Studienprogramm/ Verwendbarkeit Master Chemie / Master Life Science / Master Nanoscience				**Schwerpunktkurs** Dispersion Colloids in Research and Industry (WF)	
Credits	6 / 12	**Dauer / Duration**	1 Semester	**Anteil des Moduls an der Gesamtnote / Part of module of the total rating**	5 / 10%
Modulnote/ Module grade	The final grade is calculated as follows: • 6 credits option: lecture 2/3, seminar presentation 1/3. 12 credits option: lecture 1/3, seminar presentation 1/6, practical performance 1/6, laboratory report 1/6, presentation of lab work 1/6.				
DozentIn/ Coordinator	Prof. Dr. A. Wittemann				
Lernziele/ Educational objectives	The students acquire knowledge on dispersion colloids and their applications in science and technology. In the practical part the students get involved in an on-going research project related to colloid science.				
Lehrinhalte/ Teaching content	General classification of colloids & dispersion, particularly with regard to suspensions and emulsions: - Macroemulsions, miniemulsions and microemulsions (preparation of emulsions by various methods, emulsion stability and stabilization mechanisms, role of emulsifiers, theoretical concepts) - Synthesis of polymer dispersions (emulsion polymerization, dispersion polymerization, miniemulsion polymerization, *etc.*) from the lab to the industrial scale - Practical applications of polymer dispersions - Colloidal stability and appropriate ways to stabilize dispersed systems are of central importance. Active involvement in an advanced research project in colloid science will help to train practical research skills.				
Lehrform/SWS/ Forms of teaching/Amount of SWS	lecture 3 SWS, seminar 1 SWS, practical lab work by participation in a current research project				
Arbeitsaufwand/ Work load	lecture: 15 weeks x 3 SWS 45 h preparatory and follow-up work 1 h per contact hour 45 h seminar: 15 weeks x 1 SWS 15 h preparation of the seminar presentation 25 h preparation for the final colloquium 30 h lab course (including written report and oral presentation) 200 h				

	∑ 360 h
Studien/ Prüfungsleistung/ Examination and unit completion	**6 credits:** oral presentation (25 min) on a current topic of colloid science, final colloquium (40 min) **12 credits:** as stated above + lab course (practical performance, report, oral presentation).
Voraussetzungen/ Prerequisites	Bachelor in Chemistry / Bachelor in Life Science / Bachelor in Nanoscience: At the beginning of the course, the content of teaching is adapted to the current knowledge of the module participants
Sprache/ Language	German (English on request)
Häufigkeit des Angebots/ Time slot and frequency	Winter term
Pflicht/Wahlpflich/ Compulsory/ Optional Courses	Optional course