
International Project Week for Interdisciplinary Research-Oriented Digital Learning

Summer 2020 | Syllabus for International Participants



COURSE NAME	INSPIRED 2020 e-Learning Basic Course
LANGUAGE	English
PREREQUISITES	Enrolled in a university undergraduate or graduate program General interest in Engineering & Life Sciences and interdisciplinary research in an international environment

COURSE SCHEDULE

Launch	March 30
Duration	approx. 10 weeks
Completion deadline	June 14
Format	weekly content 'packages'

COURSE DESCRIPTION

The INSPIRED e-Learning Basic Course, based on online materials made available *via* the Moodle platform hosted at TU Darmstadt, gives the participating students of disparate academic backgrounds an overview of the fundamental concepts and state-of-the-art practices of biology and mechanical engineering, with elements of materials science. e-Learning materials are posted online incrementally, in weekly 'content packages'. The provided lecture units are accompanied by dedicated quizzes.

Space travel and exploration comprise the background and provide an added context, which is covered through additional online materials. Mastering the INSPIRED e-Learning content will prepare the students to tackle challenges of space science missions.

The communication tools available in Moodle (*e.g.*, forum) afford:

- advice and feedback from the instructors
- discussion between the participants

and contribute to the dynamic development of the 'INSPIRED online community'.

RESOURCES

e-Learning content Available *via* the open-source Moodle platform

EVALUATION

Online evaluation *via* Moodle

GRADING

Pass/fail-based

A pass grade for the Basic Course is a prerequisite for participation in any additional INSPIRED 2020 offer or will be considered for the summer event at TU Darmstadt in 2021 upon successful re-application

TRANSFER OF CREDITS

2 CP ECTS (1 US/Canadian credit semester hour)

REQUIREMENTS FOR CREDIT ALLOCATION

Completion of all quizzes with at least 51% of the highest possible score

LEARNING OBJECTIVES On successful completion of the course, the students will:

Be familiar with:

- fundamentals of diverse sub-disciplines of biology: microbiology, protein engineering, synthetic biology, molecular biology, radiation biology, pharmacy and drug development, plant biotechnology and metabolic engineering
- central principles of production management, machining, product development, energy efficiency, and Industry 4.0 in mechanical engineering
- basics of materials science and engineering: materials classes, mechanical properties, materials selection, materials testing methods
- project management methods, particularly agile project management

Get insights into:

- novel technologies and approaches revolutionizing the realm of life sciences, such as synthetic biology and gene editing (*e.g.*, CRISPR)
- current topics in production, such as digitalization of production / Industry 4.0, innovative production approaches, like 3D printing, as well as new areas of tension, such as Lean 4.0
- approaches and applications integrating multiple disciplines, *e.g.*, 3D tissue printing
- aspects of space technology

Be able to:

- plan and manage their online study process independently
- use the functions of a digital learning environment for their learning process, *e.g.*, forum for interaction, quizzes for self-assessment
- connect with their peers in an international and interdisciplinary environment
- improve their English language skills

HOME PAGE <http://www.inspired-darmstadt.com/>

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