



Name of the course	
From molecules to cells: the emergence of life on Earth and beyond	
Lecturers	
Dr. Amit Kessel and Prof. Nir Ben-Tal	
Semester	
2 nd	
Requirements	
Submitting a home exam and an oral presentation	
Final grade composition	
Home exam (50%); oral presentation (50%)	
Structure of the course	
Date/Lesson	Topic
Mar 8 th /1	Introduction (presentation 1) Features of life-1: life's diversity (presentation 2, slides 1-31)
Mar 15 th /2	Features of life-2: life's shared features, defining life. (presentation 2, slides 32-78)
Mar 22 nd /3	Abiogenesis-1: <ul style="list-style-type: none">• Introduction• The Urey-Miller experiment• Appearance of biomolecular building blocks (presentation 3, slides 1-44)
Apr 5 th /4	Abiogenesis-2: <ul style="list-style-type: none">• Appearance of biomolecular building blocks (cont.)• Appearance of macromolecules (presentation 3, slides 45-95)
Apr 12 th /5	Abiogenesis-3: <ul style="list-style-type: none">• Appearance of first cells• Life beyond Earth (presentation 3, slides 96-131)
Apr 19 th /6	General trends of protein evolution-1: <ul style="list-style-type: none">• From peptides to proteins• Evolution of protein domains (presentation 4, slides 1-41)
Apr 26 th /7	General trends of protein evolution-2: evolution of function (presentation 4, slides 42-69)



May 3 rd /8	Studies in protein evolution
May 10 th /9	Students' presentations
May 24 th /10	Students' presentations
May 31 st /11	Students' presentations
June 7 st /12	Students' presentations
June 14 st /13	Students' presentations
Mandatory reading	
Non-mandatory reading	
William Schopf (editor), Life's origin: the beginnings of biological evolution André Brack (editor), The molecular origins of life: assembling pieces of the puzzle.	
Comments	
<ul style="list-style-type: none">• The lectures will be given as pre-made videos, along with the PowerPoint presentations.• The headline of each video specifies the relevant presentation and covered slides.☒ A zoom meeting dedicated to Q&A will be held every week at the time of the intended class.	