Course Syllabus

Tactical and Ethical Aspects of Autonomous Systems

Taktiska och etiska aspekter på autonoma system

Course Code	2FS036	**Main Field of Study**	Systems Science for Defence and Security
Valid from Semester	Autumn 2023	**Department**	Department of Systems Science for Defence and Security
Education Cycle	Advanced level	**Subject**	Systems Science for Defence and Security
Scope	7.5	**Language of Instruction**	The teaching is conducted in English.
Progression	A1N	**Decided by**	The Research and Education Board's Course Syllabus Committee at the Swedish Defence University
Grading Scale	Fail, Pass, Pass with Distinction	**Decision date**	2022-08-23
Revision	1.0		

Entry Requirements

Passed courses of at least 180 credits that include

- at least 7,5 credits in the field of Defence, Crisis management and Security,

- written thesis project including of at least 15 credits

and knowledge corresponding to English 6 (English B).

Course Content and Structure

The purpose of the course is to deepen the understanding of ethical and tactical aspects on the use and design of autonomous systems in the context of defence and security. The course cover the following areas:

Autonomous systems in military operations – ethics and tactics, overall. What exists, overall on ethical and tactical issues regarding these and future autonomous systems. This includes the debate on autonomous systems, including the UN discussions on a ban. These provide a basis for the ability to describe and categorize ethical and tactical problems linked to autonomous systems.

Tactics and autonomy definitions: Conceptual analysis linked to tactics and autonomy: conceptual analysis and philosophy linked to autonomous systems in military use including definitions in general as well as definitions of autonomy and tactics. These provide a basis for the ability to analyse and argue for different positions in related to tactical and ethical aspects of autonomous systems.

Technology and tactics. The impact of technology on tactics in general and autonomous systems linked to military capability.

Autonomous systems and control (command and control): the human being in the decision loop, meaningful human control, the influence of autonomous systems on tactics in terms of control. This provides a basis for the ability to evaluate arguments in the debate.

Tactical competence and the moral agent (moral agency). Linked to autonomous systems and practical wisdom: How Aristotle's idea of virtues and practical wisdom can contribute to the understanding of tactical competence.

The overall idea is that the students familiarize themselves with the debate, delve into the problems, analyse and evaluate, in order to put the building main blocks together.

Intended Learning Outcomes

After completing the course, the student is expected to be able to:

Knowledge and understanding:

- Describe and categorize tactical and ethical aspects of the use of autonomous systems.

Competence and skills

- Analyze and argue for different positions regarding tactical and ethical aspects of autonomous systems.

Evaluation abilities and approach

- Evaluate arguments in the debate on tactical and ethical aspects of autonomous systems.
- Apply a critical scientific approach to problematize the relationship between professional practice and science.

Type of Instruction

Seminars

Lectures

Assessment

Home Examination

Scope: 7.5

Grading Scale: Fail, Pass, Pass with Distinction

The course is examined through a written unsupervised assignment.

The examiner may decide that supplementary work is required in order for a pass grade to be achieved.

Examination papers submitted late will not be graded, unless there are special reasons, which have been approved by the examiner.

Supplementary assignments are to be submitted no later than five working days after the notification of results and the supplementary assignment for the examination in question, unless there are special reasons, which have been approved by the examiner.

Grading

Grades are set according to a three-grade scale: Pass with destinction (VG), Pass (G) and Fail (U).

A pass (G) requires a pass (G) for the written unsupervised assignment.

A pass with destinction (VG) requires a pass with destinction (VG) for the written unsupervised assignment.

Restrictions in Number of Examinations

There is no limit on the total number of examination opportunities.

Restrictions Concerning Degree

The course cannot be included in a degree with another course whose content fully or partially corresponds to the content of this course.

Transitional Provisions

When a course is no longer provided or when the content of a course has been significantly altered, the student/participant retains the right to be examined in accordance with this course syllabus once per term during a three-term period.

Miscellanous

On the completion of the course, an evaluation will be conducted under the auspices of the course director, which will form the basis for any changes to the course.

If the student has a decision from the Swedish Defence University stating the need for extra pedagogical support because of a functional disability, the examiner may decide on alternative examination forms for the student.

Reading List

Tactical and Ethical Aspects of Autonomous Systems

Taktiska och etiska aspekter på autonoma system

Course Code	2FS036
Revision	1.0
Reading List Valid from Date	2020-01-22
Reading List Decided Date	2020-01-22

(A selection from these books and articles will be made)

Altmann, J. & Sauer, F. (2017) Autonomous Weapon Systems and Strategic Stability, Survival, 59:5, 117-142,

Amoroso, D. and Tamburrini, G. (forthcoming). What makes “meaningful” the human control over weapons systems? in Giacomello, Moro and Valigi (eds.), Technology and International Relations: The New Frontier in Global Power, Edward Elgar

Van Creveld, Martin. (2010) Technology and war: from 2000 B.C. to the present. New York: The Free Press. P. 1.

Finkel, M. (2011). On Flexibility: Recovery from Technological and Doctrinal Surprise on the Battlefield. Stanford University Press.

Hew, P.C. (2016), ‘Preserving a combat commander’s moral agency: The Vincennes Incident as a Chinese Room’, Ethics and Information Technology, 18, pp. 227-235

Johansson, L. (2011). Is it morally right to use UAVs in war? Philosophy and Technology, vol. 11, issue 3, 279-291.

Kraut, Richard, "Aristotle's Ethics", The Stanford Encyclopedia of Philosophy (Summer 2018 Edition), Edward N. Zalta (ed.), URL = <https://plato.stanford.edu/archives/sum2018/entries/aristotle-ethics/>.

Margulies, P. (2017), ‘Making autonomous weapons accountable: command responsibility for computerguided lethal force in armed conflicts’, in J.D. Ohlin (ed), Research Handbook on Remote Warfare, Cheltenham UK and Northampton, MA, USA: Edward Elgar, pp. 405-442

Olsthoorn, P. (2011). Military Ethics and Virtues. An interdisciplinary approach for the 21st century. Cass Military Studies, New York.

Santoni de Sio, F., van den Hoven, J. (2018). Meaningful Human Control over Autonomos Systems: A Philosophical Account. Frontiers in Robotics and AI. Vol 5, art. 15.

Saxon, D. (2016). “Autonomous drones and individual criminal responsibility,” in Drones and Responsibility: Legal, Philosophical, and Socio-Technical Perspectives on the Use of Remotely Controlled Weapons, eds E. Di Nucci and F. Santoni de Sio (Routledge), 17–46.

Scharre, P. (2018) Army of None – Autonomous Weapons and the Future of War. Norton, New York.

Sparrow, R., Lucas, G. (2016). When Robots rule the waves? Naval War College Review. Vol 69, No. 4.

Sörenson, K. and Widén, J. (2014). Irregular Warfare and Tactical Changes: The Case of Somali Piracy. Terrorism and Political Violence, 26:399–418, p. 402.