03-IMAT-STMT	Set Theory and Model Theory

Lehrform *(teaching format)* / **SWS** *(hours per week)*: 2VL + 2UE

Kreditpunkte *(credit points)*: 6

Turnus *(frequency)*: usually, each winter term

Inhaltliche Voraussetzungen *(content-related prior knowledge/skills)*: Grundlagenvorlesungen der Mathematik

Sprache *(language)*: English

Lehrende *(teaching staff)*: AG Theoretische Informatik (Prof. Dr. Sebastian Siebertz)

Studiengang *(degree program)*	Module	Semester
Infornatik (Master)	IMAT, IMVT-SQ	from 1st sem.
Infornatik (Bachelor)	(nur *Freie Wahl*)	

Lernergebnisse / *Learning Outcome*:

- Basic knowledge of modern axiomatic set theory
- Understanding of formal proofs and the limitations of the axiomatic method
- Basic knowledge of classical model theory

Inhalte / *Contents*:

- Naive set theory and Roussel's paradox
- The axioms of modern set theory (ZFC)
- Paradoxes of set theory
- Gödel's incompleteness theorem
- Basics of first-order model theory
- Gödel's completeness theorem
- Compactness of first-order logic

Hinweise *(remarks)*: The table lists only the primary / most specific modules to which this course is assigned.