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| **Modulbezeichnung** | **Introduction in Tissue Engineering** |
| Englischer Titel | **Introduction in Tissue Engineering** |
| Modulniveau nach DQR |  |
| Modulnummer |  |
| Untertitel |  |
| Lehrveranstaltungen |  |
| empfohlenes Studiensemester | Master program |
| Häufigkeit des Angebots/ Angebotsturnus | Every winter semester |
| Modulverantwortliche:r | Prof. Dr. rer. biol hum Heike Walles |
| Dozent:in |  |
| Sprache | englisch |
| Zuordnung zum Studiengang/ Curriculum / Verwendbarkeit des Moduls |  |
| Lehrform und SWS | Lecture, Tutorial |
| Arbeitsaufwand | Time of attendance: 2 SWS Lecture, 2 SWS Tutorial Autonomous work: Preparing for tutorials and solving homework assignments, preparing for exam, reading additional material |
| Dauer des Moduls | One semester |
| Credit Points (CP) | 5 CP = 150 h (56 h time of attendance + 94 h autonomous work) |
| Voraussetzung für die Vergabe von CP |  |
| Teilnahmevoraussetzungen |  |
| Empfehlungen für die Teilnahme |  |
| Modulziele / angestrebte Lernergebnisse / Learning Outcomes | In the lecture, we will start with an introduction into cell biology and signaling. These knowledge is a prerequisite for the introduction into cell culture technology and principles in tissue engineering. A methodical focus will be on detection of vitality, metabolic activity, histological staining and antibody-based detection methods such as ELISA; RIA, FACS or MACS. In the second half of the course we will focus on (I) the development of (bio)materials as 3D scaffolds and , the (II) bioreactor technology in Tissue Engineering, (III) non-invasive detection methods and (IV) modeling cell material interaction for tissue engineering. Finally, we give a brief insight into the application of human 3D tissues. |
| Inhalt | * Fundamentals of cell biology and cell culture technology
* Biological methods to characterize cellular function
* Basic principles of tissue engineering
* 3D tissue models and their application
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| Studien- / Prüfungsleistungen / Prüfungsformen | Written examination 90 min |
| Literatur | Review article will be provided |
| Sonstige Informationen |  |
| Freigabe / Version |  |