Modulbezeichnung:	**Bio(in)organic chemstry (CME3)** (Bio(in)organic chemstry)	**15 ECTS**
Modulverantwortliche/r:	Nicolai Burzlaff	
Lehrende:	Nicolai Burzlaff, Carola Kryschi, Ivana Ivanovic-Burmazovic, Frank Wilhelm Heinemann	

Startsemester: WS 2019/2020	Dauer: 2 Semester	Turnus: halbjährlich (WS+SS)
Präsenzzeit: 195 Std.	Eigenstudium: 255 Std.	Sprache: Englisch

Lehrveranstaltungen:

A) Bioinorganic chemistry 1, metalloenzymes and metals in medicine (2L, 1S)

Bioinorganic Chemistry I, Metalloenzymes and Metals in Medicine (WS 2019/2020, Vorlesung, 2 SWS, Nicolai Burzlaff)

Seminar Bioinorganic I, Bioinorganic Reaction Mechanisms (WS 2019/2020, Seminar, 1 SWS, Nicolai Burzlaff et al.)

B) Advanced Bioinorganic Chemistry (2L)

choice of 1 course from

Bioanorganische Chemie III (WS 2019/2020, Vorlesung, 2 SWS, Nicolai Burzlaff et al.)

Bioanorganische Chemie II, Chemie des oxidativen Stresses, Spektroskopie und Elektrochemie an Bioanorganischen Systemen (SS 2020, Vorlesung, 2 SWS, Ivana Ivanovic-Burmazovic)

Metallic Nanoparticles in Medicine (SS 2020, Vorlesung, 2 SWS, Carola Kryschi)

Modern X-ray structure determination of single crystals/Einführung i. d. Kristallstrukturbestimmung von Molekülverbindungen (WS 2019/2020, Vorlesung mit Übung, 2 SWS, Frank Wilhelm Heinemann et al.)

Modern X-ray structure determination of single crystals/Einführung i. d. Kristallstrukturbestimmung von Molekülverbindungen (SS 2020, Vorlesung mit Übung, 2 SWS, Frank Wilhelm Heinemann et al.)

C) Special aspects in bioinorganic chemistry (1S)

Seminar Special Aspects of Bioinorganic Chemistry (WS 2019/2020, Seminar, 1 SWS, Nicolai Burzlaff et al.)

Special aspects in bioinorganic chemistry - Seminar (SS 2020, Seminar, 1 SWS, Nicolai Burzlaff et al.)

D) Lab course bioinorganic chemistry (7LAB)

Attendance in lab course is compulsory!

Lab Course Bioinorganic Chemistry (WS 2019/2020, Praktikum, 7 SWS, Nicolai Burzlaff et al.)

Bioinorganic Chemistry - Lab Course (SS 2020, Praktikum, 7 SWS, Nicolai Burzlaff et al.)

Inhalt:

The student

- is lead to recent research goals and achievements in the field of bioinorganic chemistry.
- evaluates and assesses the basic theories, principles and concepts of bioinorganic chemistry in compliance with a research oriented master course.
- deepens his knowledge in special topics of bioinorganic chemistry that are in the research focus of the involved research groups of the department depending on its own choice.
- performs practical studies and small research projects regarding topics of the preparative, mechanistic or more biological bioinorganic chemistry in an advanced level.

Lernziele und Kompetenzen:

The student

- can explain and apply basic theories and principles, as well as specialized and in-depth knowledge in the fields of metalloenzymes and the interaction of metals with DNA and RNA.
- can explain, apply and reflect upon the inorganic chemistry aspects in medicinal chemistry and toxicology.
- can explain, apply and reflect upon the theories, terminology, specialities, boundaries and different schools of bioinorganic chemistry critically and in depth.
- can manage the preparation of bioinorganic models, their characterization as well as their application in mechanistic studies.

- can carry out bioinorganic research projects largely independently using a wide range of bioinorganic theories and is able to reflect upon the gained results.

Verwendbarkeit des Moduls / Einpassung in den Musterstudienplan:

Das Modul ist im Kontext der folgenden Studienfächer/Vertiefungsrichtungen verwendbar:

[1] **Chemie (Master of Science): 1-3. Semester**
(Po-Vers. 2009 | NatFak | Chemie (Master of Science) | Wahlpflichtmodul | Bioanorganische Chemie)

[2] **Chemie (Master of Science): 1-3. Semester**
(Po-Vers. 2009 | NatFak | Chemie (Master of Science) | Wahlmodul | Bioanorganische Chemie)

Studien-/Prüfungsleistungen:

Bioanorganische Chemie (Prüfungsnummer: 65501)
(englische Bezeichnung: Oral Examination or Examination (Klausur) on Bioinorganic Chemistry)

Prüfungsleistung, schriftlich oder mündlich
Anteil an der Berechnung der Modulnote: 100%
weitere Erläuterungen:
Oral examination (45 min) or alternative examination according to FAU Corona statutes!
Prüfungssprache: Englisch

Erstablegung: SS 2020, 1. Wdh.: WS 2020/2021
1. Prüfer: Nicolai Burzlaff

Organisatorisches:

Grading procedure: Result of the oral examination (100%)

Bemerkungen:

Module compatibility: M. Sc. Chemie (Mandatory elective module or Elective module) / M. Sc. Molecular Science (only as Elective module)