

The background of the entire page is a grayscale aerial photograph of a city, likely Prague, showing a dense urban area with many buildings and a network of streets. The image is slightly blurred and has a high-contrast, almost pixelated appearance.

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# Professional Simulation & Wargaming

Course Syllabus

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## ANNOTATION

Simulation and gaming are almost ever-present in our lives. From games children play among themselves to board games and role-playing games including famous Dungeons & Dragons to compute games a multi-billion globe spanning industry. While the games are most commonly associated with pleasure, they are also an important tool for professionals of many walks of life. They are valuable tools for teaching and instruction, enabling learners to learn by doing and experimenting in a safe environment. They are instruments of brainstorming and designing new policies and exploring various courses of action. Finally, they are increasingly also becoming tools of research. The aim of this course is to introduce students to various uses of professional simulations and games, enabling them to better understand those tools, participate in them, analyse and interpret their results and finally, through trying to create a professional game, get a glimpse of how such games can be designed.

## COURSE PHILOSOPHY

The design of the course is not based on frontal lectures, with subsequent exams based on learning the lecture content. Lectures are among the least effective methods of learning.

Instead, the course is designed around creating the best possible environment for **the students to learn and develop their knowledge of the course subject on their own, through reading and hand on experience** with various examples of professional simulations and gaming. To that end:

- The lectures are conceived more as an introduction to the given topic, providing a necessary overview of the subject and enabling students to further their understanding of the particular topic through further reading.
- Reading of the required readings is, as the term suggests, required, but reading beyond the required readings is encouraged. The student is welcome to ignore the recommended readings and find their own sources to develop their knowledge further.
- Students will play games in each class to get greater experience with varied serious games and will be required to reflect on those examples afterwards.
- As the professional gaming depend on ability to translate real world processes into a game, it is absolutely necessary for students to study the real world mechanism for their game on their own.
- To make the readings less lonely and more purposeful exercise, the classes feature ample time for students to discuss their questions or comments on both required reading and other relevant items with the lecturer and the rest of the class.
- The students are encouraged to develop greater interest in some aspect of the course subject. This will make the class discussion more interesting and individual contributions to discussions complementary. The final exam is designed to encourage such specialisation.

## COURSE STRUCTURE

### REQUIREMENTS & GRADING

The final grade will be based on three elements of the student's grade: Active participation, game reports, and final project. Each of the parts is described in detail below. Students need to score more than 50 % on each of the three elements.

Their relative weight is as follows:

- 20 % Active participation
- 30 % Reports
- 50 % Final project
  - 40 % Created simulation/game quality
  - 10 % Review of the other team's creation

The final number of points is converted to the final grade through the standard method (see the table to the right).

Points	Grade
91<	A
81-90	B
71-80	C
61-70	D
51-60	E
<50	F

### Active participation

Active participation will be graded at the end of the semester after the last of the classes. It will be based on overall attendance and – primarily – on the active contribution and participation of the given student in discussions held in the classroom. Reading the required readings and reflecting upon them in class is sure way to get the best grade in active participation.

### Reports

Students are required to submit reports on the examples of simulation & gaming they tried in the classroom. Specific requirements for each report will be available on Moodle. Overall students will be reflecting upon the game design, its relation to real world & its outcome from various perspectives, with the emphasis on possible shortcomings and suggesting changes. While the reports form will differ depending on the simulation/game in question, they will be roughly 600 words long. Reports are submitted by individual students.

### Final project

The final project consists of group effort to design their own simulation or game. Groups of students will be tasked with designing their own professional simulation/game.

Groups will be created by the second class of the semester through Moodle.

The idea/aim of the final project has to be clear and consulted before or during the 4<sup>th</sup> class.

The first draft of the final project has to be submitted in Moodle before the 5<sup>th</sup> class of the semester. During the 5<sup>th</sup> class, the teams will have an opportunity to playtest their own game and discuss it with instructors. The purpose of the playtest is to refine the game mechanics and instructions.

The final project has to be submitted before the final (6<sup>th</sup>) class. During the last class, each group will try to play another team's simulation. Each team will subsequently write a review of the simulation.

Both draft and the final submission are to be in written form and must include:

- Intro outlining the purpose of the simulation
- Instructions/rules for the game  
(*that are clear enough for the game to be played without the creators*)
- Design of physical components of the simulation/game if there are any
- Study on the real-world subject of the game, linking the game design to a real world concepts and theories, including scholarly literature references (as Annex 1)
- Commentary explaining the design process, outlining other products used as an inspiration & commenting on and explaining the design decisions (as Annex 2).

The game itself must conform to the conditions set out in detail in the Moodle and during the first class, primarily with regard to number of players and maximum playtime.

## **COURSE POLICIES**

### **Moodle**

The course is accompanied by a course page in Moodle, where the students will find syllabus, detailed instructions and where they will submit all their assignments.

The link to the Moodle is: <https://dl1.cuni.cz/course/view.php?id=17277>

The key for self-enrolment will be provided to students after registration for the course in the Student Information System.

### **Attendance**

Attendance is required to complete the course, given its specific nature. The students are expected to actively participate in the discussion in the classroom, playing the games and participating in final group project. In case of health or other issues that would lead to prolonged absence, please get in touch with the lecturer to consult whether or in what way it is possible to still complete the course.

### **Communication**

The best way to solve any issues is to discuss them personally, during the lesson if they may be relevant for all the students, and just before or just after the class if they are personal or relevant purely for the individual student.

Emails are perfectly fine as a way of communication, but they should be to the point and clearly state what is requested. Also, please keep in mind that a quick response cannot always be guaranteed. Also, do not expect the answer to Friday evening emails sooner than on Monday.

## **AI**

Students are free to utilize AI tools in helping them design their final project. Overall, legitimate use of AI tools in this course is conditioned on:

- Clear attribution/recognition of AI tool use and its input (be it structure, proofreading, suggestions, generated text). Unacknowledged use of AI text will be considered to be plagiarism.
- Any submitted works without meaningful student's intellectual contribution will be marked down significantly.
- Students carry responsibility for the submitted work irrespective of whether they used AI. AI may make errors, but it is upon the students (AI users) to recognize and correct those mistakes.

## COURSE STRUCTURE IN DETAIL

### 1. Introduction & history

- Content:
  - Course overview
  - Topic introduction
  - Overview of historical development
  - Simulation vs. gaming
  - Online vs. desktop simulations
  - Types of games
  - Gaming for fun vs. gaming for work
  - PC games, boardgames and simulations
- Game:
  - Short Kartenspiel game as designed by Philip Sabin
- Required reading pre-class
  - Syllabus
- Required reading post-class
  - Banks, D. E. (2024). The Methodological Machinery of Wargaming: A Path toward Discovering Wargaming's Epistemological Foundations. *International Studies Review*, 26(1), viae002. <https://doi.org/10.1093/isr/viae002>
  - Chapter 1 & 2 from UK MoD (2017). Wargaming Handbook. GOV.UK [https://assets.publishing.service.gov.uk/media/5a82e90d40f0b6230269d575/doctr ine\\_uk\\_wargaming\\_handbook.pdf](https://assets.publishing.service.gov.uk/media/5a82e90d40f0b6230269d575/doctr ine_uk_wargaming_handbook.pdf)
- Recommended reading post-class:
  - Sabin, P. (2012). *Simulating War: Studying Conflict through Simulation Games*. Bloomsbury Publishing.
  - Brynen, R. (2015). Role-play games and simulations in International Relations: an overview. *Revista Española de Desarrollo y Cooperación*, 35, 15-26.
  - Smith, R. (2010). The long history of gaming in military training. *Simulation & gaming*, 41(1), 6-19.
  - Kainikara, S. (2003). *Effective wargaming: Impact of the changing nature of warfare*. Aerospace Centre.

## 2. Simulation for teaching and learning

- Content:
  - Advantages of simulation and gaming for teaching and learning
  - History of (war)gaming as preparation tool
  - Practical examples
  - MUN
- **Deadline for group selection**
- Game:
  - Guns-versus-butter game
- Required reading pre-class
  - Rules for the game (see Moodle)
- Required reading post-class
  - DiCicco, J. M. (2021). The Security Dilemma Exercise: Hawks, Doves, and Moles. *Journal of Political Science Education*, 40–50. <https://doi.org/10.1080/15512169.2020.1795872>
  - Lean, J., Moizer, J., Derham, C., Strachan, L., & Bhuiyan, Z. (2021). Real world learning: Simulation and gaming. *Applied Pedagogies for Higher Education: Real World Learning and Innovation across the Curriculum*, 187-214.
- Required report post-class:
  - Reflection on the security dilemma game
- Recommended literature
  - McCall, J. (2022). *Gaming the Past* (2nd edition). Routledge.
  - Smith, R. (2010). The long history of gaming in military training. *Simulation & gaming*, 41(1), 6-19.
  - Ruben, B. D. (1999). Simulations, games, and experience-based learning: The quest for a new paradigm for teaching and learning. *Simulation & Gaming*, 30(4), 498-505.
  - Sabin, P. (2012). Educational utility (Chapter 4) In: *Simulating war: Studying conflict through simulation games*. Bloomsbury Publishing.

## 3. Simulation for policy making

- Content:
  - Uses of games for policy
  - Understanding and misunderstanding of policy simulations
- Game:
  - TBD
- Required reading pre-class
  - Game rules
- Required report post-class
  - Report on insights on possible policies based on the game
- Required reading post-class
  - Preferably, read in the order of 1) *Shlapak & Johnson (2016)*, 2) *Kofman (2016)* and *Mueller et al. (2016)*, in order to trace the debate chronologically and see arguments



in favor and against wargaming in the context of Russia threat to NATO. Then reading *RAND (2023)* after the invasion of Ukraine will provide deeper insights and lessons for wargaming.

- Shlapak, D., & Johnson, M. (2016). *Reinforcing Deterrence on NATO's Eastern Flank: Wargaming the Defense of the Baltics*. RAND Corporation. <https://doi.org/10.7249/RR1253>
- Kofman, Michael. (2016). Fixing NATO Deterrence in the East, or How I Learned to Stop Worrying and Love NATO's Crushing Defeat by Russia. War on the Rocks. <https://warontherocks.com/2016/05/fixing-nato-deterrence-in-the-east-or-how-i-learned-to-stop-worrying-and-love-natos-crushing-defeat-by-russia/>
- Mueller, Karl & David Shlapak, Michael Johnson, David Ochmanek (2016). In Defense of a Wargame: Bolstering Deterrence on NATO's Eastern Flank. War on the Rocks. <https://warontherocks.com/2016/06/in-defense-of-a-wargame-bolstering-deterrence-on-natos-eastern-flank/>
- Recommended reading
  - RAND (2023). Revisiting RAND's Russia Wargames After the Invasion of Ukraine: Summary and Implications. RAND Corporation. <https://doi.org/10.7249/RR2031-1>
  - Kainikara, S. (2003). *Effective wargaming: Impact of the changing nature of warfare*. Aerospace Centre.
  - Joldersma, C., & Geurts, J. L. (1998). Simulation/gaming for policy development and organizational change. *Simulation & Gaming*, 29(4), 391-399.
  - Gandziarowska-Ziotecka, J., & Stasiak, D. (2019). Simulation and Gaming for Policy Advice. *Handbuch Politikberatung*, 563-582.
  - Mayer, I. S. (2009). The gaming of policy and the politics of gaming: A review. *Simulation & gaming*, 40(6), 825-862.

#### **4. Wargaming as a research method – collecting and analysing the data**

- Content
  - Experimental methods and gaming
  - Logics of inference
  - Problems (replicability)
- **Deadline: Aim & theme of group project**
- Game:
  - Wargame of Drones
- Required reading pre-class
  - Game rules
- Required report post-class:
  - Reflection on the drones wargame
- Required reading post-class
  - Bartels E. M. (2019). The Science of Wargames: A discussion of philosophies of science for research games. *Workshop on War Gaming and Implications for*

*International Relations Research.*

[http://www.elliebartels.com/uploads/1/1/0/6/110629149/bartels-the\\_science\\_of\\_wargames\\_nwc\\_mit.pdf](http://www.elliebartels.com/uploads/1/1/0/6/110629149/bartels-the_science_of_wargames_nwc_mit.pdf)

- Lin-Greenberg, E. (2022). Wargame of Drones: Remotely Piloted Aircraft and Crisis Escalation. *Journal of Conflict Resolution*, 66(10), 1737–1765. <https://doi.org/10.1177/00220027221106960>
- Recommended reading
  - Lin-Greenberg, E., Pauly, R. B. C., & Schneider, J. G. (2022). Wargaming for International Relations research. *European Journal of International Relations*, 28(1), 83–109. <https://doi.org/10.1177/13540661211064090>
  - Schneider, J., Schechter, B., & Shaffer, R. (2022). A Lot of Cyber Fizzle But Not A Lot of Bang: Evidence about the Use of Cyber Operations from Wargames. *Journal of Global Security Studies*, 7(2), ogac005. <https://doi.org/10.1093/jogss/ogac005>

## 5. Trial game

- Game:
  - Your own designed game
- **Deadline: First complete draft of the game**

## 6. Presentation and experimentation

- **Deadline: Final complete game submission**
- Game:
  - Assigned game of another team
- Required reading pre-class
  - Rules for the assigned game
- Required report post-class
  - Review of the game