

BIO-472

Cancer biology II

Hanahan Douglas, Huelsken Joerg, Meylan Etienne

| Cursus | Sem. | Type |
|---------------------------|-------------|-------------|
| Life Sciences Engineering | MA2, MA4 | Opt. |
| Sciences du vivant | MA2, MA4 | Opt. |

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|----------------------------|-----------------|
| Language of teaching | English |
| Credits | 5 |
| Session | Summer |
| Semester | Spring |
| Exam | Written |
| Workload | 150h |
| Weeks | 14 |
| Hours | 5 weekly |
| Courses | 3 weekly |
| Exercises | 2 weekly |
| Number of positions | |

Summary

The course covers in detail the interactions of cancer cells with their environment with an emphasis on tumor-angiogenesis, inflammation, adaptive and innate immunity and cancer-induced immune suppression. Additional topics are cancer metabolism, cancer stem cells and metastasis.

Content

The 2x5 credit course Cancer Biology I+II starts in the winter semester and continues throughout the summer semester.

Cancer Biology II covers:

- complex oncogenic signaling networks and hierarchical tumor organization
- tumor metabolism
- cell death signaling and apoptosis
- cancer histology with practical training

- inflammatory signaling in cancer
- tumor angiogenesis
- tumor cell dissemination and metastasis
- innate immunity: pro-tumorigenic roles of inflammation, NK cells
- adaptive immunity: immuno editing, immune evasion, immunotherapy

The weekly lectures will be followed by exercises. The task for these exercises will be student presentations of scientific articles which illustrate the course in order to consolidate the knowledge of the course topics.

Learning Prerequisites**Recommended courses**

Cancer Biology I
Immunology

Assessment methods

Written exam during the exam session

Resources**Bibliography**

The Biology of Cancer, Robert A. Weinberg