

# **Advanced Biology Course Outline**

## Unit 1 – Water Quality Index

- A. Insect Anatomy
- B. Insect Classification
- C. Water Quality Indexing

## Unit 2 – Microbiology

- A. Bacteriology basics
- B. Serial dilutions
- C. Gram staining/Koch's Postulates
- D. Antibiotic Effectiveness

## Unit 3 – Biotechnology

- A. Future of biotechnology research project
- B. DNA review
- C. Restriction enzymes
- D. Electrophoresis
- E. Cloning and stem cells
- F. Pedigrees
- G. Polymerase Chain Reaction

## Unit 4 – Biochemistry

- A. Biological molecules: Carbohydrates, lipids, proteins, nucleic acids
- B. Cellular Respiration
- C. Photosynthesis

## Unit 5 – To be determined!!