Module name	**Introduction to Mathematical Biology II: Continuum Models**
Module number	CMS-TRK-IMB2
Senior Lecturer	Dr Lutz Brusch lutz.brusch@tu-dresden.de
Qualification objectives	Students are able to create continuous deterministic mathematical models for biological issues, analyse biomathematical problems, identify analytical and numerical solutions and apply the models in practice.
Contents	The module shall include selected spatial processes from cell and development biology, mathematical models in the form of ordinary and partial differential equations and their mathematical and computational analysis, including linear stability analysis of the models' solutions, bifurcation analysis, metabolic control analysis, and the biological interpretation of mathematical results and computational tools such as Copasi, xpp-AUT and morpheus.
Forms of teaching and learning	The module includes lectures of 2 SWS, exercises of 1 SWS and self-study. The language of the lectures and exercises will be English.
Eligibility for participation	Bachelor-level knowledge of mathematics and physics is required.
Usability	In the Masters Course Computational Modeling and Simulation, the module is a compulsory voting module in the Track Computational Mathematics, to be selected in accordance with Annex 2 to the Specific Examination Regulations. The module cannot be chosen in the Master's Course Computational Modeling and Simulation if this or a module with substantially the same content from a Course with which the entry conditions under § 3 of the Studienordnung have been met has already been completed. The module provides the pre-requisites for the modules it designates under the pre-requisites for participation.
Conditions for the award of credits	Credits are awarded when the module test is passed. The module test consists of a non-public oral test performance as an individual test lasting 15 minutes. The language of the test will be English.
Credits and marks	The module allows 5 credit points to be obtained. The module score corresponds to the test performance score.
Frequency of the module	The module is offered every winter semester.
Workload	The total workload is 150 hours.
Duration of the module	The module covers 1 semester.