Modulbezeichnung (Kürzel)	**Data Science & Analytics** (DSAN)
Modulbezeichnung (eng.)	Data Science & Analytics
Semester (Häufigkeit)	2 (jedes Wintersemester)
ECTS-Punkte (Dauer)	5 (1 Semester)
Art	Pflichtfach
Sprache(n)	Englisch
Studentische Arbeitsbelastung	60 h Kontaktzeit + 90 h Selbststudium
Voraussetzungen (laut MPO)	
Empf. Voraussetzungen	Mathematical knowledge at Bachelor level
Verwendbarkeit	MII
Prüfungsform und -dauer	Mündliche Prüfung oder Studienarbeit
Lehr- und Lernmethoden	Vorlesung
Modulverantwortliche(r)	E. Wings

Qualifikationsziele
Students have to be able to estimate and evaluate the numerical challenge of a large amount of data. With the support of a standard-software, students have to be able to analyse, assess and use selected algorithms for high-dimensional problems. On this basis, students will be able to assess the applicability of (commercial) software-packages in a scientific context.

Lehrinhalte
The importance of data analysis, especially of a large amount of data (Big Data), is growing in the areas of science and economy. The lecture approaches concepts, algorithms and technology for the analysis of a large amount of data. Numerical methods for solving high-dimensional linear and non-linear systems of equations, as well as the process for calibration and Maximum-Likelihood will be addressed.

Literatur
Wu, James; Stephen Coggeshall, Stephen: Foundations of Predictive Analytics. Chapman and Hall/CRC, 2012
Bühlmann, Peter; Drineas, Petros; Kane, Michael; van der Laan, Mark: Handbook of Big Data. Chapman and Hall/CRC, 2016
R Core Team: R: A Language and Environment for Statistical Computing, R Foundation for Statistical Computing, Wien, Österreich http://www.R-project.org/.

Lehrveranstaltungen

Dozenten/-innen	**Titel der Lehrveranstaltung**	**SWS**
E. Wings	Data Science	2
E. Wings, A. W. Colombo	Analytics	2