Modulbezeichnung:	**Biomolecules and metal ions - evolution, biological functions, and biomedicine (BiomolMet)** (Biomolecules and metal ions - evolution, biological functions, and biomedicine)	**5 ECTS**
Modulverantwortliche/r:	Ingrid Span	
Lehrende:	Ingrid Span	

Startsemester: SS 2022	Dauer: 1 Semester	Turnus: jährlich (SS)
Präsenzzeit: 45 Std.	Eigenstudium: 105 Std.	Sprache: Englisch

Lehrveranstaltungen:

Biomolecules and metal ions (SS 2022, Vorlesung, 3 SWS, Ingrid Span)

Inhalt:

- Roles of metal ions in biology with focus on photosynthesis & oxygen transport
- Metalloproteins
- Metal ions in evolution, extremophile organisms
- Metal ions in biomedicine (imaging and therapy)
- Fundamentals of protein crystallography
- Fundamentals of spectroscopic techniques for characterizing metalloproteins
- Seminars in form of presenting scientific research articles on metallobiochemistry

Lernziele und Kompetenzen:

Students ...

- can explain the fundamental properties of biomolecules, the occurrence and the role of metals in biological systems, and the chemistry of life.
- gain a better understanding of the relevance of metals in evolution and the application of metals in biomedicine.
- get insight into different techniques that can be used to analyse metal-binding biomolecules.
- are able to transfer the acquired knowledge to solve unrelated scientific problems.

Literatur:

- Bioinorganic Chemistry - Inorganic Elements in the Chemistry of Life: An Introduction and Guide (Second Edition 2013) Wolfgang Kaim, Brigitte Schwederski, Axel Klein
- Bioanorganische Chemie - Metalloproteine, Methoden und Konzepte (1. Auflage August 2017) Sonja Herres-Pawlis, Peter Klüfers

Verwendbarkeit des Moduls / Einpassung in den Musterstudienplan:

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

[1] **Molecular Science (Master of Science): ab 1. Semester**

(Po-Vers. 2020w | NatFak | Molecular Science (Master of Science) | Elective modules | Biomolecules and metal ions - evolution, biological functions, and biomedicine)

Dieses Modul ist daneben auch in den Studienfächern "Chemistry (Master of Science)" verwendbar.

Studien-/Prüfungsleistungen:

Biomolecules and metal ions - evolution, biological functions, and biomedicine (Prüfungsnummer: 65491)

Studienleistung, Klausur, Dauer (in Minuten): 60
weitere Erläuterungen:
Written examination (60 minutes, ungraded, but has to be passed)
Prüfungssprache: Englisch

Erstablegung: SS 2022, 1. Wdh.: SS 2022
1. Prüfer: Ingrid Span

Organisatorisches:

Please note:

- Module will be taught in presence and in summer term only!
- Students have to register for the module examination (check registration periods on MeinCampus)!
- Registration/further information via StudOn: https://www.studon.fau.de/crs4477835_join.html!

Bemerkungen:

Module compatibility:

- Lecture module within the Elective Module in M.Sc. Chemistry or M. Sc. Molecular Science (5 ECTS, not graded)