MD GENET/GENETICS/ZOOLOGY 562 — HUMAN CYTOGENETICS
2 credits.

Fundamental principles of cytogenetics and special problems of human cytogenetics for biology and medical students. 
Requisites: GENETICS 466, 468, BIOCORE 587, or BMOLCHEM/MD GENET/BMOLCHEM 721
Course Designation: Breadth - Biological Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2017

MD GENET/GENETICS 565 — HUMAN GENETICS
3 credits.

Principles, problems, and methods of human genetics. Surveys aspects of medical genetics, biochemical genetics, molecular genetics, cytogenetics, quantitative genetics, and variation as applied to humans. 
Requisites: Graduate standing, GENETICS 466, 468, or BIOCORE 587
Course Designation: Breadth - Biological Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2017

MD GENET/BIOCHEM/GENETICS 620 — EUKARYOTIC MOLECULAR BIOLOGY
3 credits.

This course focuses on the basic molecular mechanisms that regulate DNA, RNA, and protein metabolism in eukaryotic organisms. This course is intended for advanced undergraduates and first year graduate students with a firm knowledge of basic biochemistry.
Requisites: BIOCHEM 501 or 508 or graduate standing
Course Designation: Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2017

MD GENET/BOTANY/GENETICS 629 — EVOLUTIONARY GENETICS
3 credits.

Basic principles of phylogenetics, population genetics and quantitative genetics including the construction of gene trees, forces affecting the amount and distribution of genetic variation in populations, and the inheritance and evolution of multifactorial characters. Knowledge of intro calc stats or cons inst
Requisites: GENETICS 466 or Biocore 301 302 or equiv.
Course Designation: Breadth - Biological Sci. Counts toward the Natural Sci req
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2015

MD GENET/PEDIAT 646 — CANCER GENETICS RISK ASSESSMENT AND COUNSELING
2 credits.

The purpose of this course is to equip students with the background knowledge needed to provide cancer genetics counseling services. The information gained from the course will be put into practice during the second year cancer rotation, collectively preparing students for clinical practice. Students are provided with a background in cancer genetics from a medical, biological, and clinical perspective. The course includes: general principles and topics in oncology; familial cancers and cancer syndromes; and management, counseling, social, ethical, and legal issues.
Requisites: Consent of instructor
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2017

MD GENET/GENETICS 677 — ADVANCED TOPICS IN GENETICS
1-3 credits.

Contents vary; consideration of subjects not included in the curriculum. 
Requisites: Graduate standing or GENETICS 466, GENETICS 468 or BIOCORE 383
Course Designation: Breadth - Biological Sci. Counts toward the Natural Sci req
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2017

MD GENET 699 — INDEPENDENT READING
1-3 credits.

Requisites: Cons inst Sr st
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2017
MD GENET 707 — GENETICS OF DEVELOPMENT
3 credits.

A research-level analysis of the current status of the investigation of processes controlling differential gene activity and cellular behavior. The major emphasis is genetic. In successive years, the focus moves from the gene to the cell to the organism.

Requisites: GENETICS 466 or equiv, Biochem 602 or equiv
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2017

MD GENET/GENETICS 708 — METHODS AND LOGIC IN GENETIC ANALYSIS
3 credits.

Contemporary issues in genetic, developmental, cell, and molecular biology are addressed in a discussion format. Invited speakers give research lectures and reading material is taken from the primary literature. The discussion focuses on evaluating genetic approaches to biological problems.

Requisites: Declared in Genetics graduate program
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2016

MD GENET/PEDIAT 713 — PRACTICUM IN GENETICS COUNSELING
3 credits.

Introductory practicum in genetics counseling, designed to acquaint the student with the basic practice skills required, protocols used, and professional issues in genetics counseling. Clinical experiences in a variety of specialty clinics provide opportunities for initial development of interviewing, data collection, and counseling skills.

Requisites: Enrollment in MS Genetics Counseling Progm
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2017

MD GENET/PEDIAT 714 — PRACTICUM IN GENETICS COUNSELING
3 credits.

Second semester of the practicum in genetics counseling. Builds upon the first semester course (713) and provides additional opportunities to develop and improve skills in interviewing, data collection, case management and counseling.

Requisites: Med Genet 713
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2017

MD GENET/BMOLCHEM 721 — MOLECULAR AND MEDICAL GENETICS
3 credits.

General genetics principles, with emphasis on human and clinical genetics.

Requisites: 1st yr st in Med Sch or cons inst
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2015

MD GENET/GENETICS/NURSING/PEDIAT 731 — ADVANCED CLINICAL GENETICS CONCEPTS
3 credits.

An advanced course covering clinical genetic concepts including phenotype, genetic mechanisms, approach to diagnosis (medical, clinical and genetic testing protocols), and natural history (including management approaches). While specific for Genetic Counselor Studies students other healthcare providers are allowed if they have sufficient genetic background knowledge.

Requisites: Declared in Master of Genetic Counselor Studies program
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2017

MD GENET/PEDIAT 737 — CONTEMPORARY PROFESSIONAL ISSUES IN GENETICS COUNSELING
1 credit.

A series of selected basic issues and topics that are core curricular requirements specific to genetics counseling. Relevant, non-redundant topics will be scheduled over four consecutive semesters.

Requisites: Enrollment in Genetics Counseling Progm or consent of instructor
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2017

MD GENET/PEDIAT 739 — LITERATURE SEARCH STRATEGIES AND ANALYSIS IN CLINICAL GENETICS
2 credits.

Approaches to literature searching including computerized databases and information retrieval are covered. Methods are provided for the students to learn to read clinical literature critically, to recognize and assess biases and to understand the limits of currently available clinical genetics studies.

Requisites: Enrollment in Genetic Counseling Progm in Dept of Med Genetics
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2017
MD GENET/PEDIAT 742 — CLINICAL EMBRYOLOGY AND PRENATAL GENETICS
1 credit.
Review human development (normal and abnormal) and the influence of genetic disorders and teratogens, common indications for prenatal genetic counseling as well as available prenatal diagnosis and screening techniques. This course prepares the genetic counseling student for the prenatal clinical practicum.
Requisites: Declared in Genetic Counselor Studies Program
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2017

MD GENET/PEDIAT 744 — APPLICATIONS OF BIOCHEMICAL GENETICS FOR GENETIC COUNSELORS
2 credits.
This course will introduce to the genetics counseling trainee applications of biochemical and molecular diagnostic tests in clinical practice and will review the major classes of inborn errors of metabolism.
Requisites: Enrollment in Genetic Counseling Program in Dept of Med Genetics
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2017

MD GENET/PEDIAT 813 — ADVANCED PRACTICUM IN GENETICS COUNSELING
4 credits.
A two semester program of clinical experiences which explores some of the pertinent professional issues in genetics counseling. The clinical experiences consist of four eight-week rotations which provide many opportunities for trainees to work toward perfecting skills in counseling, interviewing, data collection, case coordination and ongoing follow-along of genetics families.
Requisites: Med Genet 713 714
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2017

MD GENET/PEDIAT 814 — ADVANCED PRACTICUM IN GENETICS COUNSELING
4-5 credits.
The second of a two semester sequence of clinical experiences and didactics which provides opportunities for trainees to obtain professional competency in counseling, interviewing, and case coordination; to explore professional boundaries and limits; and learn strategies to develop a self-reflective practice.
Requisites: MD GENET/PEDIAT 813
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2017

MD GENET/PEDIAT 814 — ADVANCED PRACTICUM IN GENETICS COUNSELING
4-5 credits.
The second of a two semester sequence of clinical experiences and didactics which provides opportunities for trainees to obtain professional competency in counseling, interviewing, and case coordination; to explore professional boundaries and limits; and learn strategies to develop a self-reflective practice.
Requisites: MD GENET/PEDIAT 813
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2017

MD GENET/GENETICS/POP HLTH 888 — PUBLIC HEALTH GENOMICS
1 credit.
Public health genomics uses knowledge gained from genetic and molecular research along with a consideration of ethical, legal, and social implications (ELSI) to prevent disease and improve the health of the population. Students enrolled in this course will be provided an introduction to public health genomics through a review of fundamental principles of genetics, followed by lectures and discussions on the use of genetic information in clinical and research settings and its implications for disease management and prevention. Students will also gain an awareness of policies that guide public health and will be able to discuss current ethical, legal, and social implications of these policies. These learning objectives will be met through readings and videos, lectures, and discussions of recent journal articles and current topics in public health genomics.
Requisites: Graduate or professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2017

MD GENET 990 — RESEARCH
1-12 credits.
Requisites: Consent of instructor
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2017

MD GENET 993 — SEMINAR IN GENETICS
1 credit.
Sections deal with various aspects of genetics: Drosophila, maize, immunogenetics, developmental genetics, or other special topics. Students may enroll in two or more sections if they wish.
Requisites: Graduate or professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Summer 2017

MD GENET 999 — INDEPENDENT WORK
1-3 credits.
Requisites: Consent of instructor
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2017