**Digital world introduction for decision makers**

**INDC 46th Class**

**Prof. Danny Raz (Technion)**

**Background**: The accelerated development of digital technology in recent years has produced new groundbreaking tools that can be a true "game changers" in various fields and have a significant impact on national security components. It is imperative to incorporate these tools as an integral part of the organization's overall strategy. Therefore, the ability of decision makers at the various levels to understand the meanings, capabilities and limitations of digital technologies and to communicate properly with the relevant professional echelons is an essential element of force build up as well as shaping the future generation of decision makers.

**Course Structure:** The course reviews current digital technologies and examines their abilities to change essential elements related to national security. The course will teach basic concepts such as algorithms, optimization, and artificial intelligence as well as basic technologies such as computer networks, cloud, machine learning, image processing, encryption robotics and blockchain. Later in the course, we will review these basic technologies in areas such as the Internet of Things, Smart Cities, Advanced Digital Medicine, etc. as well as examine the dramatic change that will occur in our daily lives a result of the adoption of new technologies. Emphasis will be placed on the ability of decision makers to communicate with the professional echelons and to make informed decisions regarding the implementation of relevant technologies in the organization.

**Learning outcomes** - On successful completion of the course:

1. To know basic concepts in the digital world and the expected impact of technologies on everyday life, society in general, as well as national security.
2. To understand and internalize the importance of understanding technology and its implications for the ability to make informed decisions.
3. To be able to analyze instances where critical technologies are used to organize and build proper dialogue with relevant professionals in order to provide solutions in the cost-benefit-space.

**Learning Methodology**: Learning combines lectures, group assignments, guest and discussions. In addition, an ending Hackthon in which participants will develop a relevant technology-based venture while dealing with decision-making based on dialogue with tech professionals.

**Assignments:** Before each session, you will have a short assignment based on online reading material. In addition, each participant will be required to submit a summary (approximately 2-3 pages) analyzing an idea related to the utilization of digital technology relevant to their practice and to examine the significance of digital operations management with the components of national security.

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| Meeting | Date and Time | Lesson | Details |
| 1 | 24.02.20  08:30-12:30 | Opening Session | \*Course Description – What/How/Why  \*Group Assignment: The Importance of Understanding Technology |
| Guest Speaker – Raanan Kislev – Preservation Administration, Israel Antiquities Authority | \*Leveraging Technology in a Traditional Organization |
| 2 | 27.02.20  08:30-12:00 | Communication Networks and Cloud | \*What is the Internet and How does it Work?  \*What is the Cloud? |
| Guest Speaker – Shlomi Angie, Nokia | \*Gen5 Promises and Risks |
| 3 | 03.03.20  08:30-12:00 | Computer, Algorithm, Optimization | \* Describing the computer hardware/software  \* Group Assignment – Algorithm  \* Optimization |
| Artificial Intelligence and Machine Learning | \*Machine Learning – What is it and how it works |
| 4 | 05.03.20  08:30-12:00 | The Internet of Things, Robotics | \*What is the Internet of Things and how it works  \*Robotics – Promises and Challenges |
| Guest Speaker |  |
| 5 | 09.03.20  08:30-12:00 | Guest Speaker Prof. David Harel, Wiezmann Institute | \*Power Limitations – what computers can’t do |
| Technological Discourse | \*Discussion and Group Work |
| 6 | 19.03.20  08:30-12:00 | Autonomous Vehicles; Smart Cities | \*The Use of World-changing Technologies |
| Guest Speaker: Tamir Pardo | \*The Importance of Decision-makers' understanding of Technology |
| 7 | 26.03.20  13:00-16:15 | Prof. Eli Ben Sasson – Technion | \*Blockchain Technology  \*Digital Coins  \*Impact of technologies on the Economy and Security |
| Summary discussion and Prep for Hackathon |  |
| 8 | 29.03.20 All Day | Tour of the Technion | TBA |
| Hackathon | TBA |