

<i>Biologische Synthese</i>		<i>Wahlpflichtmodul</i>		<i>7 CP</i>		
<b>Inhalte:</b>						
<p><u>Seminar:</u> Introduction of the concepts and principles that govern biological synthesis, demonstrated on selected examples: Biosynthetic principles of protein, amino acid, nucleic acid and terpene production; conversion of light into chemical energy; fixation of CO<sub>2</sub> into carbohydrates; key metabolic pathway in living organism (i.e. citrate cycle in central metabolic function); synthesis of bioactive compounds (i.e. polyketides and non-ribosomal peptides). An overview on synthetic principles as well as a detailed mechanistic insight into specific enzymes will be given. The focus will be on the chemical biological aspects. Structural biological methods and enzymatic assays will be introduced.</p> <p><u>Lecture:</u> Introduction into the application of biomolecules as bioactive agents to steer metabolic processes; particularly the application of biomolecules in therapeutic treatment of diseases and disorders. The focus will be on diabetes and its treatment with insulin, viral infections and its treatment with proteases, rheumatism/oncology and its treatment with antibodies and oligonucleotides (RNA). Structural biological methods will be introduced.</p>						
<b>Qualifikationsziele und Kompetenzen:</b>						
The aim is to provide students with an inspirational background that will allow them to 1) understand the key biosynthetic and metabolic processes in nature, ii) translate structural and functional data on biomolecules into mechanistic models, iii) design biomimetic processes and biocomplexes, and iv) understand and develop strategies for the treatment of diseases and disorders.						
<b>Angebotszyklus:</b>		einmal pro Jahr (im Wintersemester)				
<b>Dauer des Moduls:</b>		1 Semester				
<b>Voraussetzung für die Teilnahme am Modul:</b>		keine				
<b>Organisatorisches:</b>		Die Veranstaltungen finden in Deutsch oder Englisch statt.				
<b>Studiennachweise (Teilnahme- / Leistungsnachweise):</b>		regelmäßige und aktive Teilnahme am Seminar				
<b>Modulabschlussprüfung / Prüfungsform:</b>		Klausur oder mündliche Prüfung				
<b>Voraussetzung für die Vergabe der CP:</b>		bestandene Modulabschlussprüfung				
<b>Verwendbarkeit des Moduls in anderen Studiengängen:</b>		Wahlpflichtmodul für Studierende des Masterstudiengangs Biochemie				
<b>Lehrveranstaltungen</b>						
	<b>Typ</b>	<b>SWS</b>	<b>Semester / CP</b>			
			<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
Biologische Synthese	S	2	4			
Strukturbiologische Aspekte und pharmazeutische Entwicklung von Biomakromolekülen	V	2	3			