



Synthetic Biology Basics

Synthetic Biology Module 2
University of Rochester iGEM 2020

Checklist for Module #2

- Read link: *Chapter 1: Fundamentals of Synthetic Biology*
- Open Google Form #2



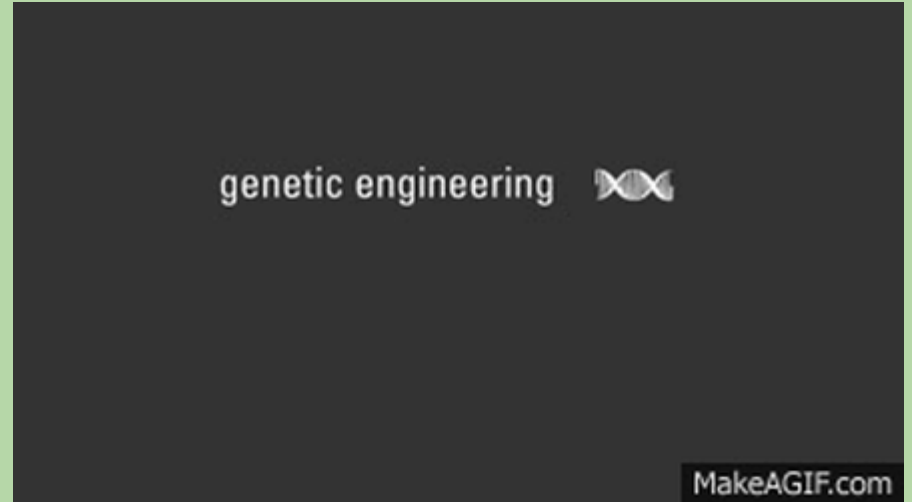
Module overview

- Basics of synthetic biology
- What makes synthetic biology unique
- Synthetic biology process
- Applications



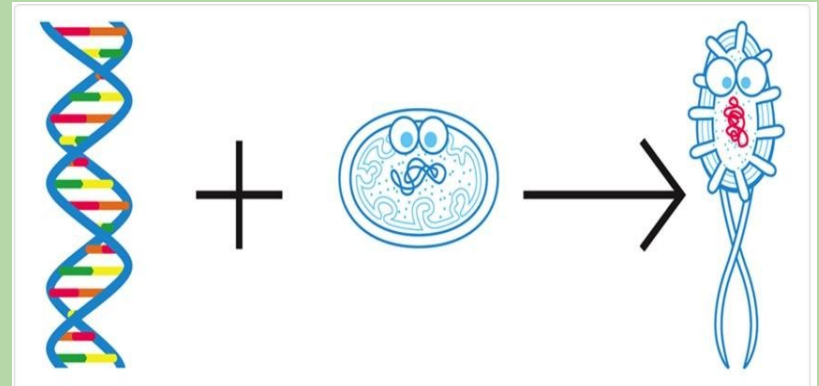
Defining Synthetic Biology

- Engineering
- Genetic engineering



Defining Synthetic Biology

- *Application* of engineering principles in biology
- *New* biological systems



<https://archive.bio.org/articles/synthetic-biology-explained>

https://mir-s3-cdn-cf.behance.net/project_modules/max_1200/65cc6130364467.561f77ad2a158.jpg

<https://www.oreilly.com/library/view/biobuilder/9781491907504/ch01.html>



Why use synthetic biology?



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<https://www.assignmentpoint.com/wp-content/uploads/2013/05/Reproduction-in-Bacteria.jpg>



Using synthetic biology

- Modeling
- Hardware



Using synthetic biology

- Plants that produce their own fertilizer
- Bacteria producing dyes for clothing
- System that detects airborne pathogens
- Bacteria that breaks down waste and recycles it
- Organism producing medicine
- Make healthy foods taste like junk food



Review

- Basics of synthetic biology
- What makes synthetic biology unique
- Synthetic biology process
- Applications



Thank you!

Email us at uofr.igem@gmail.com



Sources

Kuldell, Natalie, et al. “Chapter 1: Fundamentals of Synthetic Biology.” *O'Reilly Online Learning*, O'Reilly Media, Inc., www.oreilly.com/library/view/biobuilder/9781491907504/ch01.html.

“Synthetic Biology Explained.” *BIO*, Biotechnology Innovation Organization, archive.bio.org/articles/synthetic-biology-explained.

Munoz, Hector. “Microfluidics? What's That? A Beginner's Guide.” *Microfluidic Future*, Microfluidic Future, 15 Sept. 2011, www.microfluidicfuture.com/blog/microfluidics-a-beginners-guide.

Crow, Diana. “6 Amazing Things to Watch in Synthetic Biology.” *Medium*, NEO.LIFE, 12 Dec. 2017, medium.com/neodotlife/6-things-to-watch-in-synthetic-biology-f76666c7114e.

