

## Syllabus: Bi9690en, Synthetic Biology, Autumn 2023

Teachers:

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Lectures:

20/9/2023, B11/335 10:00: Introduction to the course

- Lecture 1: Origin of life (Karel Říha)
- Lecture 2: Enabling technologies: DNA assembly, synthetic genomes, genome editing (Karel Říha)
- Lecture 3: Fundamentals of synthetic biology: parts, devices, genetic circuits (Karel Říha)

4/10/2023, B11/335 10:00: Recapitulation of the Lectures 1-3

- Lecture 4: Protein engineering, computational design (Martin Marek)
- Lecture 5: Directed evolution (Martin Marek)
- Lecture 6: Protein nanomachines, gene therapy (Martin Marek)
- Lecture 7: Expanding building blocks of life (Martin Marek)

1/11/2023, B11/335 10:00: Recapitulation of the Lectures 4-7

- Lecture 8: Computer modelling in synthetic biology (Stanislav Mazurenko)
- Lecture 9: Artificial intelligence in synthetic biology (Stanislav Mazurenko)

22/11/2023, B11/335 10:00: Recapitulation of the Lectures 8-9

- Lecture 10: Metabolic engineering (Martin Marek)
- Lecture 11: Applications of synthetic biology in bacteria and plants (Karel Říha)
- Lecture 12: Synthetic organelles, minimal cells (Karel Říha)

13/12/2022, B11/335 10:00: Ethical considerations, recapitulation of the lectures 10-12