

Course

>3D Bioprinting and Rapid Prototyping in Biomedicine<

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| <i>Lecturer</i> | <i>Außerlechner M, Hagenbuchner J</i> |
| <i>Number</i> | <i>049511</i> |
| <i>Type / ECTS</i> | <i>VU 2 / 1,5 ECTS</i> |
| <i>Date/Time</i> | <i>18.01.2021 bis 22.01.2021</i> |
| <i>Location</i> | <i>tba</i> |
| <i>Limitations</i> | <i>Max. of 6 participants</i> |
| <i>Registration</i> | <i>Register in i-med.inside</i> |

AIM of the Course

In this course we will learn about principles of tissue engineering, the formation of 3D spheres by various different techniques, cultivation of 3D spheres in custom designed micro-bioreactors. The production of tailored nano-surfaces and membranes by electrospinning and fabrication of tissue-like structures by additive 3D bioprinting will be trained. Our lab is equipped with two high-end 3D bioprinters that are unique in Austria and with these machines we will print living mini-sphincter muscles and microfluidic devices / organ on a chip models that are then analyzed by fluorescence microscopy. In the second part the basics of computer aided design using the open source software FreeCAD as well as principles of 3D printing are trained and models, developed by students are printed using our FDM printers.