KURUKSHETRA UNIVERSITY KURUKSHETRA

DEPARTMENT OF GEOPHYSICS

Department Profile

The three year M. Tech. (Applied Geophysics) course has been running in this university since 1985. This is the seventh Institution in India providing degree in M. Tech. (Applied Geophysics). The minimum qualification for the admission to this course is at least 55% marks in aggregate in B.Sc. with Physics and Mathematics as two of the subjects. The admission is done on merit cum written test as per the university rule. The course is aimed at providing trained manpower in the field of applied geophysics to cater the needs of Exploration and Production (E&P) and service providers in the field of geophysical exploration. The faculty of the department has published more than 150 papers in national and international journals of repute. The department has executed the research projects worth Rs. 1.5 crores mainly funded by the Department of Science and Technology, Govt. of India. In addition to the M. Tech. (Applied Geophysics) course, the department also undertakes Ph. D. program in different specializations.

Chairperson

Prof. S. S. Teotia
Department of Geophysics,
Kurukshetra University, Kurukshetra –136 119, Haryana

Contact Information

Tel: 09416266580 (mobile)
Email: Teotia_ss@rediffmail.com

Faculty Information

	Name	Joining Date	Specialization	Qualifications	Contact information
Professor & Chairman	Dr. S. S. Teotia	30-08-1986	Seismology & Seismic Hazard Assessment, Seismic Signal Processing, Fractals	M.Tech., Ph.D.	09416266580 teotia_ss@rediffmail.com
Professor	Dr. Nand Lal	3-10-1978	Nuclear Geophysics, Solid Earth Physics	M.Sc., Ph.D.	09416549524 lalkuk@gmail.com
Reader	Dr. Dinesh Kumar	11-07-1990	Strong Motion Seismology: Modelling And Inversion, Attenuation	M.Tech., Ph.D.	01744239161 dineshk5@rediffmail.com
Reader	Dr. Anand Joshi	12-10-1994	Geophysical Modelling, Strong Motion Seismology, Signal Processing, Simulation of High Frequency Ground Motion, Inversion of Geophysical Data	M.Tech., Ph.D.	09896512702 anushijos@yahoo.co.in
Reader	Dr. R.C. Patel	18-10-1994	Structural Geology, Himalayan Tectonics	M. Sc., Ph.D.	0909416734196 patelramesh_chandra@rediffmail.com
Lecturer	Dr. B. S. Chaudhary	23-08-2004	Remote Sensing and GIS, Hydrology	M.Tech., Ph.D.	09416336163 bsgeokuk@yahoo.com

Courses offered

Type of Course (Postgraduate & others)	System of Examination
M. Tech. (Applied Geophysics)	Semester
Ph.D. Program in Geophysics	As per university norms

Profile of different courses offered:

Degree Type	Course Duration	No of sanctioned seats	Scheme of Exam. (Annual/Semester)
M. Tech. (Applied Geophysics)	**3 years (6 semester)**	**16+ 5 (sponsored seats)**	**Semester**

Details of different Courses

Course Name : M. Tech. (Applied Geophysics)
Course Type : Post Graduate
Exam Scheme : Semester
Duration : 3 years (6 semesters)

Semester-I

Paper Code	Paper Name	Paper Type	Remarks	Max. Marks	Internal Marks	External Marks
GP-101	Mathematical Methods in Geophysics	Theory		100	25	75
GP-102	Solid Earth Geophysics	Theory		100	25	75
GP-103	Numerical Methods & Computer Programming	Theory		100	25	75
GP-104	Basic Geology	Theory		100	25	75
GP-105	Geology Lab	Practical		100	25	75
GP-106	Computer Lab	Practical		100	25	75

Semester-II

Paper Code	Paper Name	Paper Type	Paper Remarks	Max. Marks	Internal Marks	External Marks
GP-201	Remote Sensing & GIS	Theory		100	25	75
GP-202	Stratigraphy, Himalayan, Economic & Petroleum Geology	Theory		100	25	75
GP-203	Geophysical Signal Processing	Theory		100	25	75
GP-204	Geophysical Fields & Waves	Theory		100	25	75
GP-205	Geophysical Lab - I	Practical		100	25	75
GP-206	Geophysical Lab - II	Practical		100	25	75
GP-207	Geological field training	Field training		100		

Semester-III

Paper Code	Paper Name	Paper Type	Remarks	Max. Marks	Internal Marks	External Marks
GP-301	Seismology	Theory		100	25	75
GP-302	Gravity & Magnetic Prospecting	Theory		100	25	75
GP-303	Groundwater Geophysics	Theory		100	25	75
GP-304	Electrical Prospecting	Theory		100	25	75
GP-305	Geophysical Lab-III	Practical		100	25	75
GP-306	Geophysical Lab-IV	Practical		100	25	75
GP-307	Geophysical field training-I	Field training		100		

Semester-IV

Paper Code	Paper Name	Paper Type	Remarks	Max. Marks	Internal Marks	External Marks
GP-401	Petrophysics & Well Logging	Theory		100	25	75
GP-402	Physical Oceanography & Marine Geophysics	Theory		100	25	75
GP-403	Seismic Prospecting	Theory		100	25	75
GP-404	Geophysical Inversion	Theory		100	25	75
GP-405	Geophysical Lab – V	Practical		100	25	75
GP-406	Geophysical Lab - VI	Practical		100	25	75

Semester-V

Paper Code	Paper Name	Paper Type	Remarks	Max. Marks	Internal Marks	External Marks
GP-501	Near Surface Geophysics	Theory		100	25	75
GP-502	Non-Linear Geophysics	Theory		100	25	75
GP-503	Geophysical Lab-VII	Theory		100	25	75
GP-504	Geophysical Lab-VIII	Theory		100	25	75
GP-	Elective – I	Practical		100	25	75
GP-	Elective – II	Practical		100	25	75

Semester-VI

Paper Code	Paper Name	Paper Type	Remarks	Max. Marks	Internal Marks	External Marks
GP-601	Dissertation	Theory		400		
GP-602	Comprehensive Viva-Voce	Theory		100		
GP-603	Seminar	Theory		100		

Elective – I Solid Earth

GP-506: Computational Seismology GP-507: Geomagnetism
GP-508: Whole Earth Dynamics GP-509: Solid Mechanics
GP-510: Numerical Simulation of Earth System

Elective – II

GP-511: Geotomography GP-512: Seismic Data Analysis & Reservoir Geophysics
GP-513: Reservoir Modelling GP-514: Radiometric Exploration
GP-515: Advanced Remote Sensing & Image Processing

Salient Features of the Course Curriculum

- The course curriculum has been updated w.e.f. the session 2006-07 keeping in view the latest trends in Industry and Research & Development.
- The students undergo Geophysical Field Trainings with the organizations like ONGC, NGRI, Ground Water Boards, MECL etc. They submit the field training reports individually which are evaluated by external examiners.
- The students deliver six seminars during the course. The power point presentation is mandatory.
- The students do the dissertation work with the organization like ONGC, NGRI, and Remote Sensing Institutes etc. They submit the dissertation reports and same are evaluated by external examiners.
- In addition to above, many students do the summer trainings with the organizations like ONGC, NGRI, Remote Sensing Institutions etc.

Facilities

Library

Departmental library have over 450 books on different aspects of geophysical exploration. There is also one SPG/SEG library comprising of books donated by Society of Exploration Geophysicists (SEG, USA) and Society of Petroleum Geophysicists. A journal named "Leading Edge" is regularly received by the Department form SEG, USA.

Teaching/ Research Labs

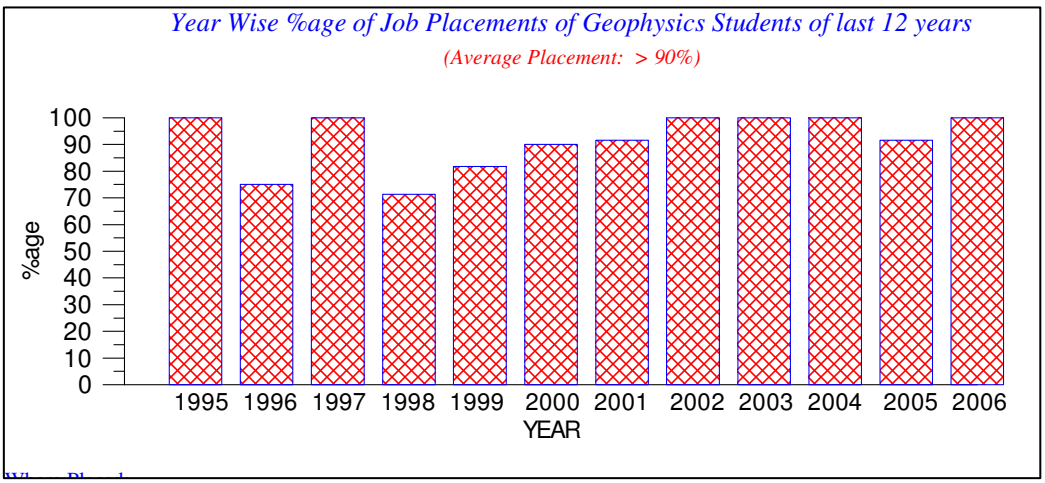
- Computer lab- with 29 computers and two workstations
- Instrumentation Lab- Resistivity Meter, Engineering Seismograph & Syskil kid Resistivity Imaging System.
- Seismic Data Processing Lab
- Low Temperature Thermochronology lab

Others facilities

The deaprtment has Seismological Observatory

Placement cell

The department has a placement cell which helps the students to get placements in different E&P companies, Research and Developments Institutes, State Organizations and Government Departments. The placement chart of the students from 1995 onwards is shown below in the form of a bar diagram.



Information on Seminar and Conferences: Nil

Information on Research Activities (On going Projects)

Title of Project	Name of Teacher	Duration	Funding agency	Amount (Rs.)
Integrated remote sensing and seismic hazard studies around Pithoragarh and its surrounding region, Kumaon Himalaya, Uttranchal	Dr. R.C. Patel and Dr. Anand Joshi	2004-2007	DST	12.34 lacs
Installation of strong motion digital network in Kumaon – Garhwal Himalayas for determination of three dimensional Q structure by the inversion of the strong motion data	Dr. Anand Joshi Dr. S.S.Teotia and Dr. Dinesh Kumar	2005-2008	DST	17.36 lacs
Exhumation of higher Himalayan Crystalline (HHC), Arunachal Himalaya, using Fission track thermocronology	Dr. R.C.Patel and Dr. Nand Lal	2006-2009	DST	14.55 lacs

Information on Achievement

Name of Teacher	Achievement area	Duration
Dr. Anand Joshi	JAPAN under BOYSCAST fellowship from DST, New Delhi ISET Award-1999 for best paper in ISET journal of Earthquake technology	2001-2002 (one year) 2002
Dr. S.S.Teotia	UK/ Commonwealth fellowship	2002-2003 (seven months)
Dr. R.C.Patel	Japan UK/ Commonwealth fellowship	2005 (One week) 2005-2006 (six months)
Dr. B. S. Chaudhary	Germany DAAD fellowship U.K. (London) Invited talks at University of Reading, Reading and University College Landon	Dec 2004-Jan 2005 (Two months) Feb 2005 (one week)