

## **IV128 Online Communication from a Social Science Perspective**

### Teachers:

prof. PhDr. David Šmahel, Ph.D. ( [davs@mail.muni.cz](mailto:davs@mail.muni.cz) )

Mgr. Ondřej Sotolář

Extent and Intensity: 1/1/0, 4 credits

Zoom link: <https://cesnet.zoom.us/j/6820589922>

### Course objectives:

The aim of the course is to introduce the basic theories of online communication and online communication research, which will enable students of computer science to become more aware of the specifics of this field. They can use this knowledge when creating their own systems and online communication tools. In practical terms, this knowledge will help students to understand some of the pitfalls of online communication, enabling them to communicate better and more efficiently, like in virtual teams and other work groups. After completing this course, they will be familiar with theories dealing with online communication, privacy on the internet, online addictions, usable security, phishing, online research methods. They will also be able to describe how context, perception, and personality characteristics affect the behavior of internet users in various contexts, such as the security domain.

### Credit Requirements:

1. 80% attendance (minimum of 11 lessons out of 14).
2. Presentation of a selected topic – Group assignment. The topics are to be determined by the teacher at the beginning of the course. Students will prepare a 20min presentation (+ time for discussion with other students) on a given topic based on academic literature. For further details on the presentation format, see Presentation Instructions below.
3. Written assignment - Individual assignment, minimum length: 4 standard pages (1 standard page = 1,800 characters, including spaces). Students will write a paper on a selected topic from the entire course, focusing primarily on comparing their own experience to the academic literature (at least 5 academic sources/articles must be used).

### **Presentation instructions:**

- For each lesson, one topic related to the subject of the lecture is provided - see below.
- Presentation of the selected topic is done by a group of 2-3 students.

- The duration of the presentation is 20 minutes + 10 minutes for discussion. All group members must be actively involved in the presentation.
- The presentation must be submitted to the IS Homework folder no later than 2 days before the presentation date. Failure to do so in time is a reason for not granting credit for the course (except for the first subject, where the presentation can be submitted one day before the presentation date).
- The presentation date cannot be changed or moved, except for extraordinary reasons.
- Find at least 4 high-quality foreign academic (not Czech or Slovak!) resources on the topic, based on which you will prepare a synthesis of the information for your presentation.
- The presentation must fulfill all the requirements listed below. In the case of a substandard presentation, the group will prepare a new topic and present it during the last lesson.

Academic sources are articles from academic peer-reviewed journals or academic book chapters. Use the available electronic resources to search:

<https://ezdroje.muni.cz/prehled> . Suitable publications can be found primarily in the Web of Science database.

#### Content of the presentation:

1. General introduction of the topic - what needs to be said to keep the listener in the picture, what are the basic definitions related to that topic.
2. What did you notice, what caught your attention, and what surprised you regarding the selected topic?
3. Examples for other students – aim to explain the topic to other students through practical examples, such as where to find it on the internet, what software is used, which sites, which blogs...
4. What do you think of when you think about your chosen topic from the IT point of view - how can the information be used in practice?

#### Themes of seminars:

- 1) 18.2. Introduction and organization of lessons. Introduction of presented themes.
- 2) 25.2. READING LECTURE: Communication theories and the specifics of online communication. Introduction of basic concepts in the context of online communication: anonymity, disinhibition, self-disclosure.

#### Reading:

- Walther, J. B. (2011). Theories of computer-mediated communication and interpersonal relations. *The handbook of interpersonal communication*, 4, 443-479.

[http://my.spc.edu.ph:70/e\\_books/Arts%20and%20Sciences/AB%20English/Computer%20Mediated%20Communications.pdf](http://my.spc.edu.ph:70/e_books/Arts%20and%20Sciences/AB%20English/Computer%20Mediated%20Communications.pdf)

- The Online Disinhibition Effect. IN Suler, J. (2004). *The Psychology of Cyberspace*.

<http://www-usr.rider.edu/~suler/psycyber/disinhibit.html>

- The Psychology of Text Relationships IN Suler, J. (2004). *The Psychology of Cyberspace*.

<http://www-usr.rider.edu/~suler/psycyber/psytexrel.html>

- 3) 4.3. Online addictions: Origin and definition of online addiction, basic terminology, prevalence, how to identify online addiction, behavioral addictions, results of current research.

Presentation theme: Online addictions and SW design: How can design impact the shape of online addictions? How to minimize online addictions by SW design?

Reading:

- Vondrackova, P., & Šmahel, D. (2019). Internet addiction in context. In *Advanced Methodologies and Technologies in Artificial Intelligence, Computer Simulation, and Human-Computer Interaction* (pp. 551-562). IGI Global.
- Online Porn Addiction: What We Know and What We Don't—A Systematic Review

<https://www.mdpi.com/2077-0383/8/1/91/htm?fbclid=IwAR2Mn2LSAUToSvVby186taSLXr4N9yaKEOnWjOZDIo8r-TdnyHYm93OINA4>

- 4) 11.3. Data anonymization (Mgr. Ondřej Sotolář)

Principles of personal data protection under GDPR, current topics in personal data anonymization for tabular and full text data. Privacy models: k-anonymity, differential privacy.

Presentation theme:

Personal data and fundamental principles and methods of data anonymization. What does the GDPR say about data protection? What data can we collect and store under what conditions? What general data protection should we employ?

Reading:

Opinion 05/2014 on Anonymisation Techniques - commentary of GDPR:

[https://ec.europa.eu/justice/article-29/documentation/opinion-recommendation/files/2014/wp216\\_en.pdf](https://ec.europa.eu/justice/article-29/documentation/opinion-recommendation/files/2014/wp216_en.pdf)

- 5) 18.3. Internet mediation and software: basic principles of family mediation, role of SW in this mediation, basic types of software, and possibilities for development.

Presentation theme: Parental mediation and SW: What types of SW do we have? How do parents use this SW? What are the factors of usage or non-usage of parental SW?

Reading:

- Read about parental mediation and how often parents use parental controls in this report - the chapter Mediation from page 106:

<http://www.lse.ac.uk/media-and-communications/assets/documents/research/eu-kids-online/reports/EU-Kids-Online-2020-March2020.pdf>

- Read about parental controls and advices for parents, researchers and industry:

<https://pdfs.semanticscholar.org/22c6/86cd0093588106518d43973929264bfdc2ef.pdf>

- Read about a value sensitive design approach to parental software:

[https://dl.acm.org/doi/pdf/10.1145/2771839.2771917?casa\\_token=n-moirHJxukAAAAA:V7S7aBxY9\\_ss2Tm1wQXPoDw0q986LzZIfve7vPsCIKEWeTfvdnGUUc1pHlnWihKnSaB4JgiK7UC4pA](https://dl.acm.org/doi/pdf/10.1145/2771839.2771917?casa_token=n-moirHJxukAAAAA:V7S7aBxY9_ss2Tm1wQXPoDw0q986LzZIfve7vPsCIKEWeTfvdnGUUc1pHlnWihKnSaB4JgiK7UC4pA)

- 6) 25.3 Online research methods: how to explore the online environment and ICT users, introducing the basic types of online methods. Innovative methods: Ecological Momentary Assessment (EMA).

Presentation theme: How can we use social science research methods in informatics? Usage of online surveys OR experimental methods OR online user testing in informatics.

Reading:

Do current user testing practices meet the needs of the new interactive paradigms?

<https://dl.acm.org/doi/pdf/10.1145/3471391.3471416>

- 7) 1.4. Phishing. Psychological perspective of the principles used in phishing; prevention.  
Presentation theme: Fraud emails: Nigeria letters, scam 419  
Reading:
- Phishing threat avoidance behaviour: An empirical investigation:  
[https://www.sciencedirect.com/science/article/pii/S0747563216301236?casa\\_token=Sd8HtopphqAAAAAA:24qxBuv7JwdHZp-kFmjrsrIV5FhXEfFotH8BGxTu84u\\_Usa\\_tbrLN3Ypm0YjfNrPBfKSMzqZhmLo](https://www.sciencedirect.com/science/article/pii/S0747563216301236?casa_token=Sd8HtopphqAAAAAA:24qxBuv7JwdHZp-kFmjrsrIV5FhXEfFotH8BGxTu84u_Usa_tbrLN3Ypm0YjfNrPBfKSMzqZhmLo)
  - Why phishing still works: User strategies for combating phishing attacks:  
[https://www.sciencedirect.com/science/article/pii/S1071581915000993?casa\\_token=pXQsD\\_BCXEIAAAAA:1rsfVPK8m8KW2inIf7W8wR-l-OGuBOMAlsp\\_1S0ZoWKQ8XKJk9oDOgSZDNLvuHkzlfwk1X8bdaBg](https://www.sciencedirect.com/science/article/pii/S1071581915000993?casa_token=pXQsD_BCXEIAAAAA:1rsfVPK8m8KW2inIf7W8wR-l-OGuBOMAlsp_1S0ZoWKQ8XKJk9oDOgSZDNLvuHkzlfwk1X8bdaBg)
- 8) 8.4. Privacy on the internet and online risks from social science perspectives. Motivations for sharing personal information on the internet in different environments, concerns about privacy, and misuse of personal data.  
Presentation theme: Privacy, personal data and misuse of personal data from the perception of ICT users  
Reading:
- Self-disclosure versus self-presentation on social media  
<https://www.sciencedirect.com/science/article/pii/S2352250X19300685>
- 9) 15.4 EASTER HOLIDAYS.
- 10) 22.4. User and ICT security: User study - authentication methods. Results of the qualitative and quantitative research on authentication methods. (Mgr. Agáta Kružíková)  
Presentation theme: The role of the user in the context of ICT security  
Reading:
- Schmidt, A. (2019). Don't blame the user: toward means for usable and practical authentication. *Interactions*, 26(3), 73-75.  
[https://dl.acm.org/doi/pdf/10.1145/3320509?casa\\_token=i-zuBRfvWPsAAAAA:wLMRqURn2nAe\\_bfFjGKp3Izox2yOK0r7usk\\_anRhpVrAhYmyCmRBfLOJ07bZ273HIFDYMWH5sd4MWw](https://dl.acm.org/doi/pdf/10.1145/3320509?casa_token=i-zuBRfvWPsAAAAA:wLMRqURn2nAe_bfFjGKp3Izox2yOK0r7usk_anRhpVrAhYmyCmRBfLOJ07bZ273HIFDYMWH5sd4MWw)

- Schaffer, K. (2019). Rethinking authentication. IT professional, 21(6), 52-55.  
[https://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=8896131&casa\\_token=bGu3PaFillIAAAAA:InfzdUYzxfHaRqgNfzBhL30Cd9H4nzNPf5Ia9JJETV7Gomje349FrslJrAAooooEVuIRnZoc24A&tag=1](https://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=8896131&casa_token=bGu3PaFillIAAAAA:InfzdUYzxfHaRqgNfzBhL30Cd9H4nzNPf5Ia9JJETV7Gomje349FrslJrAAooooEVuIRnZoc24A&tag=1)
- Kružíková, A., Knapová, L., Gabrhelík, O., Šmahel, D., Dědková, L., Matyáš, V., Doležal, P., & Šmahelová, M. (2020). User Testing of Mobile Banking Authentication Methods: UX Testing, User Interviews, and Quantitative Survey. Brno: Masaryk University. [https://irtis.muni.cz/media/3221965/usertesting\\_tacrreport\\_2020r.pdf](https://irtis.muni.cz/media/3221965/usertesting_tacrreport_2020r.pdf)

11) 29.4. Usage of machine learning in social science (Mgr. Ondřej Sotolář)

Gathering & annotation of data for supervised machine learning. Metrics to consider: Scott's pi and related metrics, F1-measure. Descriptive and predictive modeling and role of black box models.

Presentation theme:

Find interesting examples of ML usage in social sciences, both in practice or science. How is the ML perspective different from traditional statistical modeling in Social Sciences?

Reading:

- Inter-Coder Agreement for Computational Linguistics:  
<https://aclanthology.org/J08-4004.pdf>
- To Explain or to Predict?  
<https://www.stat.berkeley.edu/~aldous/157/Papers/shmueli.pdf>

12) 6.5 Health and the Internet: eHealth and mHealth applications, introduction of eHealth, SW: eHealth and mHealth functions, results of experiments.

Presentation theme: Trust in mHealth applications. Why do people trust mHealth applications? What are the factors of trust for mHealth applications?

Reading:

- Chapter 6: Using Mobile Technology in Eating Behaviors
- Vision: Improved development of mobile eHealth applications

[https://dl.acm.org/doi/pdf/10.1145/3197231.3197263?casa\\_token=KZEaspL7gowAAAAA:iV6TerNkaOyywDzV\\_iVn9lhUFuyXSIwwT76fWEcHaZ56O41Mi7fE3vMEK8aki\\_WGr83bNHIKkaX2HA](https://dl.acm.org/doi/pdf/10.1145/3197231.3197263?casa_token=KZEaspL7gowAAAAA:iV6TerNkaOyywDzV_iVn9lhUFuyXSIwwT76fWEcHaZ56O41Mi7fE3vMEK8aki_WGr83bNHIKkaX2HA)

13) 13.5 Experimental security research on internet usage: How to explore online security, the pitfalls and results of current research on online security.

Presentation theme: User's security perceptions. How do users perceive the security of ICT? What are user factors for online security perceptions?

Reading:

- Towards robust experimental design for user studies in security and privacy

<https://www.usenix.org/system/files/conference/laser2016/laser2016-paper-krol.pdf>

14) 20.5 Conclusion and summary of the course.

#### References:

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- Whitty, T. M. (2002). Liar, liar! An examination of how open, supportive and honest people are in chat rooms. *Computers in Human Behavior*, 18, 343-352.