

| Master Artificial Intelligence<br>Minor "Artificial Intelligence in Biomedical Engineering" (AIBE)  |                   |                                                              |                                                                                  |          |                     |       |     | Last edited: 15/09/2025                                                          |                               |
|-----------------------------------------------------------------------------------------------------|-------------------|--------------------------------------------------------------|----------------------------------------------------------------------------------|----------|---------------------|-------|-----|----------------------------------------------------------------------------------|-------------------------------|
|                                                                                                     |                   |                                                              |                                                                                  |          |                     |       |     | Contact:<br>Nora Manz ( <a href="mailto:nora.manz@fau.de">nora.manz@fau.de</a> ) |                               |
| Course Title                                                                                        | Acronym           | Lecturer/s                                                   | Lab/s                                                                            | Language | Type                | WS/SS | SWS | ECTS                                                                             | Exam Details                  |
| Module Title                                                                                        |                   |                                                              |                                                                                  |          |                     |       |     |                                                                                  |                               |
| AI in medical robotics                                                                              |                   |                                                              |                                                                                  |          |                     |       |     |                                                                                  |                               |
| AI in Medical Robotics                                                                              | AIMedRob          | Mathis-Ullrich                                               | SPARC                                                                            | Eng      | Lecture + Exercises | WS    | 2+2 | 5                                                                                | written exam, 60min           |
| Algorithmische Bioinformatik                                                                        |                   |                                                              |                                                                                  |          |                     |       |     |                                                                                  |                               |
| Algorithmic Bioinformatics                                                                          | ALGBIOINF         | Blumenthal                                                   | BIONETS                                                                          | Eng      | Lecture + Exercises | WS    | 2+2 | 5                                                                                | oral exam, 30min              |
| Cognitive Neuroscience for AI Developers – not currently offered                                    |                   |                                                              |                                                                                  |          |                     |       |     |                                                                                  |                               |
| Cognitive Neuroscience for AI Developers                                                            | CNAID             | Kist/Krauß/<br>Maier/Schilling                               | ANKI & LME – Pattern Recognition Lab & ExpHNO – Experimental Otorhinolaryngology | Eng      | Lecture             | SS    | 4   | 5                                                                                | written exam, 90min           |
| Computational Magnetic Resonance Imaging                                                            |                   |                                                              |                                                                                  |          |                     |       |     |                                                                                  |                               |
| Computational Magnetic Resonance Imaging                                                            | Computational MRI | Knoll                                                        | CIL                                                                              | Eng      | Lecture + Exercises | WS    | 2+2 | 5                                                                                | oral exam, 30min              |
| Computational Neurotechnology / Numerische Neurotechnologie                                         |                   |                                                              |                                                                                  |          |                     |       |     |                                                                                  |                               |
| Computational Neurotechnology                                                                       | COMPNEURO         | Reichenbach                                                  | NEUROTECH                                                                        | Eng      | Lecture + Exercises | SS    | 2+2 | 5                                                                                | written exam, 60min           |
| Human-Robot Co-Adaptation                                                                           |                   |                                                              |                                                                                  |          |                     |       |     |                                                                                  |                               |
| Human-Robot Co-Adaptation                                                                           | HRC               | Castellini/<br>Thürauf                                       | AIROB                                                                            | Eng      | Lecture + Exercises | WS    | 2+2 | 5                                                                                | written exam, 60min           |
| Intent Detection and Feedback                                                                       |                   |                                                              |                                                                                  |          |                     |       |     |                                                                                  |                               |
| Intent Detection and Feedback                                                                       | IDF               | Castellini/<br>Thürauf                                       | AIROB                                                                            | Eng      | Lecture + Exercises | SS    | 2+2 | 5                                                                                | written exam, 60min           |
| Interfacing the Neuromuscular system: Applications for Human/Machine Interfaces and Neurophysiology |                   |                                                              |                                                                                  |          |                     |       |     |                                                                                  |                               |
| Interfacing the Neuromuscular system: Applications for Human/Machine Interfaces and Neurophysiology | INS               | Del Vecchio                                                  | N-SQUARED                                                                        | Eng      | Lecture             | SS    | 2   | 5                                                                                | written exam, 60min           |
| Kolloquium im Bereich Mustererkennung                                                               |                   |                                                              |                                                                                  |          |                     |       |     |                                                                                  |                               |
| Kolloquium Magnetic Resonance Imaging                                                               | MRI               | Bickelhaupt/<br>Giese/Knoll/<br>Laun/ Maier/<br>Nagel/ Zaiss | CIL & LME – Pattern Recognition Lab                                              | Eng      | Colloquium          | WS/SS | 2   | 2,5                                                                              | seminar performance, assessed |

| Medizintechnik II (Bildgebende Verfahren)                                                                                                                                       |                         |                    |            |         |                     |    |       |   |                                                                    |
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| Medizintechnik II                                                                                                                                                               | MT2 + MT2-RUE + MT2-TUE | Knoll/Kainz        | CIL & IDEA | Ger/Eng | Lecture + Exercises | SS | 4+2+2 | 5 | modular exam (report, code implementation, presentation, homework) |
| Movement Neuroscience: Connections between Brain and Muscles in Humans                                                                                                          |                         |                    |            |         |                     |    |       |   |                                                                    |
| Movement Neuroscience: Connections between the Brain and Muscles in Humans                                                                                                      | MN                      | Del Vecchio        | N-SQUARED  | Eng     | Lecture             | WS | 3     | 5 | written exam, 60min                                                |
| Rehabilitation and Assistive Robotics                                                                                                                                           |                         |                    |            |         |                     |    |       |   |                                                                    |
| Rehabilitation and Assistive Robotics                                                                                                                                           | RAR                     | Castellini/Thürauf | AIROB      | Eng     | Lecture + Exercises | SS | 2+2   | 5 | written exam, 60min                                                |
| Surgical Technologies Innovation                                                                                                                                                |                         |                    |            |         |                     |    |       |   |                                                                    |
| Surgical Technologies Innovation                                                                                                                                                | STI                     | Mathis-Ullrich     | SPARC      | Eng     | Lecture + Exercises | WS | 4     | 5 | modular exam (report, presentation)                                |
| <b>Detailed information is available on Campo.</b><br><b>Please take note of the data in the respective <a href="#">course catalog</a> and <a href="#">module handbook</a>.</b> |                         |                    |            |         |                     |    |       |   |                                                                    |