

Mathematical Modeling in Synthetic Biology Course/Webinar Survey

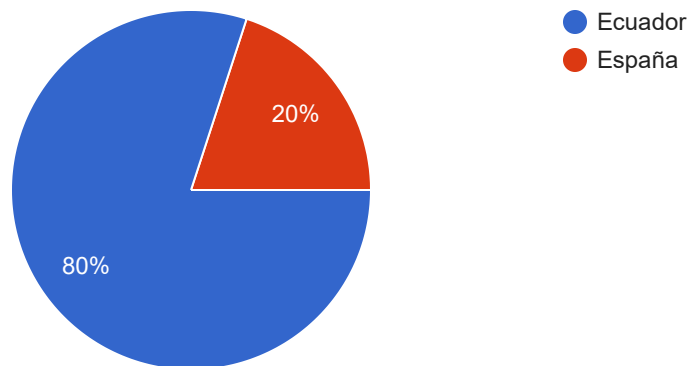
40 respuestas

Demographics

1. Where are you from?

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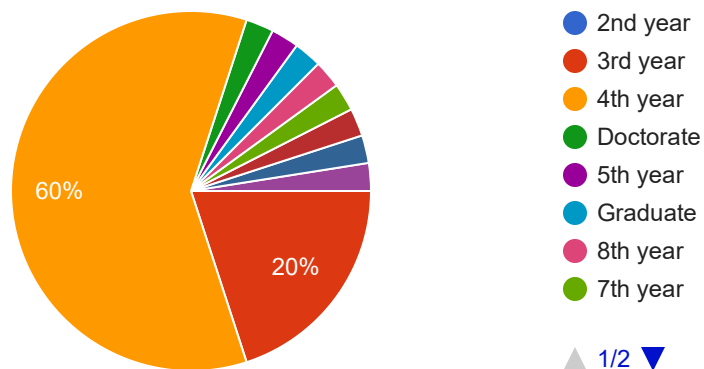
40 respuestas



2. What year of study were when you took the course/webinars?

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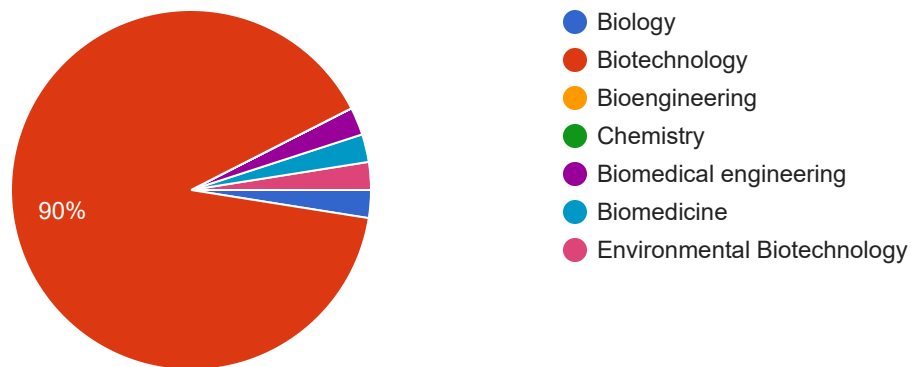
40 respuestas



3. What is your major or field of study?

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40 respuestas

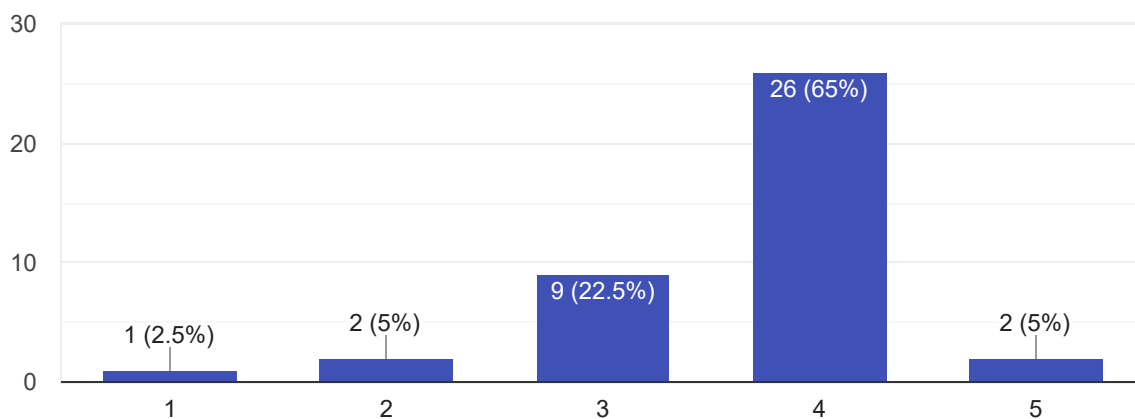


Understanding and Learning

4. How confident do you feel in your understanding of mathematical modeling concepts after completing the course?

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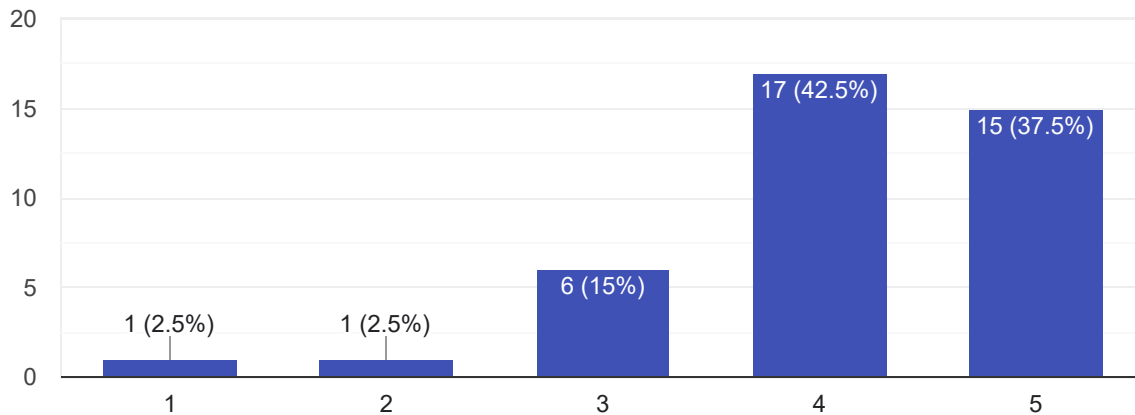
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5. How well do you think the course explained the principles of mathematical modeling in synthetic biology?

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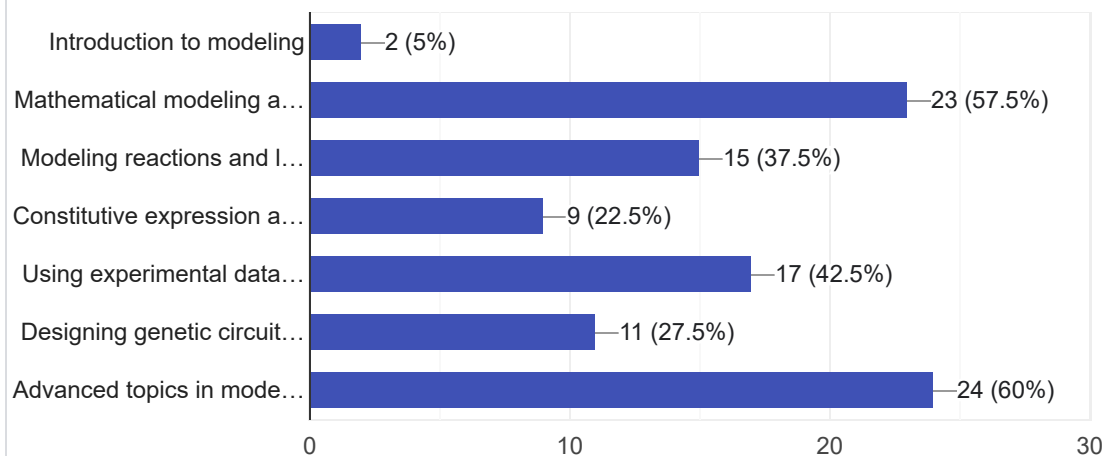
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6. Which topics did you find the most challenging? (Select all that apply)

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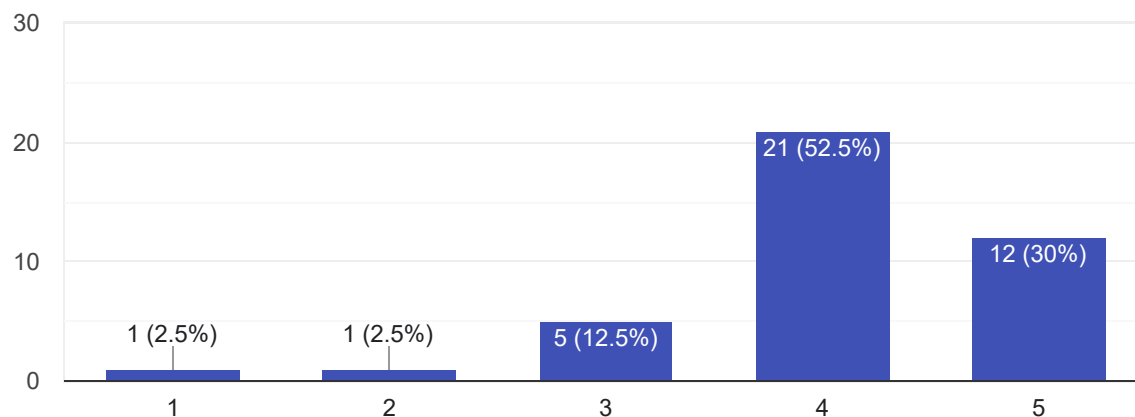
40 respuestas



7. How effectively did the course materials (slides, scripts, etc.) aid your understanding of mathematical modeling?



40 respuestas

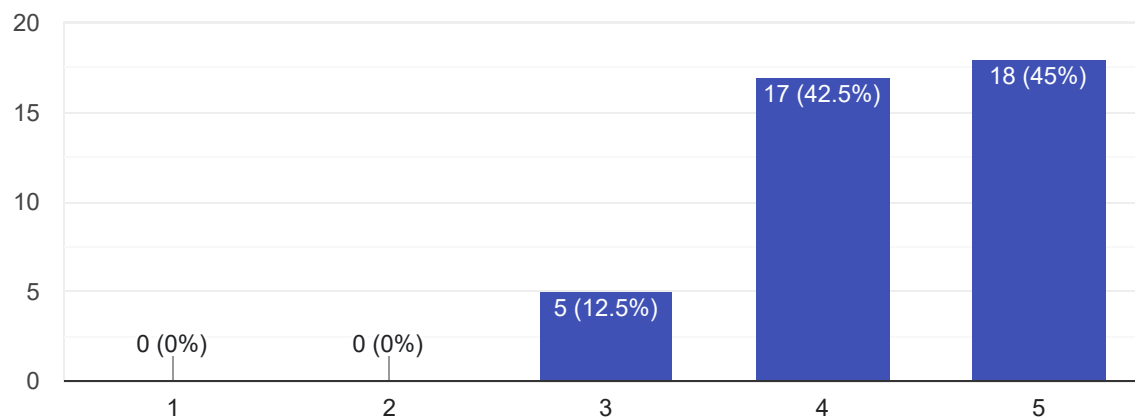


Engagement and Interest

8. How interesting did you find the mathematical modeling part of the course?



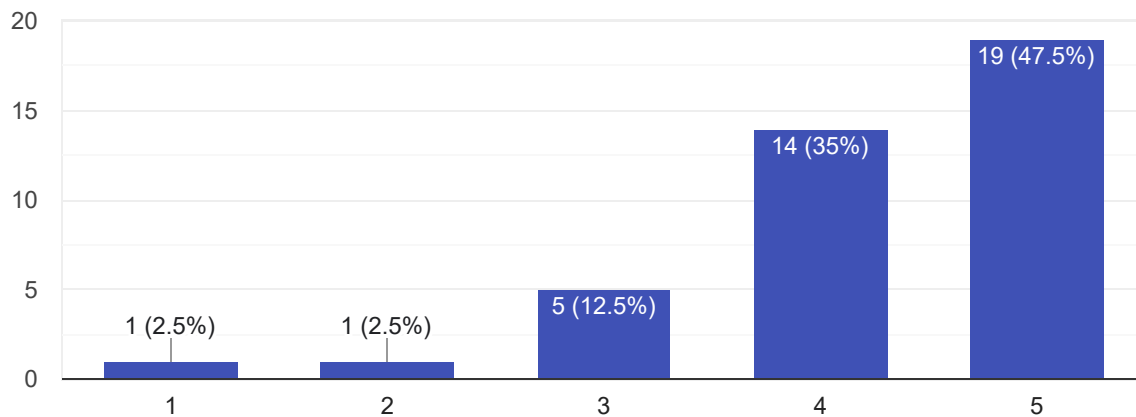
40 respuestas



9. Did the class/webinars enhance your interest in mathematical modeling within synthetic biology?

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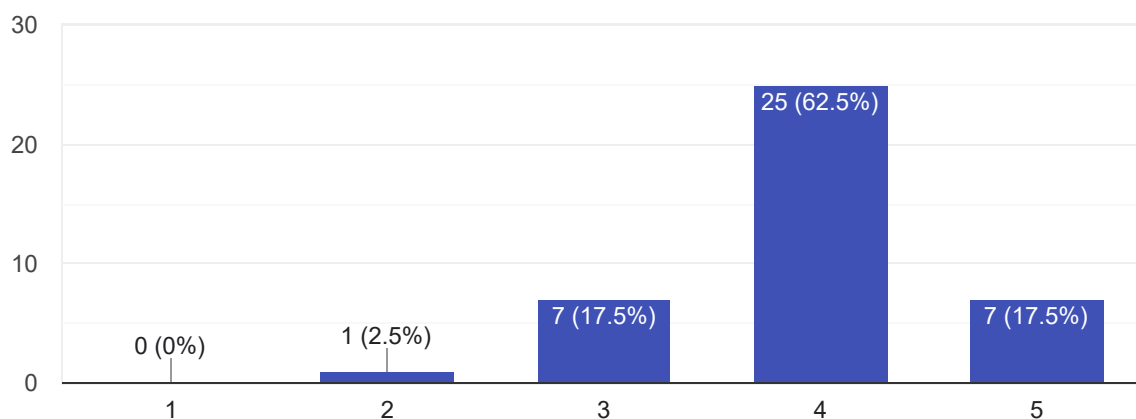
40 respuestas



10. How engaging were the webinar sessions?

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40 respuestas



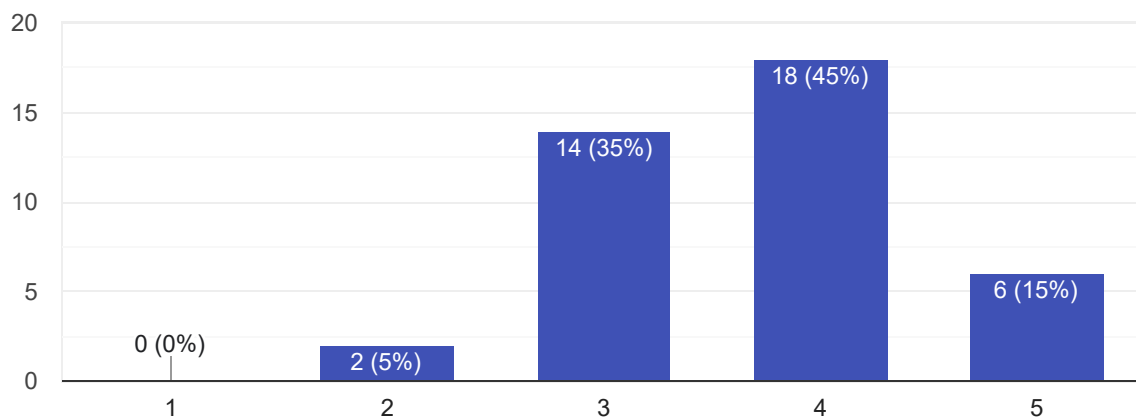
Practical Application



11. How prepared do you feel to apply mathematical modeling techniques to real-world synthetic biology problems after taking this course?

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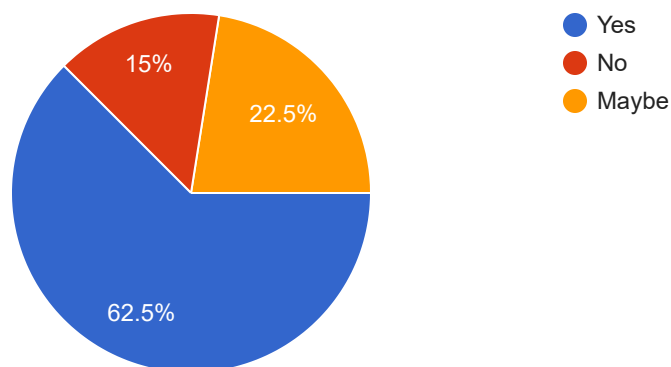
40 respuestas



12. Have you applied any of the mathematical modeling techniques learned in this course to other projects or coursework?

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40 respuestas

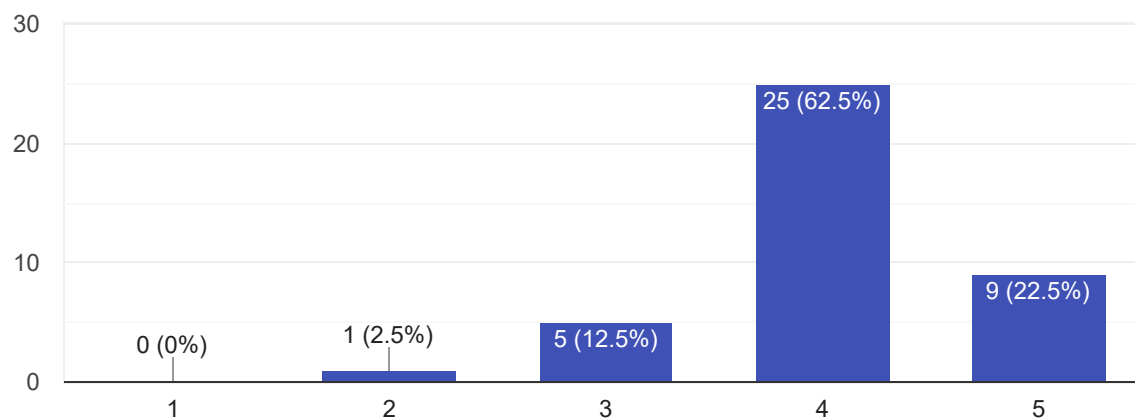


Overall Satisfaction



13. How satisfied are you with the mathematical modeling component of the course?

40 respuestas



14. What did you like most about the mathematical modeling part of the course?

31 respuestas

I don't know how we did before.

I liked the way ODEs let us modeling the dynamics of biological systems, given temporal experimental data

Understanding the steps involved in modeling. Sometimes books do not fully explain the concepts, and it is good, to see a human teaching.

I can predict the outcomes of my designs in silico

Me gusto mucho ver como la parte matemática nos ayuda a predecir la expresión de los genes insertados

Applying mathematical modeling into biological genetic circuits

La aplicación de EDO y sistemas avanzados para el modelado de rutas metabólicas

What I liked the most was the simulation of the mathematical models in MATLAB and the analysis of the results.

I like the approach that suggests how to transform chemical equations into mathematical equations, also the proposal for parameter simulation based on dynamic ranges.

I like the example that the professor gave

Data-driven mathematical modelling

I loved every aspect of it, but the one that helped me understand the most was the programming of gene expression regulation types

Development of models based on biochemical reactions and conditions

I liked applying theory to real-world problems.

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The explanation is clear and concise.

The interactive slides



About protein kinetics modeling

Todo

Designing genetic circuits

Examples and how to apply them

Matlab implementation

The explanation of the equations principles.

I liked the parts: Modeling reactions and law of mass action kinetics, and Designing genetic circuits using models

It helped me to understand how to establish a yield in an equation

The examples were very useful.

Great presentation of complex topics.

Clear explanations and good resources.

Good content, well-structured.

Enjoyed the practical examples.

Modelado de reacciones y cinética de la ley de acción de masas



15. What improvements would you suggest for the mathematical modeling part of the course?

29 respuestas

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Shorter pils

Maybe more examples to fully understand how to assign an equation to a biology processes

More examples

Muchos ejemplos prácticos

Adicionar el actual uso de AI para el modelado, ya que permite una interacción más rápida y limpia.

Probably to have more and continuous sessions in which the participants are encouraged to work on a practical exercise.

Involve what resources are used to find constants or what simulations can be done in cases where there is no información on the interacción that is sought to be analized in mathematical modeling

Try to made the course more dynamic

More practical guided examples

Implement the explanation and development of a stochastic model. Additionally, provide a complete example of a medium-complexity project in the development of its mathematical model.

Provide bibliografy for self-study such us books, papers, theses, because sometimes students don't have enough mathematical and physico-chemical background.

I suggest adding more hands-on projects.

Apply more practical examples

Everything was fine

None



Con más ejemplos prácticos

Make an extra video with a full exercise reducing the explanation but focusing on the development

Get more familiar on how to get the constants and hypothetical numbers

More matlab exercises

Add more industrial examples of the application of the models.

I would suggest adding more explication about how to obtain constants from experimental data

A practical exercise

Include more real-world examples.

Add more interactive elements.

More examples would help.

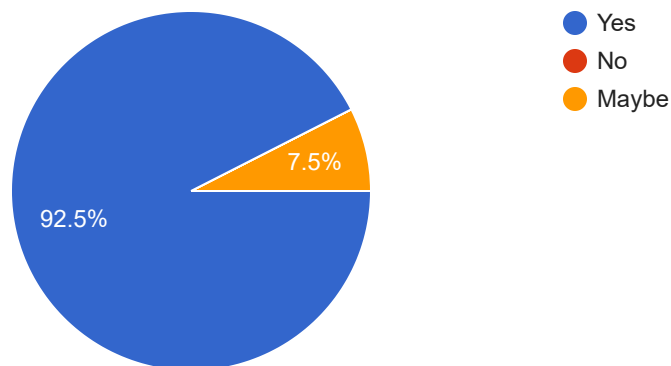
nothing.

Ninguna

16. Would you recommend this course to other students interested in synthetic biology?

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40 respuestas



Additional Feedback



17. Any additional comments or suggestions?

19 respuestas

None

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Alles klar.

Keep up the good work!

Nope.

None for the moment.

Great course, I think mathematical modeling is so important as the circuit Design, with your course I learned that both things go hand in hand.

Include new approaches based on AI if there exist something with regard

Ninguna

N/A

No

NA

Thanks for the course 😊

Excellent course overall.

The course was very helpful.

A solid course but could be improved.

Ninguno

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