BIMM110 (The Molecular Basis of Human Disease)

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LECTURE NO.	TOPIC
Lectures 1-2	Basic techniques: cloning, restriction mapping, PCR, DNA libraries, nucleic acid hybridizations, DNA sequencing
Lecture 3	Genetics in Medicine. Mendelian Genetics in Humans. Inborn Errors of Metabolism. Pedigree Analysis. Genetic Counseling
Lecture 4	Complexity of the Human Genome
Lecture 5-6	Human Cytogenetics. Karyotyping. Chromosomal Abnormalities
Lecture 7	Meiosis, Gametogenesis, Fertilization; In Vitro Fertilization
Lectures 8-9	Transgenic animals, knock-out mice, cloning of mammals
Lecture 10	Nondisjunctions, Trisomies and Monosomies
Lecture 11	Trisomy; Down Syndrome
Lectures 12-13	Sex Chromosomes. X-inactivation. The Y chromosome and SRY
Lecture 14	Somatic Cell Genetics. Hybrid Cells. Gene Mapping. In situ hybridization
Lectures 15-16	The Human Linkage Map. The complete Human Genome
Lecture 17	Physical maps and sequence;
Lecture 18	Duchenne Muscular Dystrophy (X-linked diseases)
Lecture 19	Cystic Fibrosis (autosomal recessive mutations)
Lecture 20	Fragile X syndrome and trinucleotide expansions;
Lecture 21	Huntington's disease; Parkinson disease; neurodegenerative diseases
Lecture-22	Mitochondrial diseases ; Maternal Inheritance.

Lecture 23	Mitochondrial Diseases. Mitochondria, ROS and Aging
Lecture 24-25	Epigenetics and Imprinting; Angelman and Prader Willi Syndromes
Lecture 26-27	Genetics of Cancer. Oncogenes, Tumor Suppressors.
Lecture 28	Bioethics
Lecture 29	catch-up and review