, a copy of the relevant degree certificate and/or transcript of study records, as well as a detailed description of the extent, contents and level of difficulty of the studies.

The application and the required appendices must be submitted to the Department of Academic Affairs, where the application is reviewed and will be forwarded to the party responsible for the degree programme for decision.

⁶ Flexible Study Service Joopas provides more information about The Flexible Study Rights Agreement (JOO) between Finnish universities (www.joopas.fi).

1. GENERAL STUDIES

The minimum extent of the general studies degree component is 10 ECTS credits. It consists of two study modules:

- Military scientific thinking (3 cr)
- General research capabilities (min 7 cr).

1.1 Military scientific thinking

The scope of the *Military scientific thinking* study module is 3 credits and it contains two compulsory courses.

1.1.1 Current state of the different disciplines in military sciences, 2 cr

Course code: STY11

Responsibility: The relevant discipline at the NDU together with the subject departments.

Target group: The course is part of the general studies and is compulsory for all doctoral students.

Learning outcomes: After completing the course, the student:

- will understand the fundamental themes, current situation and developments in the different disciplines in military sciences and will know how to assess their significance;
- will have sufficient knowledge of military sciences that will enable them to assess developments in the field and follow international discussion on the topic;
- will be capable of participating in military science discussion both verbally and in writing and will be able to present reasoned arguments to support their views from the military science perspective.

Implementation: The course consists of two parts. The first part is composed of studies requiring independent work and the second part requires participating in a military science conference, seminar, course, or some other learning activity the contents of which comply with the learning outcomes and which advance the student's cross-disciplinary knowledge of military sciences.

The studies requiring independent work (1 cr) include reading and analysing a broad range of literary materials covering military science. The materials must be agreed upon with the relevant discipline and a professor in the student's field of research.

At the end of the first part, the student drafts a referenced written report (approx. 8

pages) on the basis of the independently studied materials. In the report, the student analyses military sciences and basics thereof from the perspective of national and international developments.

The relevant discipline together with the subject departments specifies the compulsory self-study materials that are common to all students. In addition to the compulsory materials, the student is also required to study materials that must be separately agreed upon with the thesis supervisor. The appropriateness and relevance of the compulsory materials are reviewed once a year. The self-study materials must also contain articles or literature in foreign languages.

The second part of the course (1 cr) can be completed by participating in a national or international conference, seminar, workshop or course in the field of military sciences.

At the end of the second part, the student writes a report (approx. 8 pages) in which they analyse military sciences and their scientific bases and reflect upon their own field of research in relation to other military science disciplines on the basis of the experience gained and observations made when participating in conferences, seminars and other learning activities.

Detailed contents of the course are determined according to the postgraduate student's personal needs and are planned together with the relevant discipline and a professor in the student's field of research. The course contents and implementation must be agreed upon with the relevant discipline and the thesis supervisor in advance.

Assessment: Requirements for passing the course:

- Reading the self-study materials and writing a personal report (Part 1).
- Active participation in one freely chosen military science conference, seminar, workshop, or other agreed learning activity and writing a report on the basis of the event chosen (Part 2).

Passing requires that the assessor deems that that the student has completed the tasks in a manner that meets the learning outcomes.

Grading: Pass/Fail

Additional information: The activities requiring independent work (Part 1) must be completed before Part 2 to ensure a sufficiently profound military science knowledge before entering Part 2.

Part 2 cannot be replaced with another learning activity.

A conference, seminar or learning activity intended to be included in another course in the curriculum cannot be also accepted for Part 2. Participating in a single conference, seminar or some other learning activity may only be included in the studies once.

This course can only be included in a degree once.

1.1.2 Science and research in society and in the Defence Forces, 1 cr

Course code: STY12

Responsibility: The relevant discipline at the NDU together with the subject departments.

Target group: The course is part of the general studies and is compulsory for all doctoral students.

Learning outcomes: After completing the course, the student:

- will understand the societal connections of military sciences and the societal role of science in general;
- will have a general understanding of the research carried out at the Defence Forces;
- will know how military science research links to operations of the Defence Forces and Defence Administration and development thereof.

Implementation: The course is implemented according to a separately specified programme. The course is mainly implemented in lectures and seminars but it may also include some self-study assignments, such as review of literature or excursions to research institutes of the Defence Forces.

Assessment: Requirements for passing the course:

- Active participation in the events specified in the separately determined course programme.
- Writing an essay after the course.

At the end of the course, the student writes an essay (approx. 8 pages) in which they analyse the significance of their own thesis work as part of defence research and assess the usefulness of their thesis and expertise from the perspective of the operations and development of the Defence Forces.

Passing requires that the assessor deems that that the student has completed the tasks in a manner that meets the learning outcomes.

Grading: Pass/Fail

Additional information: Passing requires physical attendance.

The aim is to organise the course every other year in connection with a doctoral seminar in military sciences.

The course can be included in a degree only once.

1.2 General research capabilities

The minimum extent of the *General research capabilities* module is 7 ECTS credits. The module consists of eight courses, of which three are compulsory for all students (total 3 credits).

Students whose PSP does not include any courses for advancing their international cooperation skills or courses in the philosophy of science as part of their discipline specific studies, are also required to take the courses *International cooperation* (2 cr) and *Philosophy of science, Part 1* (1 cr) included in this study module.

Compulsory courses:

1. Research ethics (1 cr)
2. Designing and leading research projects (1 cr)
3. Scientific writing, publishing and communication, Part 1 (1 cr)

Conditionally compulsory courses include: *International cooperation* (2 cr) and *Philosophy of science, Part 1* (1 cr).

1.2.1 Orientation to doctoral studies, 1 cr

Course code: STY21

Responsibility: The relevant discipline at the NDU together with the Department of Academic Affairs and subject departments.

Target group: The course is part of the general studies and is optional for all doctoral students.

The course is recommended for all new doctoral students.

Learning outcomes: After completing the course, the student:

- will have basic knowledge and better understanding of the NDU as a teaching and learning environment;
- will understand the structure, requirements, curriculum, teaching arrangements, funding opportunities and supervision practices relating to the doctoral programme in military sciences;
- will know how to draft a personal study plan and a supervision plan;
- will understand the phenomenon and process of writing;
- will know how to identify possible challenges involved in the studies and thesis work and how to independently find solutions to problems;
- will know the basics of an efficient thesis process;
- will recognise the importance of support from the scientific community and peers in a thesis process;

- will be able to network with other students and will learn how to operate in a multidisciplinary environment.

Implementation: The course is implemented in multiform studies composed of assignments carried out independently, lectures, workshops, discussions and face-to-face meetings.

During the course, the student and the thesis supervisor agree on a meeting where the student learns the basics of drafting a personal study plan (PSP) and supervision plan.

Using this information, the students plan their own postgraduate studies according to their field of research and the curriculum for the doctoral programme and taking account of their personal needs and study schedule. The PSP is prepared together with the thesis supervisor and is updated regularly.

Assessment: Requirements for passing the course:

- Active participation in the course events.
- Completion of the preliminary assignments.
- Drafting and approval of a personal study plan and supervision plan.

Passing requires that the assessor deems that that the student has completed the tasks in a manner that meets the learning outcomes.

Grading: Pass/Fail

Additional information: Passing requires physical attendance.

The course is organised as necessary whenever there are enough new doctoral students.

All students are required to prepare a personal study plan (PSP) irrespective of whether they participate in this course. The PSP is prepared using the template provided in Appendix 2.

The course can be included in a degree only once.

1.2.2 Research ethics, 1 cr

Course code: STY22

Responsibility: The relevant discipline at the NDU together with the subject departments and Department of Academic Affairs.

Target group: The course is part of the general studies and is compulsory for all doctoral students.

Learning outcomes: The objective of the course is that after the course, the student:

- will know how to review the ethical challenges involved in their field of research;
- will know how to apply the principles of responsible conduct of research (RCR) in their own research;
- will know how to identify violations of the RCR guidelines and know the procedures for handling suspected violations of the RCR guidelines;
- will know how to use Turnitin, the plagiarism detection solution for academic papers in use at the NDU, and how to interpret and utilise the results it provides.

Implementation: The course is implemented in multiform studies composed of literary materials studied independently, a class and exercise teaching the use of Turnitin and interpretation of its results, and a personal written report (approx. 8 pages). In the report, the students analyse their research from the perspective of ethical considerations and the principles of responsible conduct of research, as well as from the point of view of the ethical challenges, practices and threats affecting their field of research. The course may also include lectures and presentations relating to the course topic.

Alternatively, the course may also be completed by participating in ethical studies offered by another university. In such cases, the credits are determined according to the criteria of the organising university.

Compulsory self-study materials:

- *Responsible conduct of research and procedures for handling allegations of misconduct in Finland*, Finnish Advisory Board on Research Integrity 2012
- *Agreeing on authorship. Recommendation for research publications*, Finnish Advisory Board on Research Integrity 2018
- Separately agreed literature about ethics in the student's field of research or some other similar topic
- Study materials concerning the use and interpretation of Turnitin are available on PVMoodle.

Assessment: Requirements for passing the course:

- Reading the compulsory self-study materials.
- Active participation in other possible course activities.
- Acceptable completion of the exercise.
- Drafting of a written report.

Passing requires that the assessor deems that that the student has completed the tasks in a manner that meets the learning outcomes.

Grading: Pass/Fail

Additional information: Students are recommended to take the course already at the beginning of their studies.

The course can be completed individually according to the student's personal study plan.

The basics of Turnitin are taught in a joint session organised at separately specified time. The class is organised as necessary whenever there are enough students requiring guidance.

Taking the course and its implementation must be agreed upon beforehand with the relevant discipline and the thesis supervisor. In matters concerning guidance and instructions regarding Turnitin, the student is advised to contact the Department of Academic Affairs.

The course can be included in a degree only once.

1.2.3 Designing and leading research projects, 1 cr

Course code: STY23

Responsibility: The relevant discipline at the NDU.

Target group: The course is part of the general studies and is compulsory for all doctoral students.

Learning outcomes: After completing the course, the student:

- will know how to design, implement and lead a research project;
- will understand the stages and objectives of typical research projects at the Defence Forces;
- will know the main sources of funding for defence research;
- will understand the basics of budgeting and will be capable of drafting a budget for a research project;
- will know the most important legal practices and agreements which may relate to research projects;
- will know how to prepare a communications plan for a research project;
- will understand the significance of leadership and principles of effective teamwork;
- will know the duties, roles and responsibilities of the leader of a research project.

Implementation: The course is implemented in multiform studies composed of independent studies, lectures, presentations, discussions, and a personal written report (approx. 8 pages) analysing the student's personal capabilities and development needs in the area of design and leading of a research project.

Lectures, presentations and discussions; group assignments and individual assignments. The topics may include:

- basics of project management
- drafting and assessing a project plan
- main sources of funding for defence research
- budgeting of a research project
- legal practices and agreements relating to research projects
- basics and planning of internal and external communications relating to research projects
- publication of research materials and results
- duties, roles, responsibilities and leadership skills of a project leader.

Assessment: Requirements for passing the course:

- Active participation in the lectures and other learning activities.
- Drafting a personal analysis.

Passing requires that the assessor deems that that the student has completed the tasks in a manner that meets the learning outcomes.

Grading: Pass/Fail

Additional information: The course is organised every other year in connection with a doctoral seminar in military sciences.

The course can be included in a degree only once.

1.2.4 Scientific writing, publishing and communication, 1–2 cr

Course code: STY24A and STY24B

Responsibility: The relevant discipline at the NDU together with NDU linguistic and communications experts and subject departments.

Target group: The course is part of the general studies and is partly compulsory for all doctoral students.

Learning outcomes: After completing the course, the student:

- will be capable of participating in scientific discussion in their field verbally and in writing;
- will understand and recognise the challenges involved in co-authorship;
- will know the publication practices in military sciences and the main publication channels;
- will understand the significance of their own research and the importance of communicating research results in the field of military sciences and will

recognise the related challenges;

- will know how to communicate about their own field of research and research results in an accessible and interesting manner.

Implementation: The course consists of two parts. The first part, STY24A (1 cr), is implemented in multiform studies composed of independent studies, lectures, presentations and discussions, as well as of joint exercises and an independent assignment.

The second part, STY24B (1 cr), is composed of a writing workshop in the language of the dissertation, as well as of related independent work that can be completed alone or in small groups. The independent work can be implemented in multiple ways, such as by writing a scientific article, a report relating to the student's own thesis work, or another text that supports the writing of the thesis.

Assessment: Requirements for passing the course:

- Active participation in the teaching provided in Part 1 and completion of the assignments requiring independent work.
- Active participation in the writing workshop arranged in Part 2 and completing the writing assignment relating to one's own research either alone or in small groups.

Passing requires that the assessor deems that that the student has completed the tasks in a manner that meets the learning outcomes.

Grading: Pass/Fail

Additional information: Part 1 of the course (STY24A) is compulsory for all doctoral students. Part 2 (STY24B) is optional.

The course is organised every other year in connection with a doctoral seminar in military sciences.

Part 2 of the course can be taken at any time after the completion of Part 1. Taking Part 2 and the details of implementation must be agreed upon with the relevant discipline and linguistic experts beforehand.

The course can be included in a degree only once.

1.2.5 Philosophy of science, 1–3 cr

Course code: STY25A and STY25B

Responsibility: The relevant discipline at the NDU together with the subject departments.

Target group: The course is part of the general studies and is partly compulsory for all doctoral students. Part 1 is compulsory for all doctoral students whose discipline specific studies do not include studies in the philosophy of science that correspond to the learning outcomes of this course.

Learning outcomes: After completing the course, the student:

- will be able to understand different scientific orientations in different disciplines;
- will be know the meaning of the key concepts used in the philosophy of science;
- will be understand how key military science approaches link to the philosophy of science;
- will be know the main links between their own research and the philosophy of science and is will be able to justify their choices.

Implementation: The course consists of two parts.

Part 1, STY25A (1 cr), is implemented in multiform studies composed of studying texts that introduce the topics of the lectures, the actual lectures, an assignment carried out independently on the basis of academic articles in the field of philosophy of science (1–2 articles), and participating in discussion during the lectures.

Part 2, STY25B (2 cr), follows the structure of the first part. The second part deepens the themes covered in the first part so that in Part 2, the student is required to analyse the philosophical and scientific roots of their own thesis. Part 2 also includes lectures and studying texts introducing the topics of the lectures, as well as an independent assignment carried out on the basis of scientific articles (2–3 articles).

The introductory texts are provided to the students. The articles which form the basis for the independent assignment must be separately agreed upon. The lecturer will provide suggestions on suitable articles. On the basis of the study materials and lectures, the student is required to write an essay on an agreed theme. The essay should demonstrate that the student has mastered the key concepts used in the philosophy of science (Part 1) and knows how to apply them in their own field of research (Part 2).

Assessment: Requirements for passing the course:

- Active participation in lectures and discussion during the lectures and completing the assignments requiring independent work.

Passing requires that the assessor deems that that the student has completed the tasks in a manner that meets the learning outcomes.

Grading: Pass/Fail

Additional information: Part 1 of the course (STY25A) is conditionally compul-

sory for all doctoral students. Part 2 (STY25B) is optional.

The course is organised every other year in connection with a doctoral seminar in military sciences.

Part 2 of the course can be taken at any time after the completion of Part 1.

Completion of Part 2 and the details of implementation must be agreed upon with the relevant discipline and the responsible teacher beforehand.

This course can only be included in a degree once.

1.2.6 International cooperation, 2 cr

Course code: STY26

Responsibility: The relevant discipline at the NDU together with the subject departments.

Target group: The course is part of the general studies and is compulsory for all doctoral students whose discipline specific studies do not contain courses on the establishment of international networks or on operating within the international military science community.

Learning outcomes: The objective of the course is that after the course, the student:

will know how to establish expert networks and operate in them;

will have established contacts and networks with international scientific communities within their own field of research and research topic;

- will know the main international data sources and discussion forums within their field of research and research topic;
- will be able to present their research verbally and in writing to international audiences.

Implementation: The course is composed of studies that deepen the student's expertise in their field of research and support the student's thesis process. Eligible learning activities include, for example, participating in international conferences, seminars or courses, working with foreign archives, and other similar activities that correspond to the learning outcomes and support the establishment of international networks.

Detailed contents of the course are determined according to the postgraduate student's personal needs and are planned together with the thesis supervisor.

The course is composed of two parts: the actual learning activity and a related written report, for example as follows:

- preparing for and participating in an international conference or seminar and publishing a related paper and/or giving a presentation at the event (2 cr);
- participating in international activities that enhance the student's expertise and networking in their field of research and drafting a written report (approx. 8 pages) on the basis of the activities (2 cr);
- completing some other learning activity that corresponds to the learning outcomes and equals at minimum one week's workload and drafting a written report (approx. 8 pages) on the basis of the activity (2 cr).

Assessment: Requirements for passing the course:

- Participating in an international conference or seminar and publishing a seminar paper or presenting one's research in the form of a speech or a poster; or
- Gaining profound knowledge of the collection and practices of at least one foreign archive in the field of military history and/or of a military science library that is relevant in terms of the thesis topic, working at the archive and/or library selected, and drafting a written report from the perspective of the course's learning outcomes and archive work; or
- Taking an excursion, for example, to a foreign military education or research institute or monitoring or participating in a research project (e.g. monitoring a measuring exercise or other data collection activity) and drafting a report of the visit; or
- Performing some other learning activity agreed upon with the thesis supervisor and drafting a related written analysis, report or learning journal from the perspective of the course's learning outcomes and the student's thesis process.

Passing requires that the assessor deems that that the student has completed the tasks in a manner that meets the learning outcomes.

Grading: Pass/Fail

Additional information: Participating in a conference without publishing a paper or giving a presentation is not enough to pass the course.

A conference, seminar or learning activity intended to be included in another course in accordance with the curriculum is not enough to pass the course. Participating in a single conference, seminar or some other learning activity may only be included in the studies once.

This course can only be included in a degree once.

1.2.7 Data collection, 1 cr

Course code: STY27

Responsibility: The relevant discipline at the NDU together with the NDU Library and the subject departments.

Target group: The course is part of the common studies and is optional for all doctoral students.

Learning outcomes: The objective of the course is that after the course, the student:

- will understand the significance of data collection as part of the scientific research process;
- will know the collections of the NDU Library and the services available to doctoral students;
- will know the main sources of information within their own field of research and thesis topic;
- will understand the key phenomena and concepts relating to scientific information search (e.g. Open Science, peer review, bibliometrics, scientific publication);
- will know how to draft a preliminary data collection plan for their own purposes.

Implementation: The course is implemented in multiform studies composed of independent work, face-to-face meetings and discussions.

The course includes two meetings during which the student presents their personal data collection plan. One of these meetings is with the thesis supervisor and the other with Library staff.

The student is expected to independently research the NDU Library and its collections and services (including MPKK-LibGuides).

The student is required to book a face-to-face meeting (1–2 hours) with the NDU Library staff and prepare for the meeting from the perspective of their thesis topic.

During the meeting, the library staff introduce their database collections to the student specifically from the viewpoint of the student's thesis topic. In addition, the staff will introduce the main services offered by the Library to the student, such as interlibrary services and remote use.

The student drafts a brief data collection plan for their thesis, detailing the main sources of information and search strategies, and presents the plan to the library staff and the thesis supervisor.

Assessment: Requirements for passing the course:

- Active participation in the face-to-face meetings with the Library staff and

the thesis supervisor.

- Completion of the preliminary assignments.
- Drafting an acceptable personal data collection plan.

Passing requires that the assessor deems that that the student has completed the tasks in a manner that meets the learning outcomes.

Grading: Pass/Fail

Additional information: The aim is to arrange the course individually as needed.

Taking the course and the details of implementation must be agreed upon with the relevant discipline, library staff and thesis supervisor beforehand.

This course can only be included in a degree once.

1.2.8 Other competencies supporting the building of expertise, 1–4 op

Course code: STY28A (1 cr), STY28B (2 cr), STY28C (3 cr), STY28D (4 cr)

Responsibility: The relevant discipline at the NDU together with the subject departments.

Target group: The course is part of the general studies and is optional for all doctoral students.

Learning outcomes: The objective of the course is to:

- deepen the student's expertise in their field of research or
- support the student's thesis process or
- enhance the student's personal competencies or
- deepen or supplement the compulsory studies.

Implementation: Alternative learning activities / topics include, for example:

- research funding and acquisition thereof
- thesis supervision
- teaching activities in the student's field of research
- analysis of scientific literature supporting the thesis work
- linguistic studies supporting the thesis work
- archive work and analysis thereof
- researcher visit/exchange
- participating in activities enhancing the student's expertise in their field of research either in Finland or abroad
- writing and publishing a scientific / non-scientific article
- preparation and giving a scientific presentation relating to the student's own research
- peer mentoring.

Detailed contents of the course are determined according to the postgraduate student's personal needs and are planned together with the thesis supervisor. The course contents and implementation must be agreed upon with the relevant discipline and the thesis supervisor in advance.

Assessment: Requirements for passing the course:

- Active participation in the chosen learning activity.
- Drafting a written report (approx. 4–8 pages) of the learning activity, in which the student analyses the activity from the viewpoint of the learning outcomes and reflects upon the activity relative to the student's own thesis work and/or expertise development.

Passing requires that the assessor deems that that the student has completed the tasks in a manner that meets the learning outcomes.

Grading: Pass/Fail

Additional information: The workload involved should be determined so that at least one credit can be awarded for the activity.

The total credits awarded for the course and the relevant course code are entered into the study administration system.

The course cannot be used to replace other courses included in the curriculum. A learning activity intended to be included in another course in accordance with the curriculum is not enough to pass the course.

Taking the course and the details of implementation must be agreed upon with the relevant discipline and thesis supervisor beforehand.

This course can be included in a degree more than once.

2. DISCIPLINE SPECIFIC STUDIES

The minimum extent of the discipline specific studies is 40 credits. This degree component consists of three study modules:

1. Discipline specific studies (23 cr)
2. Methodological studies (10 cr)
3. Postgraduate seminars and critical analysis of dissertations (7 cr)

Students complete the discipline specific studies according to their field of research.

2.1 LEADERSHIP

Leadership studies focus on studying leadership in the different operating environments of the Defence Administration and defence system, particularly in information systems. The leadership environment in the Defence Administration and defence system and related changes are analysed through theoretical and practical reviews. The research in leadership at the NDU focuses on studying leadership, management, organisational structures and organisational cultures. The required leadership studies are separately agreed upon with the thesis supervisor.

2.1.1 *Discipline specific studies*

The minimum extent of the *Discipline specific studies* module is 23 credits. The module contains three compulsory courses, which aim to deepen the student's substantive knowledge relating to their thesis work.

2.1.1.1 Leadership studies as part of military sciences, 3 cr

Course code: STOJO11

Responsibility: Supervising professor or assistant professor

Target group: The course is compulsory for all doctoral students in the field of leadership.

Learning outcomes: After completing the course, the student:

- will know how to discuss the fundamental themes in leadership studies and will understand the current situation and development of leadership studies as part of military sciences;
- will understand the basics of the discipline as part of military sciences.

Implementation: The course can be completed flexibly in a separately agreed upon manner. Alternative learning activities include, for example, a literary essay, written or oral examination or learning journal.

Assessment: Passing requires completing the tasks agreed with the supervising professor or thesis supervisor in a manner that meets the learning outcomes.

Grading: Pass/Fail

2.1.1.2 Studies in philosophy of science, research methodology and research theory in the field of leadership, 10 cr

Course code: STOJO12

Responsibility: Supervising professor or assistant professor

Target group: The course is compulsory for all doctoral students in the field of leadership.

Learning outcomes: After completing the course, the student:

- will understand the philosophical and scientific roots of their own field of research;
- will know how to independently compare and apply different philosophical and scientific concepts and views;
- will know how to independently compare and apply the main research methodologies in their own field of research;
- will know how to apply the theories in their thesis work.

Implementation: Leadership studies are agreed upon between the supervising professor and the student so that the studies supplement the student's previous studies and/or enhance the student's capabilities required for completing the thesis. Learning activities may include, for example:

- participating in methodological and theoretical studies arranged by other universities that support the student's research design
- scientific articles
- essays discussing different methodological and theoretical themes.

Assessment: Passing requires completing the tasks agreed with the supervising professor or thesis supervisor in a manner that meets the learning outcomes.

Grading: Pass/Fail

2.1.1.3 Subject studies supporting thesis work, 10 cr

Course code: STOJO13

Responsibility: Supervising professor or assistant professor

Target group: The course is compulsory for all doctoral students in the field of

leadership.

Learning outcomes: After completing the course, the student:

- will know how to classify and interpret general scientific literature in their field;
- will know how to assess and identify their position within their field of research.

Implementation: Leadership studies are agreed upon between the supervising professor and the student so that the studies supplement the student's previous studies and/or enhance the student's capabilities required for completing the thesis. Learning activities may include, for example:

- courses and seminars
- thesis supervision and teaching
- essays on the scientific literature in the student's field of research
- scientific articles

Assessment: Passing requires completing the tasks agreed with the supervising professor or thesis supervisor in a manner that meets the learning outcomes.

Grading: Pass/Fail

2.1.2 Methodological studies

The minimum extent of methodological studies is 10 credits. The module contains one compulsory course where students learn about selected research methods to deepen and expand their capabilities and competencies. Methodological studies may also be included in studies supporting the application and analysis of different data collection methods in the thesis process.

2.1.2.1 Methodological studies in leadership 10 cr

Course code: STOJO21

Responsibility: Supervising professor or assistant professor

Target group: The course is compulsory for all doctoral students in the field of leadership.

Learning outcomes: After completing the course, the student:

- will know how to select and apply the material collection methods that best suit their research work;
- will know how to select and apply the analytical methods that best suit their research work;
- will know how to select and apply the research methods that best suit their research work.

Implementation: Leadership studies are agreed upon between the supervising professor and the student so that the studies supplement the student's previous studies and/or enhance the student's capabilities required for completing the thesis. Learning activities may include, for example:

- courses and seminars
- analyses of research materials and related essays
- teaching tasks or presentations at national and international conferences
- thesis supervision and teaching
- studying the Defence Forces' training and testing operations.

Assessment: Passing requires completing the tasks agreed with the supervising professor or thesis supervisor in a manner that meets the learning outcomes.

Grading: Pass/Fail

2.1.3 Postgraduate seminars and critical analysis of dissertations

The minimum extent of the *Postgraduate seminars and critical analysis of dissertations* module is 7 ECTS credits. The module contains two compulsory courses.

2.1.3.1 Postgraduate seminars, 5 cr

Course code: STOJO31

Responsibility: Supervising professor or assistant professor

Target group: The course is compulsory for all doctoral students in the field of leadership.

Learning outcomes: After completing the course, the student:

- will be capable of participating in scientific discussion;
- will know how to analyse scientific text and give related feedback;
- will understand the roles of opponent and respondent and will know how to act in those roles;
- will have experience of performance and scientific argumentation, as well as of the role of opponent and will know how to enhance their personal capabilities in this area.

Implementation: Regular participation in postgraduate seminars facilitated by A professor for a period of at minimum four semesters. The student is expected to give at least three seminar presentations (at the beginning, in the middle and at the end of the thesis process) and to act as the opponent for a minimum of three other seminar presentations.

Assessment: The supervisor assesses the achievement of the learning outcomes on the basis of the seminar presentations and opponent duties.

Grading: Pass/Fail

2.1.3.2 Critical analysis of public examinations, 2 cr

Course code: STOJO32

Responsibility: Supervising professor or assistant professor

Target group: The course is compulsory for all doctoral students in the field of leadership.

Learning outcomes: After completing the course, the student:

- will know how to analyse the strengths and weaknesses of dissertations and public examinations;
- will know how to apply the analysis results in their own dissertation and public examination.

Implementation: The student participates in at least three public examinations approved beforehand by the thesis supervisor. Two of these must be from some other field than the student's own field of research. The student is also required to draft a written report (approx. 8 pages) of the events.

Assessment: The supervisor assesses the achievement of the learning outcomes on the basis of the written reports.

Grading: Pass/Fail

2.2 OPERATIONAL ART AND TACTICS

Traditional subjects in the field of operational art and tactics include the theory of tactics and operational art, troop composition and deployment principles, capabilities and capability building, operational planning process and HQ work, and war-time command and control of troops.

As the concept of tactics has expanded, the studies now also cover different forms of non-kinetic influence in new operational environments such as the information and cyber dimension.

The doctoral studies in operational art and tactics are divided into three study modules. The studies are compulsory for all doctoral students in the discipline of operational art and tactics.

2.2.1 Discipline specific studies

The minimum extent of the discipline specific studies is 23 ECTS credits. The module contains three compulsory courses.

2.2.1.1 Operational art and tactics as part of military sciences, 3 cr

Course code: STOTA11

Responsibility: Thesis supervisor.

Target group: The course is compulsory for all doctoral students in the discipline of operational art and tactics.

Learning outcomes: After completing the course, the student:

- will understand the role and general themes of research into operational art and tactics and will know how to position the studies in the field of military sciences;
- will understand the essence of operational art and tactics as a scientific discipline;
- will understand the differences between operational art and tactics and other fields of research;
- will understand the multidisciplinary and multimethodological nature of operational art and tactics.

Implementation: The course is implemented in multiform studies and may comprise literature reviews, contact instruction, writing assignments and participating in seminars and in educational dialogue.

All literature or participating in seminars or educational dialogues must be agreed upon with the thesis supervisor.

Assessment: Passing requires completing the tasks agreed with the thesis supervisor in a manner that meets the learning outcomes.

The implementation of the course and the related learning outcomes, as well as the assessment and acceptance criteria are determined between the supervisor and the student on the basis of the credit allocation principles described in Appendix 1.

Grading: Pass/Fail

2.2.1.2 Theoretical studies in operational art and tactics, 10 cr

Course code: STOTA12

Responsibility: Thesis supervisor.

Target group: The course is compulsory for all doctoral students in the discipline of operational art and tactics.

Learning outcomes: After completing the course, the student:

- will understand the theoretical foundations of warfare and will know how to apply them in their thesis work;
- will know how to analyse and apply the key concepts of operational art and tactics in their own research.

Implementation: The course is implemented in multiform studies and may comprise literature reviews, contact instruction, writing assignments and participating in seminars and in educational dialogue.

All literature or participating in seminars or educational dialogues must be agreed upon with the thesis supervisor.

The student is required to study the agreed literature and then draft a written report on the literature, analysing the applicability of the methods discussed in the literature in their own research.

Assessment: Passing requires completing the tasks agreed with the thesis supervisor in a manner that meets the learning outcomes.

The implementation of the course and the related learning outcomes, as well as the assessment and acceptance criteria are determined between the supervisor and the student on the basis of the credit allocation principles described in Appendix 1.

Grading: Pass/Fail

2.2.1.3 Studies supporting thesis work, 10 cr

Course code: STOTA13

Responsibility: Thesis supervisor.

Target group: The course is compulsory for all doctoral students in the discipline of operational art and tactics.

Learning outcomes: After completing the course, the student:

- will have become an undisputed expert in their own field of research;
- will know the current research situation and main sources of information within their field;
- will be able to utilise previous research and data sources in their thesis work to the extent necessary.

Implementation: The objective of the course is to support and enhance the substantive knowledge of the student required to complete the thesis. The learning outcomes and contents are agreed upon separately between the thesis supervisor and the student so that the studies supplement the student's previous studies and/or enhance the student's capabilities required to complete the thesis. The learning activities may include, for example:

- literary essays
- scientific articles, teaching duties, presentations
- exercises
- courses and seminars, seminar papers
- supervision of thesis work.

The course is implemented in multiform studies and may comprise literature reviews, contact instruction, writing assignments and participating in seminars and in educational dialogue.

The literature, assignments, seminars and courses are selected together with the supervisor and so that they support the building of the student's substantive knowledge.

The student is required to study the agreed literature and then draft a written report on the literature, analysing the applicability of the methods discussed in the literature in their own research. The student may also suggest alternative learning activities to complete the course.

Assessment: Passing requires completing the tasks agreed with the thesis supervisor in a manner that meets the learning outcomes.

The implementation of the course and the related learning outcomes, as well as the assessment and acceptance criteria are determined between the supervisor and the student on the basis of the credit allocation principles described in Appendix 1.

Grading: Pass/Fail

2.2.2 Methodological studies

The minimum extent of the methodological studies is 10 credits. The module contains one compulsory course.

2.2.2.1 Methodological studies in operational art and tactics, 10 cr

Course code: STOTA21

Responsibility: Thesis supervisor.

Target group: The course is compulsory for all doctoral students in the discipline of operational art and tactics.

Learning outcomes: After completing the course, the student:

- will know how to select and apply the material collection methods that best suit their research work;
- will know how to select and apply the analytical methods that best suit their research work;
- will know how to select and apply the research methods that best suit their research work.

Implementation: The student is required to study the agreed literature and then draft a written report on the literature, analysing the applicability of the methods discussed in the literature in their own research. The student may also suggest alternative learning activities to complete the course. The literature must be agreed upon with the supervisor.

Other possible learning activities (e.g. a scientific article or a seminar paper) must be agreed upon with the thesis supervisor.

Assessment: Passing requires completing the tasks agreed with the thesis supervisor in a manner that meets the learning outcomes.

Grading: Pass/Fail

2.2.3 Postgraduate seminars and critical analysis of dissertations

The minimum extent of the *Postgraduate seminars and critical analysis of dissertations* module is 7 credits. The module contains two compulsory courses.

2.2.3.1 Postgraduate seminars, 5 cr

Course code: STOTA31

Responsibility: Thesis supervisor.

Target group: The course is compulsory for all doctoral students in the discipline of operational art and tactics.

Learning outcomes: After completing the course, the student:

- will be capable of scientific thinking and participating in scientific discussion;
- will know how to analyse scientific text and give related feedback;
- will have experience of performance and scientific argumentation, as well

as of the role of opponent and will know how to enhance their personal capabilities in this area.

- will know how to apply the selected research methods in their own thesis work;
- will know how to enhance their expertise on the thesis topic;
- will know how to independently report on their research results in accordance with the principles of scientific argumentation.

Implementation: The student participates in postgraduate seminars regularly for a period of at least four semesters. The student is expected to give at least three seminar presentations (at the beginning, in the middle and at the end of the thesis process) and to act as the opponent for a minimum of three other seminar presentations.

Assessment: The supervisor assesses the achievement of the learning outcomes on the basis of the seminar presentations and opponent duties.

Grading: Pass/Fail

2.2.3.2 Critical analysis of dissertations, 2 cr

Course code: STOTA32

Responsibility: Thesis supervisor.

Target group: The course is compulsory for all doctoral students in the discipline of operational art and tactics.

Learning outcomes: After completing the course, the student:

- will know how to analyse the strengths and weaknesses of argumentation presented in dissertations and public examinations;
- will know how to apply the analysis results in their own dissertation and public examination.
- will be capable of scientific argumentation.

Implementation: The student participates in at least four public examinations and writes a report on these. The report should analyse the foundations of the dissertation and the scientific discussion carried out at the public examination. The supervisor determines the length requirement for the written reports on the basis of Appendix 1.

Assessment: The supervisor assesses the achievement of the learning outcomes on the basis of the written reports.

Grading: Pass/Fail

2.3 MILITARY HISTORY

Military history studies focus on the history of the art of war, contemporary military history and military history of Finland.

The doctoral studies in military history are divided into three study modules.

2.3.1 *Discipline specific studies*

The minimum extent of the discipline specific studies is 23 credits. The module contains three compulsory courses.

2.3.1.1 **Military history as part of military and historical sciences 2 cr**

Course code: STOSH11

Responsibility: Thesis supervisor

Target group: The course is compulsory for all doctoral students in the discipline of military history.

Learning outcomes: After completing the course, the student:

- will understand the role of military history as part of military and historical sciences;
- will know how to analyse source materials relating to the theme and how to produce scientific text;
- will know how to discuss the fundamental themes in military history.

Implementation: The student studies the role of military history as part of military and historical sciences on the basis of national and international literature and drafts a written presentation on the topic that meets the criteria for scientific writing. The student must agree upon the details of the learning activity with the thesis supervisor.

The goal is to produce a referenced essay (12–16 pages) that meets the set requirements or some other output requiring a similar workload, as agreed upon with the supervisor.

Assessment: Passing requires completing the tasks agreed with the supervising professor or thesis supervisor in a manner that meets the learning outcomes.

Grading: Pass/Fail

2.3.1.2 Military thinking, 11 cr

The course is composed of four parts, which are:

- Military theorist or military influencer
- Commander
- Military theory analysis of operations
- Analysing military theory trends and changes

A. Military theorist or military influencer, 3 cr

Course code: STOSH21

Responsibility: Thesis supervisor

Target group: The course is compulsory for all doctoral students in the discipline of military history.

Learning outcomes: After completing the course, the student:

- will know how to analyse military thinking and its development based on a personal profile;
- will know how to select, analyse and apply different data sources in research;
- will know how to write a referenced scientific report on the object of study.

Implementation: The student studies the life of one officer and drafts a personal profile and an analysis of the person as an important military theorist or influencer in their time.

The data sources should be as diverse as possible (e.g. archive materials, biographies, media content, other scientific literature). The range of source materials depends on the selected subject. The learning outcomes are fulfilled when the student successfully combines and analyses the source materials in a manner that results in a scientifically high-quality essay on the subject.

The subject may be anyone who has had either a national or international influence in their time. The student must present a reasoned proposal on the study subject to the thesis supervisor. The person may also be linked to the thesis topic but can also be someone without a military background.

The goal is to produce a referenced essay (approx. 8–12 pages) that meets the set requirements.

Assessment: Passing requires completing the tasks agreed with the supervising professor or thesis supervisor in a manner that meets the learning outcomes.

Grading: Pass/Fail

B. Commander, 3 cr**Course code:** STOSH22**Responsibility:** Thesis supervisor**Target group:** The course is compulsory for all doctoral students in the discipline of military history.**Learning outcomes:** After completing the course, the student:

- will know how to analyse military thinking and competencies and military leadership based on a personal profile;
- will know how to select, analyse and apply versatile data sources in research;
- will know how to analyse, compare and combine different data sources;
- will know how to write a referenced scientific report on the object of study.

Implementation: The student studies the life of one wartime commander and drafts an analysis of the subject as a leader and military expert. The aim of the assignment is to deepen the student's understanding of the issues involved in creating personal profiles.

The data sources should be as diverse as possible (e.g. archive materials, biographies, media content, other studies). The range of source materials depends on the selected subject. The learning outcomes are fulfilled when the student successfully combines and analyses the source materials in a manner that results in a scientifically sufficiently high-quality essay on the subject.

The subject may be anyone who has had either a national or international influence in their time. The student must present a reasoned proposal on the study subject to the thesis supervisor. The person may also be linked to the thesis topic but can also be someone without a military background.

The goal is to produce a referenced essay (approx. 10–12 pages) that meets the set requirements.

Assessment: Passing requires completing the tasks agreed with the supervising professor or thesis supervisor in a manner that meets the learning outcomes.**Grading:** Pass/Fail**Additional information:** If the essay is published in a scientific publication, the student will earn one extra credit.**C. Military theory analysis of operation, 2 cr****Course code:** STOSH23

Responsibility: Thesis supervisor

Target group: The course is compulsory for all doctoral students in the discipline of military history.

Learning outcomes: After completing the course, the student:

- will know how to analyse general tactical principles and their application in military operations;
- will know how to select, analyse and apply versatile data sources in research;
- knows how to analyse, compare and combine different data sources;
- will know how to write a referenced scientific report on the object of study.

Implementation: The student studies one military operation and examines how well general tactical principles were applied in the operation.

The data sources should be as diverse as possible (e.g. archive materials, biographies, media content, other studies). The range of source materials depends on the selected operation. The learning outcomes are fulfilled when the student successfully combines and analyses the source materials in a manner that results in a scientifically sufficiently high-quality essay on the subject.

The operation may be any wartime operation, however, it must involve the coordination of operations of several military and/or defence branches. The analysis must cover the entire operation from planning to implementation. The student must present a reasoned proposal on the operation to the thesis supervisor. The operation may also be linked to the thesis topic. The student and the supervisor may also agree to adjust the learning outcomes to better support the thesis topic.

The goal is to produce a referenced essay (approx. 10–16 pages) that meets the set requirements.

Assessment: Passing requires completing the tasks agreed with the supervising professor or thesis supervisor in a manner that meets the learning outcomes.

Grading: Pass/Fail

Additional information: If the essay is published in a scientific publication, the student will earn one extra credit.

D. Analysing military theory trends and changes, 3 cr

Course code: STOSH24

Responsibility: Thesis supervisor

Target group: The course is compulsory for all doctoral students in the discipline of military history.

Learning outcomes: After completing the course, the student:

- will know how to analyse general tactical principles and their long-term development;
- will know how to select, analyse and apply versatile data sources in research;
- will know how to analyse, compare and combine different data sources;
- will know how to write a referenced scientific report on the object of study.

Implementation: The student studies the long-term development of one general tactical principle and drafts an analysis on the topic.

The data sources should be as diverse as possible (e.g. archive materials, biographies, media content, other studies). The range of source materials depends on the selected tactical principle. The learning outcomes are fulfilled when the student successfully combines and analyses the source materials in a manner that results in a scientifically sufficiently high-quality essay on the subject.

The principle may be one of the general tactical principles. The student must present a reasoned proposal on the principle to the thesis supervisor. The student and the supervisor may also agree to adjust the learning outcomes to better support the thesis topic.

The goal is to produce a referenced essay (approx. 10 - 15 pages) that meets the set requirements.

Assessment: Passing requires completing the tasks agreed with the supervising professor or thesis supervisor in a manner that meets the learning outcomes.

Grading: Pass/Fail

Additional information: If the essay is published in a scientific publication, the student will earn one extra credit.

2.3.1.3 Studies supporting thesis work, 10 cr

Course code: STOSH25

Responsibility: Thesis supervisor

Target group: The course is compulsory for all doctoral students in the discipline of military history.

Learning outcomes: After completing the course, the student:

- will know how to identify, select and enhance the knowledge and skills required for their research work;
- will know how to analyse military history research methods and apply them in their own research;

- will know how to search, assess and determine the research materials required for their thesis work;
- will know how to classify and interpret the research materials required for their thesis work;
- will be capable of independently producing new scientific knowledge in their thesis.

Implementation: The student and the thesis supervisor agree on studies that will help to build the student's capabilities concerning the thesis work.

The student and the supervisor also agree upon the individual learning activities. The workload required in each learning activity must equal at least one ECTS credit. The learning activities may include, for example:

- methodological studies
- scientific articles
- seminars that support the thesis work
- literature examinations.

Assessment: Achievement of the learning outcomes must be demonstrated in a manner separately determined by the supervisor (e.g. in the form of a literature examination, oral examination or essay). The supervisor assesses the achievement of the learning outcomes on the basis of the written reports.

Grading: Pass/Fail

2.3.2 Methodological studies

The minimum extent of the methodological studies is 10 credits. The module contains five compulsory courses.

2.3.2.1 Trends in military history research, 2 cr

Course code: STOSH31

Responsibility: Thesis supervisor

Target group: The course is compulsory for all doctoral students in the discipline of military history.

Learning outcomes: After completing the course, the student:

- will know how to analyse the key commonalities and diversities between 'new military history' and older military history and justify their suitability for research into military history.

Implementation: The student studies the discussion on the topic and analyses the two research approaches. In addition, the student is required to draft an essay (approx. 10–14 pages) on the suitability of the two approaches for research into military history.

Assessment: Passing requires completing the tasks agreed with the supervising professor or thesis supervisor in a manner that meets the learning outcomes.

Grading: Pass/Fail

2.3.2.2 Aspects on history writing, 2 cr

Course code: STOSH32

Responsibility: Thesis supervisor

Target group: The course is compulsory for all doctoral students in the discipline of military history.

Learning outcomes: After completing the course, the student:

- will know how to analyse the fundamental themes in military history research;
- will know how to analyse the commonalities and diversities in the literature on military history research and in research methodologies.

Implementation: The student is required to study three books on the theme and the related discussion and texts and to draft an essay (approx. 8–12 pages) on the key commonalities and diversities in the books.

The student may also propose drafting a similar essay on the basis of some other publications.

Assessment: Passing requires completing the tasks agreed with the supervising professor or thesis supervisor in a manner that meets the learning outcomes.

Grading: Pass/Fail

2.3.2.3 International trends in military history methodology, 2 cr

Course code: STOSH33

Responsibility: Thesis supervisor

Target group: The course is compulsory for all doctoral students in the discipline of military history.

Learning outcomes: After completing the course, the student:

- will know how to classify and analyse the fundamental themes in international military history research;
- will know how to identify the key international methodology literature in terms of their thesis work, as well as how to apply the literature in their own research.

Implementation: The student studies the key international methodology literature in terms of their thesis work.

The literature must be separately agreed upon with the thesis supervisor and must amount to around 300–400 pages.

Assessment: The achievement of the learning outcomes is assessed based on an essay, literature examination or oral examination.

Grading: Pass/Fail

2.3.2.4 Scientific review of research, 2 cr

Course code: STOSH34

Responsibility: Thesis supervisor

Target group: The course is compulsory for all doctoral students in the discipline of military history.

Learning outcomes: After completing the course, the student:

- will understand the principles of peer review in military history research;
- will know how to apply the principles of peer review in their own research and when acting as an opponent.

Implementation: The student selects a publication with the thesis supervisor, which may be a recent doctoral dissertation or some other publication in the student's field of research that meets the requirements for scientific work. The review must focus, for example, on the merits of the overall work, the use of research methods, quality of source materials, and reliability of the key conclusions. The review should be approximately 8–12 pages long.

Assessment: Passing requires completing the tasks agreed with the supervising professor or thesis supervisor in a manner that meets the learning outcomes.

Grading: Pass/Fail

2.3.2.5 Working at a foreign archive, 2 cr

Course code: STOSH35

Responsibility: Thesis supervisor

Target group: The course is compulsory for all doctoral students in the discipline of military history.

Learning outcomes: After completing the course, the student:

- will know how to search, analyse and utilise foreign data sources in their research;
- will understand the practices and ordering policies of a selected foreign archive;
- will know how to establish expert networks and operate in them;
- will have established contacts and networks with international scientific communities within their own field of research and research topic;

Implementation: The course is taken by visiting a foreign archive in person and learning how to use it by working at the archive.

The archive must be approved by the thesis supervisor. The selected archive should be useful in terms of the student's thesis process. The student should reserve at least one week for working at the archive. The student is also required to draft a report (approx. 8 pages) of the work period. The NDU will attempt to arrange a scholarship for the student to cover the costs of the visit.

Assessment: Passing requires completing the tasks agreed with the supervising professor or thesis supervisor in a manner that meets the learning outcomes.

Grading: Pass/Fail

Additional information: If the student decides to include this course as part of their field-specific research studies in military history, they are not required to take the conditionally compulsory course on international cooperation (STY26) included in the general studies. Working at a foreign archive also enhances the student's international cooperation skills and thus the student can be considered to fulfil the learning outcomes set out for the course on international cooperation.

2.3.3 Postgraduate seminars and critical analysis of dissertations

The minimum extent of the *Postgraduate seminars and critical analysis of dissertations* module is 7 ECTS credits. The module contains two compulsory courses.

2.3.3.1 Postgraduate seminars, 5 cr

Course code: STOSH41

Responsibility: Professor and assistant professor

Target group: The course is compulsory for all doctoral students in the discipline of military history.

Learning outcomes: After completing the course, the student:

- will be capable of scientific thinking and participating in scientific discussion;
- will know how to analyse scientific text and give related feedback;
- will understand the roles of opponent and respondent and will know how to act in those roles;
- will have experience of performance and scientific argumentation, as well as of the role of opponent and will know how to enhance their personal capabilities in this area.
- will know how to independently report on their research results in accordance with the principles of scientific argumentation.

Implementation: Active participation in postgraduate seminars facilitated by a professor or assistant professor for a period of at least four semesters. The student is expected to give at minimum three seminar presentations (at the beginning, in the middle and at the end of the thesis process) and act as the opponent for at least three other seminar presentations.

The NDU organises 6–8 military history seminars per academic year.

Assessment: The supervisor assesses the achievement of the learning outcomes on the basis of the seminar presentations and opponent duties.

Grading: Pass/Fail

2.3.3.2 Critical analysis of dissertations, 2 cr

Course code: STOSH42

Responsibility: Thesis supervisor

Target group: The course is compulsory for all doctoral students in the discipline of military history.

Learning outcomes: After completing the course, the student:

- will know how to analyse the strengths and weaknesses of dissertations and public examinations;

- will know how to apply the analysis results in their own dissertation and public examination.
- will be capable of scientific argumentation.

Implementation: The student participates in four public examinations in their field of research (military/historical sciences). The student is required to draft a report (5–8 pages) of each event focusing on the analysis of the debate between the opponent and the doctoral candidate and describing the scientific contribution of the event.

Assessment: The supervisor assesses the achievement of the learning outcomes on the basis of the written reports.

Grading: Pass/Fail

2.4 MILITARY ECONOMICS

Military economics focuses on another core process of the Defence Forces, i.e. on capability planning and capability building, as well as on processes supporting it, such as requirements management. In addition, military economics also examines military security of supply and the supporting industrial and technological capabilities in society.

2.4.1 *Discipline specific studies*

The minimum extent of the discipline specific studies is 23 ECTS credits. The module contains four compulsory courses.

2.4.1.1 **Military economics as part of military and economic sciences, 2 cr**

Course code: STOST11

Responsibility: Professor

Target group: The course is compulsory for all doctoral students in the discipline of military economics.

Learning outcomes: After completing the course, the student:

- will know how to discuss the fundamental themes in military economics and will understand the current situation and development of military economics as part of military sciences;
- will understand the basics of the discipline and its role as part of military

and economic sciences;

- will have gained sufficient knowledge of the other disciplines relating to military economics that will enable them to follow developments in those fields.

Implementation: As a rule, the course is taken by participating in an international military science conference and preparing and giving a presentation at the conference.

Students who are prevented from participating in an international scientific conference may complete the course by writing an approximately 15-page referenced essay or by completing a learning activity of a corresponding workload as agreed with the thesis supervisor.

Assessment: Passing requires completing the tasks agreed with the supervising professor or thesis supervisor in a manner that meets the learning outcomes.

Grading: Pass/Fail

Additional information: If the student decides to include this course as part of their discipline specific studies in military economics, they are not required to take the conditionally compulsory course on international cooperation (STY26) included in the general studies. Participating in an international conference also enhances the student's international cooperation skills and thus the student can be considered to fulfil the learning outcomes set out for the course on international cooperation.

2.4.1.2 Philosophy of science and methodological studies in military economics, 4 cr

Course code: STOST12

Responsibility: Professor

Target group: The course is compulsory for all doctoral students in the discipline of military economics.

Learning outcomes: After completing the course, the student:

- will understand the philosophical and scientific roots of their field of research and how to apply theory creating scientific knowledge, as well as the role of theory in scientific research;
- will know how to independently compare and apply different philosophical and scientific concepts and views;
- will know how to apply scientific research methods in an independent and critical manner and will be able to create new scientific knowledge within their field of research;
- will know how to apply the theories in their thesis work.

Implementation: The course is taken by participating in a seminar and reading and drafting a summary of a book discussing the themes of philosophy of science. The literature must be separately agreed upon with the thesis supervisor and must amount to around 300–400 pages.

Assessment: Passing requires completing the tasks agreed with the supervising professor or thesis supervisor in a manner that meets the learning outcomes.

The implementation of the course and the related learning outcomes, as well as the assessment and acceptance criteria are determined between the supervisor and the student on the basis of the credit allocation principles described in Appendix 1.

Grading: Pass/Fail

2.4.1.3 Theory of military economics I, 8 cr

Course code: STOST13

Responsibility: Professor

Target group: The course is compulsory for all doctoral students in the discipline of military economics.

Learning outcomes: After completing the course, the student:

- will understand the discipline of military economics and its societal significance;
- will understand the philosophical and scientific roots of their field of research and how to apply theory creating scientific knowledge, as well as the role of theory in scientific research;
- will know how to apply the theories in their thesis work.

Implementation: A literature review of publications determined separately according to the student's needs. The publications may include textbooks or other literature and scientific articles. The page requirement is approximately 800 pages.

The student is required to draft a written review of the literature.

Assessment: Passing requires completing the tasks agreed with the supervising professor or thesis supervisor in a manner that meets the learning outcomes.

The implementation of the course and the related learning outcomes, as well as the assessment and acceptance criteria are determined between the supervisor and the student on the basis of the credit allocation principles described in Appendix 1.

Grading: Pass/Fail

2.4.1.4 Theory of military economics II, 8 cr

Course code: STOST14

Responsibility: Professor

Target group: The course is compulsory for all doctoral students in the discipline of military economics.

Learning outcomes: After completing the course, the student:

- will understand the discipline of military economics and its societal significance;
- will understand the philosophical and scientific roots of their field of research and how to apply theory creating scientific knowledge, as well as the role of theory in scientific research;
- will know how to apply the theories in their thesis work.

Implementation: A literature review of publications determined separately according to the student's needs. The publications may include textbooks or other literature and scientific articles. The page requirement is approximately 800 pages.

The student is required to draft a written review of the literature.

Assessment: Passing requires completing the tasks agreed with the supervising professor or thesis supervisor in a manner that meets the learning outcomes.

The implementation of the course and the related learning outcomes, as well as the assessment and acceptance criteria are determined between the supervisor and the student on the basis of the credit allocation principles described in Appendix 1.

Grading: Pass/Fail

2.4.2 Methodological studies

The minimum extent of the methodological studies is 10 credits. The module contains two compulsory courses.

2.4.2.1 Research methods in military economics I, 5 cr

Course code: STOST21

Responsibility: Professor

Target group: The course is compulsory for all doctoral students in the discipline of military economics.

Learning outcomes: After completing the course, the student:

- will know how to select and apply data collection methods required for their research work;
- will know how to select and apply the military economics research methods that are best suited to their research work.

Implementation: The course is taken by reading the book *Research Methods for Business students*, which introduces the most common research methods in economic sciences. The student is required to draft an analytical review of the book, focusing on analysing the different research methods and assessing their applicability in the student's own research work.

Assessment: Passing requires completing the tasks agreed with the supervising professor or thesis supervisor in a manner that meets the learning outcomes.

The implementation of the course and the related learning outcomes, as well as the assessment and acceptance criteria are determined between the supervisor and the student on the basis of the credit allocation principles described in Appendix 1.

Grading: Pass/Fail

2.4.2.2 Research methods in military economics II, 5 cr

Course code: STOST22

Responsibility: Professor

Target group: The course is compulsory for all doctoral students in the discipline of military economics.

Learning outcomes: After completing the course, the student:

- will know how to assess the different research methods in military economics and apply them in their own research;
- will know how to select and apply data analysis methods required for their research work.

Implementation: The course is tailored to comply with the methods used in the student's thesis work. The course is taken by studying different data analysis methods by reading separately agreed publications on the topic. The student is required to draft an analytical review of the literature, focusing on analysing the different research and analysis methods used in military economics and to assess their applicability in the student's own research work.

Alternatively, the student can complete the course by participating in methodologi-

cal studies offered by a civilian university⁷. In such cases, the credits are determined on the basis of the credits awarded for the course at the university in question.

Assessment: Passing requires completing the tasks agreed with the supervising professor or thesis supervisor in a manner that meets the learning outcomes.

The implementation of the course and the related learning outcomes, as well as the assessment and acceptance criteria are determined between the supervisor and the student on the basis of the credit allocation principles described in Appendix 1.

Grading: Pass/Fail

2.4.3 Postgraduate seminars and critical analysis of dissertations

The minimum extent of the *Postgraduate seminars and critical analysis of dissertations* module is 7 ECTS credits. The module contains two compulsory courses.

2.4.3.1 Postgraduate seminars, 2 cr

Course code: STOST31

Responsibility: Professor

Target group: The course is compulsory for all doctoral students in the discipline of military economics.

Learning outcomes: After completing the course, the student:

- will be capable of participating in scientific discussion;
- will know how to analyse scientific text and give related feedback;
- will understand the roles of opponent and respondent and will know how to act in those roles;
- will have experience of performance and scientific argumentation, as well as of the role of opponent and will know how to enhance their personal capabilities in this area.

Implementation: Seminars are arranged around different themes. The student is required to study materials relating to the seminar theme and participate in the seminar in scientific discussion on themes concerning military economics and the student's thesis topic.

Assessment: The supervisor assesses the achievement of the learning outcomes on the basis of the seminar presentations and opponent duties.

Grading: Pass/Fail

⁷ I.e. flexible study right, see page 11.

Additional information: Due to the limited number of postgraduate students in military economics, presently the seminar is arranged every other year.

2.4.3.2 Critical analysis of dissertations, 5 cr

Course code: STOST32

Responsibility: Professor

Target group: The course is compulsory for all doctoral students in the discipline of military economics.

Learning outcomes: After completing the course, the student:

- will know how to analyse scientific research carried out in the field of military and economic sciences;
- will know how to analyse research methods used in the field and results achieved using those methods;
- will know how to analyse the structure of dissertations and assess the strengths and weaknesses of dissertations;
- will know how to analyse the success of scientific argumentation;
- will know how to apply the analysis results in their own dissertation and public examination.

Implementation: The course is taken by reading five doctoral dissertations in the area of military or economic sciences and by drafting a review of each dissertation from the viewpoint of the course learning outcomes.

Assessment: The supervisor assesses the achievement of the learning outcomes on the basis of the written reports.

Grading: Pass/Fail.

2.5 MILITARY TECHNOLOGY

Military technology examines technologies and supporting mathematical and scientific subjects, as well as operational analysis methods. Military technology research focuses on battlefield, surveillance and command system technology, as well as operational analysis methods.

2.5.1 Discipline specific studies

The minimum extent of the discipline specific studies is 23 ECTS credits. The module contains three compulsory courses.

2.5.1.1 Military technology as part of military sciences, 3 cr

Course code: STOSTE11

Responsibility: Professor

Target group: The course is compulsory for all doctoral students in the discipline of military technology.

Learning outcomes: After completing the course, the student:

- will know how to discuss the fundamental themes in military technology and will understand the current situation and development of military technology as part of military sciences;
- will understand the basics of the discipline as part of military sciences.

Implementation: The course can be completed flexibly in a separately agreed upon manner. Alternative learning activities include, for example, a literary essay or a written or oral examination.

The implementation of the course and the related learning outcomes, as well as the assessment and acceptance criteria are determined between the supervisor and the student on the basis of the credit allocation principles described in Appendix 1.

Assessment: Passing requires completing the tasks agreed with the supervising professor in a manner that meets the learning outcomes.

Grading: Pass/Fail.

2.5.1.2 Studies in the philosophy of science, research methodology and research theory in the discipline of military technology, 10 cr

Course code: STOSTE12

Responsibility: Professor

Target group: The course is compulsory for all doctoral students in the discipline of military technology.

Learning outcomes: After completing the course, the student:

- will know the main research methods within their field of research;
- will know how to independently compare and apply different research methods in their thesis work.

Implementation: The military technology studies are agreed upon between the supervising professor and the student so that the studies supplement the student's previous studies and/or enhance the student's capabilities required for completing the thesis. Learning activities may include, for example:

- participating in methodological and theoretical studies arranged by other universities that support the student's research design
- essays discussing different methodological and theoretical themes.
- methodology courses held by NDU adjunct professors.

Assessment: Passing requires completing the tasks agreed with the supervising professor in a manner that meets the learning outcomes.

Grading: Pass/Fail.

2.5.1.3 Subject studies supporting thesis work, 10 cr

Course code: STOSTE13

Responsibility: Professor

Target group: The course is compulsory for all doctoral students in the discipline of military technology.

Learning outcomes: After completing the course, the student:

- will understand the basics of military technology and will know how to apply them in their own research;
- will know how to search, assess and determine the research materials required for their thesis work;
- will know how to classify and interpret the research materials required for their thesis work;
- will be capable of independently producing new scientific knowledge in their thesis.

Implementation: The military technology studies are agreed upon between the supervising professor and the student so that the studies supplement the student's previous studies and/or enhance the student's capabilities required for completing the thesis. Learning activities may include, for example:

- courses and seminars
- thesis supervision and teaching
- essays on scientific literature in the student's field of research.

The implementation of the course and the related learning outcomes, as well as the assessment and acceptance criteria are determined between the supervisor and the student on the basis of the credit allocation principles described in Appendix 1.

Assessment: Passing requires completing the tasks agreed with the supervising professor in a manner that meets the learning outcomes.

Grading: Pass/Fail

2.5.2 Methodological studies

The minimum extent of the methodological studies is 10 credits. The module contains one compulsory course.

2.5.2.1 Methodological studies in military technology, 10 cr

Course code: STOSTE21

Responsibility: Professor

Target group: The course is compulsory for all doctoral students in the discipline of military technology.

Learning outcomes: After completing the course, the student:

- will know how to select and apply the material collection methods that best suit their research work;
- will know how to select and apply the analytical methods that best suit their research work;
- will know how to select and apply the research methods that best suit their research work.

Implementation: The methodological studies in military technology are agreed upon between the supervising professor and the student so that the studies supplement the student's previous studies and/or enhance the student's capabilities required for completing the thesis. Learning activities may include, for example:

- courses and seminars
- thesis supervision and teaching

Assessment: Passing requires completing the tasks agreed with the supervising professor in a manner that meets the learning outcomes.

Grading: Pass/Fail

2.5.3 Postgraduate seminars and critical analysis of dissertations

The minimum extent of the *Postgraduate seminars and critical analysis of dissertations* module is 7 credits. The module contains one compulsory course.

2.5.3.1 Postgraduate seminar I, 3 cr

Course code: STOSTE31

Responsibility: Professor

Target group: The course is compulsory for all doctoral students in the discipline of military technology.

Learning outcomes: After completing the course, the student:

- will be capable of participating in scientific discussion;
- will know how to analyse scientific text and give related feedback;
- will understand the roles of opponent and respondent and will know how to act in those roles;
- will have experience of performance and scientific argumentation, as well as of the role of opponent and will know how to enhance their personal capabilities in this area.

Implementation: The seminar can be arranged if there is a sufficient number of postgraduate students in military technology. Since this is not always the case, the student may replace this course by participating in a postgraduate seminar arranged in some other field of military science or in another university. If the student completes this course by participating in a postgraduate seminar arranged in some other field of military science or in another university, the learning activities and the assessment will comply with the criteria of the organising discipline or university.

Assessment: The supervisor assesses the achievement of the learning outcomes on the basis of the seminar presentations and opponent duties.

Grading: Pass/Fail

2.5.3.2 Postgraduate seminar II, 4 cr

Course code: STOSTE32

Responsibility: Professor

Target group: The course is compulsory for all doctoral students in the discipline of military technology.

Learning outcomes: After completing the course, the student:

- will be capable of participating in scientific discussion;
- will know how to analyse scientific text and give related feedback;
- will understand the roles of opponent and respondent and will know how to act in those roles;
- will have experience of performance and scientific argumentation, as well as of the role of opponent and will know how to enhance their personal capabilities in this area.

Implementation: The seminar can be arranged if there is a sufficient number of postgraduate students in military technology. Since this is not always the case, the

student may replace this course by participating in a postgraduate seminar arranged in some other field of military science or in another university. If the student completes this course by participating in a postgraduate seminar arranged in some other field of military science or in another university, the learning activities and the assessment must comply with the criteria of the organising discipline.

Assessment: The supervisor assesses the achievement of the learning outcomes on the basis of the seminar presentations and opponent duties.

Grading: Pass/Fail

2.6 MILITARY PEDAGOGY

Military pedagogy is a field of human science and focuses on studying human capabilities and the building thereof from the viewpoint of security, education, crisis management and warfare. The main theoretical basis of military pedagogy lies in educational and sport science, but it also utilises data and research methods from many other scientific fields, such as sociology and psychology.

2.6.1 *Discipline specific studies*

The minimum extent of the *Discipline specific studies* module is 23 credits. The module contains three compulsory courses, which aim to deepen the student's substantive knowledge relating to their thesis work.

2.6.1.1 Military pedagogy as part of military sciences, 3 cr

Course code: STOSPE11

Responsibility: Supervising professor or assistant professor

Target group: The course is compulsory for all doctoral students in the discipline of military pedagogy.

Learning outcomes: After completing the course, the student:

- will know how to discuss the fundamental themes in military pedagogy and will understand the current situation and development of military pedagogy as part of military sciences;
- will understand the basics of the discipline as part of the military sciences.

Implementation: The course can be completed flexibly in a separately agreed upon manner. Alternative learning activities include, for example, a literary essay, written or oral examination or learning journal.

Assessment: Passing requires completing the tasks agreed with the supervising professor or thesis supervisor in a manner that meets the learning outcomes.

Grading: Pass/Fail

2.6.1.2 Studies in the philosophy of science, research methodology and research theory in the discipline of military pedagogy, 10 cr

Course code: STOSPE12

Responsibility: Supervising professor or assistant professor

Target group: The course is compulsory for all doctoral students in the discipline of military pedagogy.

Learning outcomes: After completing the course, the student:

- will understand the philosophical and scientific roots of their own field of research;
- will know how to independently compare and apply different philosophical and scientific concepts and views;
- will know how to independently compare and apply the main research methodologies in their own field of research;
- will know how to apply the theories in their thesis work.

Implementation: The military pedagogy studies are agreed upon between the supervising professor and the student so that the studies supplement the student's previous studies and/or enhance the student's capabilities required for completing the thesis. Learning activities may include, for example:

- participating in methodological and theoretical studies arranged by other universities that support the student's research design
- scientific articles
- essays discussing different methodological and theoretical themes.

Assessment: Passing requires completing the tasks agreed with the supervising professor or thesis supervisor in a manner that meets the learning outcomes.

Grading: Pass/Fail

2.6.1.3 Subject studies supporting thesis work, 10 cr

Course code: STOSPE13

Responsibility: Supervising professor or assistant professor

Target group: The course is compulsory for all doctoral students in the discipline of military pedagogy.

Learning outcomes: After completing the course, the student:

- will know how to classify and interpret general scientific literature in their field;
- will know how to assess and identify their position within their field of research.

Implementation: The military pedagogy studies are agreed upon between the supervising professor and the student so that the studies supplement the student's previous studies and/or enhance the student's capabilities required for completing the thesis. Learning activities may include, for example:

- courses and seminars
- thesis supervision and teaching
- essays on the scientific literature in the student's field of research
- scientific articles

Assessment: Passing requires completing the tasks agreed with the supervising professor or thesis supervisor in a manner that meets the learning outcomes.

Grading: Pass/Fail

2.6.2 Methodological studies

The minimum extent of the methodological studies is 10 credits. The module contains one compulsory course where students learn about selected research methods to deepen and expand their capabilities and competencies.

2.6.2.1 Methodological studies in military pedagogy, 10 cr

Course code: STOSPE21

Responsibility: Supervising professor or assistant professor

Target group: The course is compulsory for all doctoral students in the discipline of military pedagogy.

Learning outcomes: After completing the course, the student:

- will know how to select and apply the material collection methods that best suit their research work;
- will know how to select and apply the analytical methods that best suit their research work;
- will know how to select and apply the research methods that best suit their research work.

Implementation: The military pedagogy studies are agreed upon between the supervising professor and the student so that the studies supplement the student's previous studies and/or enhance the student's capabilities required for completing the thesis. Learning activities may include, for example:

- courses and seminars
- analyses of research materials and related essays
- teaching tasks or presentations at national and international conferences
- thesis supervision and teaching

Assessment: Passing requires completing the tasks agreed with the supervising professor or thesis supervisor in a manner that meets the learning outcomes.

Grading: Pass/Fail

2.6.3 Postgraduate seminars and critical analysis of dissertations

The minimum extent of the *Postgraduate seminars and critical analysis of dissertations* module is 7 ECTS credits. The module contains two compulsory courses.

2.6.3.1 Postgraduate seminars, 5 cr

Course code: STOSPE31

Responsibility: Supervising professor or assistant professor

Target group: The course is compulsory for all doctoral students in the discipline of military pedagogy.

Learning outcomes: After completing the course, the student:

- will be capable of participating in scientific discussion;
- will know how to analyse scientific text and give related feedback;
- will understand the roles of opponent and respondent and will know how to act in those roles;
- will have experience of performance and scientific argumentation, as well as of the role of opponent and will know how to enhance their personal capabilities in this area.

Implementation: Regular participation in postgraduate seminars facilitated by A professor for a period of at minimum four semesters. The student is expected to participate in seminars in their field of research to the extent that is purposeful in terms of their thesis process. In addition, the student is expected to participate in discussions on other thesis manuscripts and to present the progress of their own thesis.

Assessment: The supervisor assesses the achievement of the learning outcomes on

the basis of the seminar presentations and opponent duties.

Grading: Pass/Fail

2.6.3.2 Critical analysis of public examinations, 2 cr

Course code: STOSPE32

Responsibility: Supervising professor or assistant professor

Target group: The course is compulsory for all doctoral students in the discipline of military pedagogy.

Learning outcomes: After completing the course, the student:

- will know how to analyse the strengths and weaknesses of dissertations and public examinations;
- will know how to apply the analysis results in their own dissertation and public examination.

Implementation: The student participates in at least three public examinations approved beforehand by the thesis supervisor. Two of these must be from some other field than the student's own field of research. The student is also required to draft a written report of the events (approx. 8 pages).

Assessment: The supervisor assesses the achievement of the learning outcomes on the basis of the written reports.

Grading: Pass/Fail.

2.7 MILITARY SOCIOLOGY

Military sociology examines the armed forces from the perspective of social relations on individual, group and organisational levels as well as the role of armed forces in society. Military sociology utilises and applies the results, theories and methodologies of social and behavioural sciences. This branch of military sciences focuses on interaction and social relations, as well as on their structure and dynamics.

2.7.1 Discipline specific studies

The minimum extent of the discipline specific studies is 23 ECTS credits. The module contains three compulsory courses.

2.7.1.1 Military sociology as part of military sciences, 3 cr

Course code: STOSO11

Responsibility: Supervising professor or assistant professor

Target group: The course is compulsory for all doctoral students in the discipline of military sociology.

Learning outcomes: After completing the course, the student:

- will know how to discuss the fundamental themes in military sociology and will understand the current situation and development of military sociology as part of military sciences;
- will understand the basics of the discipline as part of military sciences.

Implementation: The course can be completed flexibly in a separately agreed upon manner. Alternative learning activities include, for example, a literary essay, written or oral examination or learning journal.

Assessment: Passing requires completing the tasks agreed with the supervising professor or thesis supervisor in a manner that meets the learning outcomes.

Grading: Pass/Fail

2.7.1.2 Studies in philosophy of science, research methodology and research theory in the discipline of military sociology, 10 cr

Course code: STOSO12

Responsibility: Supervising professor or assistant professor

Target group: The course is compulsory for all doctoral students in the discipline of military sociology.

Learning outcomes: After completing the course, the student:

- will understand the philosophical and scientific roots of their own field of research;
- will know how to independently compare and apply different philosophical and scientific concepts and views;
- will know how to independently compare and apply the main research methodologies in their own field of research;
- will know how to apply the theories in their thesis work.

Implementation: The military sociology studies are agreed upon between the supervising professor and the student so that the studies supplement the student's previous studies and/or enhance the student's capabilities required for completing

the thesis. Learning activities may include, for example:

- participating in methodological and theoretical studies arranged by other universities that support the student's research design
- scientific articles
- essays discussing different methodological and theoretical themes.

Assessment: Passing requires completing the tasks agreed with the supervising professor or thesis supervisor in a manner that meets the learning outcomes.

Grading: Pass/Fail

2.7.1.3 Substantive studies supporting thesis work, 10 cr

Course code: STOSO13

Responsibility: Supervising professor or assistant professor

Target group: The course is compulsory for all doctoral students in the discipline of military sociology.

Learning outcomes: After completing the course, the student:

- will know how to classify and interpret general scientific literature in their field;
- will know how to assess and identify their position within their field of research.

Implementation: The military sociology studies are agreed upon between the supervising professor and the student so that the studies supplement the student's previous studies and/or enhance the student's capabilities required for completing the thesis. Learning activities may include, for example:

- courses and seminars
- thesis supervision and teaching
- essays on the scientific literature in the student's field of research
- scientific articles

Assessment: Passing requires completing the tasks agreed with the supervising professor or thesis supervisor in a manner that meets the learning outcomes.

Grading: Pass/Fail

2.7.2 Methodological studies

The minimum extent of the methodological studies is 10 credits. The module contains one compulsory course where students learn about selected research methods

to deepen and expand their capabilities and competencies.

2.7.2.1 Methodological studies in military sociology, 10 cr

Course code: STOSO21

Responsibility: Supervising professor or assistant professor

Target group: The course is compulsory for all doctoral students in the discipline of military sociology.

Learning outcomes: After completing the course, the student:

- will know how to select and apply the data collection methods that best suit their research work;
- will know how to select and apply the analytical methods that best suit their research work;
- will know how to select and apply the research methods that best suit their research work.

Implementation: The military sociology studies are agreed upon between the supervising professor and the student so that the studies supplement the student's previous studies and/or enhance the student's capabilities required for completing the thesis. Learning activities may include, for example:

- courses and seminars
- analyses of research materials and related essays
- teaching tasks or presentations at national and international conferences
- thesis supervision and teaching

Assessment: Passing requires completing the tasks agreed with the supervising professor or thesis supervisor in a manner that meets the learning outcomes.

Grading: Pass/Fail

2.7.3 Postgraduate seminars and critical analysis of dissertations

The minimum extent of the *Postgraduate seminars and critical analysis of dissertations* module is 7 ECTS credits. The module contains two compulsory courses.

2.7.3.1 Postgraduate seminars, 5 cr

Course code: STOSO31

Responsibility: Supervising professor or assistant professor

Target group: The course is compulsory for all doctoral students in the discipline of military sociology.

Learning outcomes: After completing the course, the student:

- will be capable of participating in scientific discussion;
- will know how to analyse scientific text and give related feedback;
- will understand the roles of opponent and respondent and will know how to act in those roles;
- will have experience of performance and scientific argumentation, as well as of the role of opponent and will know how to enhance their personal capabilities in this area.

Implementation: Regular participation in postgraduate seminars facilitated by a professor for a period of at minimum four semesters. The student is expected to give at least three seminar presentations (at the beginning, in the middle and at the end of the thesis process) and to act as the opponent for a minimum of three other seminar presentations.

Assessment: The supervisor assesses the achievement of the learning outcomes on the basis of the seminar presentations and opponent duties.

Grading: Pass/Fail

2.7.3.2 Critical analysis of public examinations, 2 cr

Course code: STOSO32

Responsibility: Supervising professor or assistant professor

Target group: The course is compulsory for all doctoral students in the discipline of military sociology.

Learning outcomes: After completing the course, the student:

- will know how to analyse the strengths and weaknesses of dissertations and public examinations;
- will know how to apply the analysis results in their own dissertation and public examination.

Implementation: The student participates in at least three public examinations approved beforehand by the thesis supervisor. Two of these must be from some other field than the student's own field of research. The student is also required to draft a written report of the events (approx. 5–10 pages).

Assessment: The supervisor assesses the achievement of the learning outcomes on the basis of the written reports.

Grading: Pass/Fail.

2.8 STRATEGIC STUDIES

The main subjects in strategic studies include political sciences, defence policy, international relations and military strategy. The objective of strategic studies is to deepen and expand the student's understanding of factors affecting Finnish national security.

The doctoral studies in strategy are divided into three study modules. The studies are compulsory for all doctoral students in the discipline of strategy.

2.8.1 *Discipline specific studies*

The minimum extent of the discipline specific studies is 23 ECTS credits. The module contains three compulsory courses.

2.8.1.1 Strategic studies as part of military sciences, 3 cr

Course code: STOSTR11

Responsibility: Professor and thesis supervisor

Target group: The course is compulsory for all doctoral students in the discipline of strategy.

Learning outcomes: After completing the course, the student:

- will understand the role of strategic studies as part of military sciences;
- will know how to discuss the fundamental themes in strategic studies and how these connect to the field of military sciences.

Implementation: The student studies the role of strategic studies as part of the military sciences. The main objective of strategic studies centres on the achievement of the strategic objectives of a state or community of states. Military strategy is a special field of strategic studies. It refers to the manner in which military forces are used to achieve the military targets set out by the political leaders of a state or an alliance. Strategic studies in Finland centres on basic research in the field but also produces analyses and forecasts that support the long-term development of the Finnish Defence Forces and serve decision making in the field of Finnish security policy.

The course can be taken in multiple alternative ways, including literary essays, articles and other publications written by the student, learning activities at universities, participating in conferences or seminars, and teaching provided by the student.

The implementation of the course and the related learning outcomes, as well as the assessment and acceptance criteria are determined between the supervisor and the student on the basis of the credit allocation principles described in Appendix 1.

Assessment: Passing requires completing the tasks agreed with the thesis supervisor in a manner that meets the learning outcomes.

Grading: Pass/Fail

2.8.1.2 Studies in philosophy of science and research theory in the field of strategy, 10 cr

Course code: STOSTR12

Responsibility: Professor and thesis supervisor

Target group: The course is compulsory for all doctoral students in the discipline of strategy.

Learning outcomes: After completing the course, the student:

- will understand the role of philosophy of science and theories in strategic studies;
- will know how to develop theory application methods and analyse the role of theories in literature on strategic studies;
- will know how to apply the theories in their thesis work.

Implementation: Philosophical and scientific assumptions structure the way strategic studies approach the object of study. These elements of research that are generally only partly visible but that nevertheless influence the research process are referred to by the concept of *metatheory*. Metatheory helps to position a piece of research in the context of a wider philosophical and theoretical discussion. *Ontology* refers to concepts that relate to being and to the nature of existence, while *epistemology* is the study of the nature, origin and boundaries of knowledge. Ontological and epistemological views provide the foundation for two broad traditions in philosophy of science, namely *explanatory* and *interpretive* research. Explanatory research aims to find laws and causal relationships in the object of study, while the interpretive tradition views social reality as a whole composed of rules and meanings. Strategic studies can be placed within the sphere of either of these traditions.

There are several competing theories and schools in the field of strategic studies. The theories aim to explain regularities and interdependencies in the object of study or interpret meanings associated with the object of study and their functional roles. *On a general level*, the nature of theories such as political realism, neorealism or liberalism, are close to ideological modelling. At this level, the theories can also concern interpretations that aim to re-assess prevailing perceptions through philosophical

and scientific approaches, as in the case of constructivism, critical theory and post-structuralism. One way to categorise the theories applied in strategic studies is to classify them into *rationalist* (realism and liberalism) and *constitutive* (constructivism and post-structuralism) theories. In terms of their philosophical and scientific tradition, rationalist theories rely on explanatory logic and constitutive theories on interpretive logic. *On a more detailed level*, the theories are centred on explaining and interpreting various phenomena and developments and the exercise of power within the sphere of international politics and strategic studies. The theories are applied in research into international systems, interaction between states, and national decision making.

After completing this course, the student will have mastered the philosophical and scientific foundation of strategic studies and the role of theories in strategic studies and will have the ability to apply these in their own thesis work. The course can be taken in multiple ways, including literary essays, articles and other publications written by the student, learning activities at universities, participating in conferences or seminars, and teaching provided by the student.

Assessment: Passing requires completing the tasks agreed with the thesis supervisor in a manner that meets the learning outcomes.

Grading: Pass/Fail

2.8.1.3 Substantive studies supporting thesis work, 10 cr

Course code: STOSTR13

Responsibility: Professor and thesis supervisor

Target group: The course is compulsory for all doctoral students in the discipline of strategy.

Learning outcomes: After completing the course, the student:

- will know how to identify, select and enhance the knowledge and skills required for their research work;
- will know how to search, assess and determine the research materials required for their thesis work;
- will know how to classify and interpret the research materials required for their thesis work;
- will be capable of independently producing new scientific knowledge in their thesis.

Implementation: The subject studies that support the thesis work are completed by researching and analysing studies broadly related to the thesis topic. The study materials may include research literature and other research reports. When selecting

the study materials, particular emphasis should be placed on research that can be considered to have advanced the development of strategic studies and the different research approaches in the field.

The course can be taken in multiple ways, including literary essays, articles and other publications written by the student, learning activities at universities, participating in conferences or seminars, and teaching provided by the student.

The implementation of the course and the related learning outcomes, as well as the assessment and acceptance criteria are determined between the supervisor and the student on the basis of the credit allocation principles described in Appendix 1.

Assessment: Passing requires completing the tasks agreed with the supervising professor or thesis supervisor in a manner that meets the learning outcomes.

Grading: Pass/Fail

2.8.2 Methodological studies

The minimum extent of the methodological studies is 10 credits. The module contains one compulsory course.

2.8.2.1 Methodological studies, 10 cr

Course code: STOSTR21

Responsibility: Professor and thesis supervisor

Target group: The course is compulsory for all doctoral students in the discipline of strategy.

Learning outcomes: After completing the course, the student:

- will understand the role of philosophy of science and theories in strategic studies;
- will know how to select and apply the material collection methods that are best suited to their research project;
- will know how to select and apply the analytical methods that are best suited to their research project;
- will know how to select and apply the research methods that are best suited to their research project.

Implementation: In strategic studies, a 'research method' refers to the methodology guided by the chosen theoretical approach that the researcher applies to formulate a practical method to collect and analyse data in order to resolve their research problems.

Qualitative methods play a key role in strategic studies. Main characteristics of qualitative methods include creative reasoning, source criticism and attempting to use balanced and versatile source materials. A few examples include comparative case studies, the Delphi method (which utilises a panel of experts) and discourse analysis (a form of qualitative textual analysis).

Quantitative methods are primarily applied in strategic studies in the processing of extensive data materials. These often include statistics and database materials. Some examples include the analysis of long time series measuring crisis behaviours at the state level, software-based news analysis and quantitative textual analysis.

Qualitative and quantitative methods can also be applied side-by-side, as in the case, for example, in interviews and surveys, resource analyses focusing on states and alliances, or analysis and forecasting of international development trends.

After completing this course, the student is required to demonstrate that they have a sufficient understanding of the methodological foundation of strategic studies and of the role of different research methods in strategic studies. Furthermore, the student must demonstrate that they are capable of applying different research methods in their own thesis work. The course can be taken in multiple ways, including literary essays, articles and other publications written by the student, learning activities at universities, participating in conferences or seminars, and teaching provided by the student.

Assessment: Passing requires completing the tasks agreed with the supervising professor or thesis supervisor in a manner that meets the learning outcomes.

Grading: Pass/Fail

2.8.3 Postgraduate seminars and critical analysis of dissertations

The minimum extent of the *Postgraduate seminars and critical analysis of dissertations* module is 7 ECTS credits. The module contains two compulsory courses.

2.8.3.1 Postgraduate seminars, 5 cr

Course code: STOSTR31

Responsibility: Professor and assistant professor

Target group: The course is compulsory for all doctoral students in the discipline of strategy.

Learning outcomes: After completing the course, the student:

- will be capable of participating in scientific discussion;

- will know how to analyse scientific text and give related feedback;
- will understand the roles of opponent and respondent and will know how to act in those roles;
- will have experience of performance and scientific argumentation, as well as of the role of opponent and will know how to enhance their personal capabilities in this area.

Implementation: Active participation in postgraduate seminars facilitated by a professor or assistant professor for a period of at least four semesters. The student is expected to give seminar presentations and act as an opponent at other presentations.

Assessment: The supervisor assesses the achievement of the learning outcomes on the basis of the seminar presentations and opponent duties.

Grading: Pass/Fail

2.8.3.2 Critical analysis of dissertations, 2 cr

Course code: STOSTR32

Responsibility: Professor and thesis supervisor

Target group: The course is compulsory for all doctoral students in the discipline of strategy.

Learning outcomes: After completing the course, the student:

- will know how to analyse the strengths and weaknesses of dissertations and public examinations;
- will know how to apply the analysis results in their own dissertation and public examination.
- will know how to assess and discuss the scientific contribution of dissertations and public examinations.

Implementation: The student participates at least in four different public examinations. The student is required to draft a report (approx. 6–8 pages) of each event, in which they should analyse the scientific contribution of the doctoral dissertation and the public examination and assess how they could utilise the results of the analysis in their own dissertation and public examination.

Assessment: The supervisor assesses the achievement of the learning outcomes on the basis of the written reports.

Grading: Pass/Fail

3. SUPPLEMENTARY STUDIES

The minimum extent of the supplementary studies is 15 credits. This degree component consists of two study modules:

1. knowledge of military national defence and Finnish defence principles (max 9 cr);
2. knowledge of one's own field of research and related expertise (1–15 cr).

3.1 Knowledge of military national defence and Finnish defence principles

The *Knowledge of military national defence and Finnish defence principles* module contains three courses.

3.1.1 Finnish defence system and tasks of the Defence Forces, 3 cr

Course code: STT11

Responsibility: The Postgraduate Department together with the subject departments, the Research Unit and the Continuing Education Section of the Department of Academic Affairs.

Target group: The course is compulsory for all doctoral students without a sufficient knowledge of the Finnish defence system or the tasks of the Defence Forces.

Learning outcomes: After completing the course, the student:

- will know how to discuss national military defence;
- will know how to describe the structure and basics of the Finnish defence system;
- will know how to describe the main characteristics of the Defence Administration and the division of duties within the organisation;
- will know how to discuss the objectives, duties and operations of the Defence Forces during peace and war; and
- will know the basics of the Finnish military history.

Implementation: A literature review of publications determined separately according to the student's needs. The publications may include textbooks or other literature and scientific articles. The literature must be separately agreed upon with the thesis supervisor and must amount to around 300–400 pages.

Assessment: Passing requires that the assessor, i.e. the head of the Postgraduate Department or a person appointed by them, deems that that the student has completed the tasks in a manner that meets the learning objectives.

Grading: Pass/Fail

Additional information: Taking the course and the details of the implementation must be agreed upon beforehand with the Postgraduate Department, the relevant discipline and the Research Unit.

Where necessary, the head of the Postgraduate Department appoints another person to act as the course assessor. This person must have sufficient knowledge of the course topic.

3.1.2 Art of war, nature of war and development thereof, 3 cr

Course code: STT12

Responsibility: Postgraduate Department together with the Research Unit and the Department of Warfare.

Target group: The course is compulsory for all doctoral students without a sufficient knowledge of art of war and nature of war.

Learning outcomes: After completing the course, the student:

- will know how to discuss art of war and its current state, development and future outlooks on a general level;
- will know how to describe the special characteristics of Finnish art of war.

Implementation: A literature review of publications determined separately according to the student's needs. The publications may include textbooks or other literature and scientific articles. The literature must be separately agreed upon with the thesis supervisor and must amount to around 300–400 pages.

The head of the Postgraduate Department or a person appointed by them acts as the assessor.

Assessment: Passing requires that the assessor, i.e. the head of the Postgraduate Department or a person appointed by them, deems that that the student has completed the tasks in a manner that meets the learning objectives.

Grading: Pass/Fail

Additional information: Taking the course and the details of the implementation must be agreed upon beforehand with the Postgraduate Department, the Research Unit and the Department of Warfare.

Where necessary, the head of the Postgraduate Department appoints another person to act as the course assessor. This person must have sufficient knowledge of the course topic.

3.1.3 Comprehensive security and crisis management, 3 cr

Course code: STT13

Responsibility: Postgraduate Department together with the relevant discipline and subject departments.

Target group: The course is compulsory for all doctoral students without a sufficient knowledge of the Finnish security environment, comprehensive security or military crisis management.

Learning outcomes: After completing the course, the student:

- will know how to discuss the Finnish security environment;
- will know how to describe the basics and background of the Finnish security and defence policy;
- will know the principles and division of duties relating to comprehensive national defence;
- will know how the critical societal functions are secured;
- will know how to discuss about military crisis management.

Implementation: A literature review of publications determined separately according to the student's needs. The publications may include textbooks or other literature and scientific articles. The literature must be separately agreed upon with the thesis supervisor and must amount to around 300–400 pages.

The head of the Postgraduate Department or a person appointed by them acts as the assessor.

Assessment: Passing requires that the assessor, i.e. the head of the Postgraduate Department or a person appointed by them, deems that that the student has completed the tasks in a manner that meets the learning objectives.

Grading: Pass/Fail

Additional information: Taking the course and the details of the implementation must be agreed upon beforehand with the Postgraduate Department and the Research Unit.

Where necessary, the head of the Postgraduate Department appoints another person to act as the course assessor. This person must have sufficient knowledge of the course topic.

3.2 Knowledge of one's own discipline and related expertise

The module *Knowledge of one's own discipline and related expertise* contains one course, the extent of which depends on the student's existing level of knowledge, as

well as on the student's need to obtain sufficient competencies for the initiation of their thesis process in the chosen discipline.

3.2.1 Research competencies in the chosen discipline, 1–15 cr

Course code: STT21 (1 cr), STT22 (2 cr), STT23 (3 cr), STT24 (4 cr), STT25 (5 cr), STT26 (6 cr)

Responsibility: Thesis supervisor and the relevant subject department.

Target group: The course is compulsory for all doctoral students who are deemed to have insufficient knowledge and research competencies within the field of research of the thesis.

Learning outcomes: After completing the course, the student:

- will be capable of initiating their thesis process within the chosen discipline;
- will know the basics of research within the chosen discipline, as well as of the relevant research traditions and methods;
- will have the ability to apply the selected research methods in their own thesis process.

Implementation: The methods of study applied in the course help to deepen the student's knowledge about the chosen discipline and field of research and to ensure that the student achieves the required research competencies.

The method of implementation must be agreed upon beforehand with the thesis supervisor. The course can be taken in a variety of ways, such as by writing literary essays, taking examinations, participating in courses the contents of which comply with the learning outcomes, or other learning activities that promote the writing of the doctoral thesis and support the related research work.

Assessment: Passing requires completing the tasks agreed with the supervising professor or thesis supervisor in a manner that meets the learning outcomes.

Grading: Pass/Fail

Additional information: Detailed contents of the course are determined according to the student's personal needs and are planned together with a professor in the student's discipline and the thesis supervisor. The student must agree upon the implementation method and timetable with the thesis supervisor beforehand.

The total credits awarded for the course and the relevant course code are entered into the study administration system.

APPENDICES

1. Common credit allocation principles in the Doctor of Military Sciences degree programme

The common credit allocation principles presented in this appendix should be applied, where possible, to all learning activities included in the doctoral degree in order to keep the workload reasonable and to ensure equal and fair treatment of students.

If a learning activity is assessed to significantly exceed the estimated average workload due to the mental burden involved, challenging nature the activity or some other justified reason, the student may be awarded with more ECTS credits for the activity than specified here.

If an activity is deemed challenging due to, for example, the level of difficulty of the literature or mathematical equations or complicated or complex theories involved, the credit allocation guidelines may be interpreted more loosely (e.g. fewer pages may be required to obtain the credits).

However, where the credit allocation deviates from the common principles, it must be ensured that the credits allocated are consistent and comparable with the common allocation principles specified here.

Further instructions regarding the estimation and determination of deviating allocation principles and ECTS credits are provided in section F (Allocation of credits and recognition of previously acquired competencies) of this Study Guide.

Credit allocation principles

- 1. Literary essay, review, report, learning journal or other written assignment**
 - approx. 8 pages = 1 ECTS credit (27 h)
- 2. Written or oral examination**
 - approx. 300 pages of text in the student's native language = 1 ECTS credit (27 h)
 - approx. 150 pages of text in a foreign language = 1 ECTS credit (27 h)
- 3. Participating in methodological and theoretical studies arranged by other universities that support the student's research design**
 - the number of credits is determined according to the criteria of the organising university

4. A non-technical article (working paper) published in a non-peer-reviewed publication (e.g. working paper in publication series of NDU subject departments)

- approx. 15–20 pages of referenced text with scientific argumentations = 2 ECTS credits

5. A scientific article (research report) published in a peer-reviewed publication (e.g. research report in publication series of NDU subject departments or a journal article)

- approx. 15–20 pages of referenced text with scientific argumentations = 3 ECTS credits

NOTE: Such articles may not be included in the dissertation in the case of a compilation thesis.

6. Teaching and thesis supervision

NOTE: Credits awarded for teaching and thesis supervision may not exceed 4 ECTS credits.

6.1) Teaching

Individual lectures = no credits

Planning, preparation and implementation of a course or workshop: 27 hours of work = 1 ECTS credit

6.2) Thesis supervision

Supervision of a Bachelor's thesis (one supervisor, 3 seminar sessions, guidance between seminars, thesis assessment and Turnitin check) = 1 ECTS credit

Supervision of a Master's thesis or a thesis included in the General Staff Officer's degree as the secondary supervisor (3 seminar sessions, guidance between seminars, participating in the thesis assessment) = 1 ECTS credit

Supervision of a Master's thesis or a thesis included in the General Staff Officer's degree as the primary supervisor (3 seminar sessions, guidance between seminars, thesis assessment and Turnitin check) = 2 ECTS credits

7) Participating in a national or international conference

- Attendance without giving a presentation = 1 ECTS credit (requires drafting a learning journal of the event)
- Drafting an abstract and giving a presentation = 2 ECTS credits
- Drafting an abstract and giving a presentation and writing an article for the conference catalogue = 3 ECTS credits

NOTE: The article may not be included as such in the dissertation.

NOTE: Credits awarded for participating in conferences may not exceed 6 ECTS credits.

8) Postgraduate seminars = 3–5 ECTS credits

Regular participation in postgraduate seminars facilitated by professors for a period of at least four semesters. The student is expected to give at least three seminar presentations (at the beginning, in the middle and at the end of the thesis process) and to act as the opponent for a minimum of three other seminar presentations.

9) Critical analysis of dissertations and public examinations = 2 ECTS credits

The student is expected to participate in at least three public examinations approved by the supervising professor or to analyse a minimum of three dissertations. The student is also required to draft a written report (approx. 5–10 pages) of the public examinations or the dissertation analyses.

10) Mathematical studies

In the case of mathematical studies, the above credit allocation principles are applied taking account of the criteria and spirit of the standards and regulations on credit allocation.

2. Drafting a personal study plan

The personal study plan (PSP) for the Doctor of Military Sciences degree is prepared using the template provided enclosed (cover page and five sheets of tables).

All PSPs must be drafted or updated according to this template. In addition to the planning of personal studies, the PSP template is also used for the approval and reporting of completed studies, as well as for monitoring of the progress of studies.

Further instructions on the approval and updating of a PSP, the approval, reporting and recording of completed studies, and monitoring of the progress of studies are provided in section F (Allocation of credits and recognition of previously acquired competencies) of this Study Guide.

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