

SynBERC Certificate in Synthetic Biology: COURSE CHECKLIST

All courses must be at least 2 semester units or 3 quarter units and must be completed with a minimum grade of B-. The same course cannot be counted twice to satisfy two different requirements.

Student Last Name, First Name

Math:

- _____ Calculus– 1st semester/quarter (two semesters required)
_____ Calculus– 2nd semester/quarter (two semesters required)
_____ Advanced math (multi-variable/linear algebra/diff equations) – 1 semester/1 quarter

Chemistry:

- _____ General chemistry - 1 semester/1 quarter
_____ Organic chemistry - 1 semester/1 quarter
_____ Biochemistry - 1 semester/1 quarter
_____ Physical Chemistry or thermodynamics - 1 semester/1 quarter

Biology:

- _____ General biology (with lab) - 1 semester/1 quarter

Computational skills

- _____ Computational science or applied computing - 1 semester/1 quarter

Policy & practices/ethics:

- _____ Ethics course dealing with biosafety, laws and regulation, and ethics. – 1 semester/1 quarter

Upper division courses (at least two of the following):

- _____ Upper div **synthetic biology course** – 1 semester/1 quarter
_____ Upper div course in **molecular biology, microbiology, or genetics** – 1 semester/1 quarter
_____ Senior-level **engineering design** (or departmental equivalent) – 1 semester/1 quarter

Laboratory experience*

Either 2 semesters/2 quarters of *part-time* lab experience, or 1 semester/1 quarter of *full-time* lab experience is required.

PART TIME (2 semesters/2 quarters)

- _____ *Part-time* bioengineering laboratory or molecular biology independent research in the field of synthetic biology/microbiology/biotechnology – 1st semester/quarter
_____ *Part-time* bioengineering laboratory or molecular biology independent research in the field of synthetic biology/microbiology/biotechnology – 2nd semester/quarter

OR

FULL TIME (1 semester/1 quarter/1 summer)

- _____ *Full-time* bioengineering laboratory or molecular biology independent research in the field of synthetic biology/microbiology/biotechnology, OR participation on an iGEM team, OR participation in an REU (Research Experiences for Undergraduate) –1 semester/1 quarter/1 summer.

* If the *Senior-level engineering design course* requirement was fulfilled using undergraduate research credit, that semester of research cannot be counted twice to fulfill the *Laboratory experience* requirement as well.