

Prospectus

PG Diploma in Genetic Counselling

At

All India Institute of Medical Sciences, Jodhpur



INTRODUCTION

Mission Statement

To establish a Centre of Excellence in Medical Education, Training, Health Care and Research imbued with scientific culture, compassion for the sick and commitment to serve the underserved.

About Jodhpur

Jodhpur is the second largest city in the Indian state of Rajasthan. It is located 335 kilometers (208 miles) west from the state capital, Jaipur and 200 kilometers (124 miles) from the city of Ajmer. It was formerly the seat of a princely state of the same name, the capital of the kingdom known as Marwar. Jodhpur is a popular tourist destination, featuring many palaces, forts and temples, set in the stark landscape of the Thar Desert.

The city is known as the "Sun City" for the bright, sunny weather it enjoys all year. It is also referred to as the "Blue City" due to the blue-painted houses around the Mehrangarh Fort. The old city circles the fort and is bounded by a wall with several gates. However, the city has expanded greatly outside the wall over the past several decades. Jodhpur lies near the geographic centre of Rajasthan state, which makes it a convenient base for travel in a region much frequented by tourists.

About AIIMS Jodhpur

AIIMS, Jodhpur is one of the new AIIMS established as apex healthcare institutes by the Ministry of Health & Family Welfare, Government of India under the Pradhan Mantri Swasthya Suraksha Yojna (PMSSY). These institutes have been established with the aim of correcting regional imbalances in quality tertiary level healthcare in the country, and attaining self-sufficiency in graduate and postgraduate medical education and training. AIIMS, Jodhpur imparts both undergraduate and postgraduate medical education in all branches of medical science and related fields, along with nursing and paramedical training to bring together in one place educational facilities of the highest order for the training of personnel in all branches of health care activities.

ABOUT THE COURSE

Genetic disorders and birth defects account for about 5 -7 % of all newborn problems or disorders. Individually they are rare but collectively responsible for a heavy burden on the community and society. Common genetic conditions are Down syndrome and Turner syndrome among chromosomal aneuploidies and Thalassemia, Sickle cell disease, hemophilia, Muscular dystrophy, and skeletal dysplasia as single gene defects. Besides, there is an ever-increasing list of multifactorial disorders including common disorders like asthma, diabetes, and cancer. Technological advances and awareness have increased the demand for early detection and prevention through prenatal diagnosis (PND). This is a specialized field of medicine and requires a balanced knowledge of biotechnology and clinical medicine. The interface for PND remains Genetic Counseling. Which is a skilled process of appraising an individual or a family about the disorder in detail, its manifestation, diagnosis, treatment options, and prevention in a non-directive manner taking into account their psychological makeup, knowledge, and understanding to enable the couple take the decision best suited to their family and community.

Genetic counselors are health professionals with specialized graduate degrees and experience in the areas of medical genetics and counseling. They work as members of a health care team, providing information and support to families who have members with birth defects or genetic disorders and to families who may be at risk for a variety of inherited conditions.

AIM AND OBJECTIVES

The overall objective of the Program will be to prepare students with the appropriate knowledge and experiences to function as genetic counselors in a wide range of settings and roles. The Program strives to train students who can be an interface between patients, clinicians, and molecular and human geneticists.

Students gain insightful and multifaceted skills that will enable them to be effective genetic counselors, aware of the many new technical advances and often-difficult ethical, legal and social issues that have surfaced in the light of the Human Genome Project.

Graduates of the Program will be prepared to work in a variety of settings including both adult and pediatric genetics clinics, specialty clinics such as cancer genetics and metabolic clinics, and prenatal diagnosis clinics, as well as in areas of research or molecular genetics laboratories relevant to genetic counseling and human genetics.

ORGANIZATION OF THE COURSE

The Post-Graduate Diploma program will run for two semesters and consists of enrolment in 2 semesters. The result of at least a pass grade is required for all courses. The courses include:

Introductory Counselling (Professional Counselling Skills Part A in semester 1 and Professional Counselling Skills Part B in semester 2)

Counselling theories and techniques through seminars and video-role play tutorials. Subjects include the arts of interviewing, listening and breaking of bad news and the theories of counselling. Attendance and an assignment are assessed.

Human Genetics

The basic science of Human Genetics, including basic cell structure and function, DNA structure, replication, transcription and translation, mitosis and meiosis, human embryology, normal and abnormal cytogenetics, interpretation of different molecular DNA analyses, molecular and cytogenetic correlates of the different forms of inheritance.

Clinical Genetics

Students will be taught the natural history, aetiology and burden of genetic, congenital and adult onset conditions most commonly encountered in clinical genetics practice, both by informal seminars and discussion groups, and by direct involvement in genetics clinics. Supervised by the genetic counselling clinic coordinators, students obtain information from families either by telephone interview or home visit before the clinics, attend the clinic visits and follow up visits. Students also attend the Prenatal Diagnosis

Clinics. Topics in which the students obtain valuable experience include the collection of family medical and social information for drawing pedigrees, the use of pedigree-drawing programs, and the use of medical and genetic databases.

Practical on Prenatal & Post-natal Diagnostic Methods

This course consists of a practical and mini-project component, both of which must be completed successfully.

The practical consists of clinical rotations in OBG, Pediatrics, Radiology, Laboratory, and Field. These can include outreach clinics, hospital and genetic clinics, laboratories, fertility centers, genetic education center and genetic support group organisations, enabling the students to see how clinical genetics and genetic counselling are carried on in the workplace. There will be a maximum of two students to each placement location at the same time.

The mini-project/essay component enables students to identify an area of investigation within the genetic counselling field, conduct an effective literature search and a detailed proposal suitable for submission to an ethics board. Finally, in Semester 2 –

- (a) Submit a long case on Genetic Counselling
- (b) Produce a resource for dissemination of genetic information within a family network.

OBJECTIVE OF THE COURSE

To provide high quality hands-on training in tools and techniques in areas of Medical Biotechnology for skill development in Genetic counselling, prenatal and postnatal diagnosis.

COURSE DESCRIPTION

Course Code	Course Name	Method (L-Lecture; D-Demo; PBL)	Semester
GENE001	Principles & Practices of Genetic Counseling	PBL	1
GENE002	Advanced Medical Genetics: Molecular, Metabolic & Cytogenetics	L, PBL	1
GENE003	Professional Counseling Skills (Part 1)	Demo	1
GENE004	Direct Practice Foundation: Methods & Skills	Demo, Practicals	1
GENE005	Human Genetics	L, PBL	2
GENE006	Clinical Genetics	L, PBL, D	2
GENE007	Professional Counseling Skills (Part 2): Ethical & Professional Issues in Genetic Counseling	Demo, Live practice	2
GENE008	Practicals and Project	Practice	2

Assessment: Continuous, mid and semester Formative Assessment, and Final Summative examination (Theory and Practical of Marks 100 each)

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