

ESSENTIALS OF BIOTECHNOLOGY

Fall 2022



Instructors
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Week	Dates	Topic of Study	Unit Topics & Assessments	Standards
1 – 5	8/11 – 9/9	INTRODUCTION TO BIOTECH	Equipment ID, Lab Safety, Pipetting, Bio-Rad DNA Extraction & Precipitation. Chapter 1 Test	HS-EB 1, 2, 3, 4, 5 HS-AB 2.8, 5.6, 6.7, 6.9, 6.10
9 – 10	9/12 – 10/21	LABORATORY SKILLS	Staining Eukaryotic Cells, Molarity, Chromatography, Sep Pack, Titrations, Chapter 2 Test	HS-EB 1, 5 HS-AB 4.8
11 – 12	10/24 – 11/4	SCIENCE FAIR 101	Pandamania, Chapter 9 Research	HS-EB 1,6,7

October 31st Biotech BEWARE

13-14	11/7 – 11/18	MICROBIOLOGY	Gram Staining / Oil Immersion, Making Media, Streaking Plates, Aseptic Technique, Chapter 3 TEST	HS-EB 1,5, 6, 7
15 – 17	11/28 – 12/16	RESEARCH & FINAL EXAM	Science Fair Project, Scientific Independent Research, Semester Review, Final Exam Essentials of Biotech	HS AB 1.4.5.7 HS-EB 1,2,3,4,5,6,7



APPLICATIONS OF BIOTECHNOLOGY

Spring 2023



Week	Dates	Topic of Study	Unit Topics & Assessments	Standards
18 – 21	1/3 – 1/27	INDEPENDENT RESEARCH & GMO'S	Science Fair, Bacterial Transformation, Plasmids, Plasmid Mapping, Chapter 5, GFP Protein Purification Kit	HS-AB 1, 4 HS-EB 3.1, 3.3, 5, 6.7, 7.2

Regional Science & Engineering Fair Friday Feb. 4th Georgia College

22	1/30 – 2/3	GMO'S & SCIENCE FAIR	Chapter 5 Test	
23 – 26	2/6 – 3/3	DNA TECHNOLOGIES	Agarose Gel, Buffers, DNA Fingerprinting, Gel Electrophoresis, Semi-Log, Nebcutter, Forensic Investigators, Chapter 4 Test	HS-AB 1,2,3,4,5,6
27 – 29	3/6 – 3/24	PCR - POLYMERASE CHAIN REACTION	DNA Barcoding with Primers Chapter 6 Test	HS-AB 1,4

Georgia Science & Engineering Fair April 28th @ UGA

SPRING BREAK April 3rd – 7th

23 – 33	3/27 – 4/28	ANTIBODIES & ANTIGENS	Proteins, Protein Synthesis, Immunizations Calling the Shots, Hemoglobin, ELISA Immunology, Size Exclusion Chromatography, Karyotyping, Chapter 7 Test.	HS-AB 1,2,3 HS-EB 5.4, 5.5, 5.8
34 – 37	5/1 – 5/26	CANCER	Final Exam Applications of Biotechnology CPR	HS-AB 1,2,3,4,5,6

