**1st week:**

**Day 1:**

1.       DNA-The Blue print of life.

2.       Process of hereditary. Mendelian Theory of inheritance.

3.       Maintenance of species of living world. Hardy Weinberg Principle.

4.       Factors that causing diversity, among species and within species.

**Day 2:**

5.       What is polymorphism? It’s benefit to forensic application.

6.       Types and applications of variable gene regions.

**Day 3&4:**

7.       Technological basis of DNA Typing

8.       Isolation of DNA from: (Theory and Practical)

·         Different body fluids like blood, semen, saliva

·         Different stain of body fluids like blood, semen, saliva

·         Bone, hair, teeth

9.       Isolation of DNA using differential technique from mixed stains like blood mixed semen stain

**Day 5:**

10.   Quality check and Quantification of isolated DNA. (Theory and Practical)

11. Application of Real Time PCR. (Theory and Practical)

**2nd week:**

**Day 1:**

12. Amplification of targeted DNA fragments (STR) using PCR. (Theory and Practical)

**Day 2:**

13. Application of Genetic Analyzer. (Theory and Practical)

14. Interpretation of electropherogram. (Theory and Practical)

**Day 3:**

15. Population Genetics Relevant to the Interpretation of DNA Typing.

16. Estimation of the Population Frequency of DNA profiling. (Theory and Practical)

**Day 4:**

17. Implications of Genetic Correlations among kinship. (Theory and Practical)

**Day 5:**

18. Next Gen Sequencing and its application in Forensics.