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# Biomedical Innovation Course Outline

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## **Problem One: Design of an Effective Emergency Room (24 Days)**

- Activity 1.1.1 - Mission: Innovation
- Activity 1.1.2 - Research and Documentation
- Activity 1.1.3 - Effective Presentations
- Problem 1.1.4 - Emergency!

## **Problem Two: Exploring Human Physiology (23 Days)**

- Project 2.1.1 – Scientific Research
- Activity 2.1.2 – Science and the Media
- Activity 2.1.3 – Making Results Meaningful
- Problem 2.1.4 – Investigating Human Physiology

## **Problem Three: Design of a Medical Innovation (16 Days)**

- Activity 3.1.1 – Evolution of a Product
- Activity 3.1.2 – Gathering the Facts
- Problem 3.1.3 – Design Innovations

## **Problem Four: Investigating Environmental Health (25 Days)**

- Activity 4.1.1 – Environmental Exposures
- Activity 4.1.2 – Analysis of Water Contamination
- Activity 4.1.3 – Testing the Waters
- Project 4.1.4 – Dose Response
- Problem 4.1.5 – Environmental Health Community Profile

## **Problem Five: Combating a Public Health Issue (18 Days)**

- Project 5.1.1 – Disease Detectives
- Activity 5.1.2 – Public Health in the News
- Problem 5.1.3 – Combating a Public Health Issue

## **Problem Six: Molecular Biology in Action (Optional) (19 or 45 Days)**

- Activity 6.1.1 - Restriction Enzyme Challenge
- Project 6.1.2 - Construction and Cloning of a Recombinant DNA
- Problem 6.1.3 – Cloning and Sequencing

## **Problem Seven: Forensic Autopsy (Optional) (12 Days)**

Activity 7.1.1 – Forensic Autopsy

Problem 7.1.2 – Determining Cause of Death

## **Problem Eight: Independent Project (Optional) (23+ Days)**

Activity 8.1.1 – Identifying a Project Topic

Activity 8.1.2 – Literature Review

Activity 8.1.3 – Methodology

Activity 8.1.4 – Materials

Activity 8.1.5 – Project Schedule

Completion of Independent Project

Problem 8.1.6 – What Did I Learn?