**COURSE INFORMATION**

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| Tittle: | Satellite Constellations: Introduction, Applications, Technical aspects. |
| Duration | 3 hours offline movie + 3 hours online class |
| Start Date: | December 09, 2020 | End Date: |  December 10, 2020 |
| Hours: | 06  | Days:  | 01 | Weeks: | 01 |
| Credit Hours: |  |
| Level | Basic:  | 🗸 | Intermediate: |  | Advance: |  |
| Pre-requisites: | General knowledge on Orbital Mechanics |
| Abstract:  | The concept of satellite constellation is more or less obvious for space systems experts; as many would conceive them as a group of satellites which jointly perform a definite mission. However, fewer ones may have detailed knowledge about architecture and technical features of constellations.This course intends to shed some light on this topic and provide participant with a brief description on technical features behind the design and operation of constellations. The course includes a three-hour offline section which presents educational movies followed by a three-hour online section. The offline section covers all the theoretical contents of the course and participants will have access to the movie prior to the online section. The online section starts with a brief review on the offline content along with Q&A. Then a satellite constellation design and analysis project will be reviewed. |
| Contents:  | **Offline:**Section1: Introduction to Constellations* + Definition
	+ Functions
	+ Examples
	+ Characteristics and attributes

Section 2: Designing a constellation* + Coverage analysis (the concept of street of coverage)
	+ Constellation pattern design (star, delta, hybrid, etc.)
	+ Examples of satellite constellations (details of famous constellations)
	+ Complimentary topics and references
	+ What to study for further research

**Online:*** + Review of the offline content
	+ Q&A
	+ Constellation design project
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| Learning Outcomes: | Following the course, participants will:* + Have a general knowledge on the concept of satellite constellations and applications
	+ Be capable of distinguishing different satellite constellation patterns
	+ Be familiar with the process of satellite constellation design
	+ Become familiar with current renown constellations in the world
	+ Be familiar with relevant sources for further study
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| Online or Offline | Both, 3 hours offline movies + 3 hours online class |
| Assessment (Oral/Examination) | Exam including 20 multiple choice questions. |
| Additional information | -- |