CMMB 413- Human Genetics Course Outcomes

By the end of this course, students should be able to:

1. compare the various techniques used to analyze an individual’s karyotype and identify large chromosomal rearrangements.
2. describe the elements of the sex chromosomes that contribute to sex determination, and describe the more common mutations and chromosomal abnormalities that can interfere with normal sex determination.
3. identify the mode of inheritance (sex-linked vs. autosomal; dominant vs. recessive) of a trait or disease based on pedigree analysis.
4. describe the molecular differences between Mendelian and Non-Mendelian inheritance patterns.
5. calculate Hardy–Weinberg ratios of a population and describe possible factors that can disrupt Hardy-Weinberg equilibrium.
6. describe various examples of complex traits and multifactorial inheritance, and describe how their inheritance patterns differ from those of a single gene trait.
7. describe the major genetic causes of cancer, and how other factors contribute to cancer presentation and progression.
8. determine the most appropriate genetic diagnostic technology for a given case study.
9. compare the responsibilities and job descriptions of professionals within the field of Medical Genetics.