

CCBM Fellows Training Requirements

CCBM Fellows should ideally have the in-depth disciplinary knowledge as well as the versatility needed to cross disciplinary boundaries and the ability to do team science in an interdisciplinary environment. The following training requirements were put together with the intention of giving all CCBM fellows a common grounding in basic techniques and skills from multiple disciplines that are important in the biophysical sciences, biomaterials and biotechnology.

Fellows are required to take:

1. All 3 Training modules –
 - a. Imaging and Spectroscopy
 - b. Nano-bio Fabrication
 - c. Computation and Modeling

AND

2. 3 units of CCBM elective courses **per** semester of funded Fellowship (requirement will not exceed 9 units total irrespective of semesters of funding).

Courses taken to satisfy this requirement **before July 2019** can be any of the ones from the list of UCM and Outside courses (see tables on subsequent page)

Note that if a course is required by your graduate group it cannot be used to satisfy an elective requirement for CCBM.

A course that is not on the lists below may be considered for use as an elective on a case-by-case basis. Please contact your advisor and CCBM Graduate Lead Faculty for approval.

Courses taken to satisfy this requirement **after July 2019** have to be one of the IB3 Core Courses.

Students with Fellowships **after July 2019** who still need to meet elective requirements **must take an IB3 course during** the Fellowship funded semester.

IB3 Core courses:

- Imaging and Spectroscopy (PHYS/BEST 231)
- Nano-bio Fabrication (PHYS/BEST 232)
- Computation and Modeling (PHYS/BEST 230)

Note that these IB3 Core courses may also be used as electives in your respective graduate programs (please confirm with your graduate group). (If, for any reason, it is not possible to take an IB3 Core course during the funded semester, please contact your advisor and the CCBM Graduate Lead Faculty for approval to take a different course.)

| Graduate Group | BioEngineering and Material Science and Engineering | Chemistry and Chemical Biology | Physics |
|--|---|--|--|
| UCM Elective Courses | <ul style="list-style-type: none"> ▪ BEST 240: Biomolecular Engineering ▪ BEST 214: Tissue Engineering and Design ▪ BEST 211: Synthetic Biology (EBICS) ▪ BEST 299: Cell as a Machine (EBICS) ▪ BEST 299: Mechanobiology in Plants and Animals (CEMB) | <ul style="list-style-type: none"> ▪ CHEM 214 or PHYS 212: Statistical Mechanics ▪ CHEM 216: Interfacial & Surface Chemistry | <ul style="list-style-type: none"> ▪ PHYS 209: Soft Matter Physics ▪ PHYS 204: Biophysics |
| Interdisciplinary Biophysical Sciences, Biomaterials and Biotechnology (IB3) Core Courses | <ul style="list-style-type: none"> ▪ PHYS/BEST 230 Computation and Modeling for Interdisciplinary Biophysical Sciences, Biomaterials and Biotechnology | <ul style="list-style-type: none"> ▪ PHYS/BEST 231 Imaging and Spectroscopy for Interdisciplinary Biophysical Sciences, Biomaterials and Biotechnology | <ul style="list-style-type: none"> ▪ PHYS/BEST 232 Bio and Nano Fabrication for Interdisciplinary Biophysical Sciences, Biomaterials and Biotechnology |

UCSB Courses (no longer offered starting Fall 18):

| | | |
|---|---|--|
| <ul style="list-style-type: none"> ▪ BMSE 201A: Protein Structure and Function ▪ BMSE 201B: Chemistry & Structure of Nucleic Acids ▪ BMSE 201C: Biomembranes Structure & Function | <ul style="list-style-type: none"> ▪ BMSE 215: Biophysical Thermodynamics ▪ BMSE 217: Electrostatics of Biopolymers ▪ BMSE 250: Bionanotechnology ▪ BMSE 271: Mechanical Force and Biomolecules | <ul style="list-style-type: none"> ▪ BMSE 276A: Biomolecular Materials I: Structure and Function ▪ BMSE 276B: Biomolecular Materials II ▪ BMSE 293: Computational Methods Biochemistry & Molecular Biology |
|---|---|--|