

**Evaluative Report of the Department
(2009-2013)**

1. Name of the Department : **Geology Department, P.U., Chandigarh.**
2. Year of establishment: **1958**
3. Is the Department part of a School/Faculty of the university?
Yes, Science Department of P.U.
4. Names of programmes offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., D.Sc., D.Litt., etc.) : **UG, PG and Ph.D.in Geology.**
5. Interdisciplinary programmes and departments involved:
Department of Environment, Physics & Chemisry.
6. Courses in collaboration with other universities, industries, foreign institutions, etc.
: **Ph.D. Course**
7. Details of programmes discontinued, if any, with reasons :
M.Sc.Course in Petroleum discontinued due to poor response.
8. **Examination System: Annual/Semester/Trimester/Choice Based Credit System: Semester.**
9. Participation of the department in the courses offered by other departments:
Students are attending subsidiary subjects, like Anthropology, chemistry, Physics, Mathematics.
10. Number of teaching posts sanctioned, filled and actual (Professors/Associate Professors/Asst. Professors/others)

2009-10

	Sanctioned	Filled	Actual (including CAS & MPS)
Professors	5+5 (RPS) + 1 (RPS)	--	6
Associate Professors	1 + 4 + 1	--	2
Asst. Professors	14	--	4
Others (Re-employed)	--	--	2

2010-11

	Sanctioned	Filled	Actual (including CAS & MPS)
Professors	5 + 4 (RPS)	--	4
Associate Professors	1 + 4 + 1 (RPS)	--	2
Asst. Professors	14	--	4
Others (Re-employed)	--	--	3

2011-12

	Sanctioned	Filled	Actual (including CAS & MPS)
Professors	5 + 4 (RPS)	--	4
Associate Professors	4 + 1 (RPS)	--	1
Asst. Professors	14	--	3
Others (Re-employed)	--	--	2

2012-13

	Sanctioned	Filled	Actual (including CAS & MPS)
Professors	5 + 3 (RPS)	--	3
Associate Professors	4 + 1 (RPS)	--	2
Asst. Professors	14	--	4
Others (Re-employed)	--	--	3

11. Faculty profile with name, qualification, designation, area of specialization ,experience and research under guidance

Sr . N o.	Name	Qualifi cation	Designati on	Subject Specialization	No. of years of experience	No. Of Ph.d.stu dents guided for the last 4 years.
	Dr.Naval Kishore	Ph.D	Professor	Hydrogeology, Petrology, Environmental Geology.	27 yrs.	Ph.D. awarded =3 Ongoin g =12
	Dr. R.S. Loyal	Ph.D	-do-	Vertebrate Palaeontology,Biostrat igraphy,Palaeobiogeo graphy.	27 yrs.	
	Dr. Naresh Tuli	Ph.D.	-do-	EngineeringGeology Environmental Geochemistry, Medical Geology.	28 yrs.	5
	Dr.Naveen Chaudhri	Ph.D.	-do-	IgneousPetrology,Isot ope Geochemistry	27yrs.	-
	Dr.Rajeev Patnaik	Ph.D.	-do-	Vertebrate Palaeontology,Palaeoc limatology.	18	Ph.D. produce d(1) Register ed (4)
	Dr. Ashu Khosla	Ph.D.	Asstt. Professor	Vertebrate Palaeontology & Micropalaeontology	8.5 yrs.	-

	Dr. Parampreet Kaur	Ph.D.	-do-	Igneous Petrology, Isotope Geochemistry.	13yrs.	-
	Dr. Gurmeet Kaur	Ph.D.	-do-	Igneous Petrology, Geochemistry.	6 yrs.	2(guiding)
	Dr. B.P. Singh	Ph.D.	-do-	Invertebrate Palaeontology and Siliciclastic Sedimentology	3yrs.	Ongoing=4
	Dr. Veena Dadwal	Ph.D.	Professor (Re-employed)	Analytical Geochemistry, Environmental Geology, Medical Geology.	Above 30yrs.	
	Dr. A.D. Ahluwalia	Ph.D.	-do-	Palaeontology, Quarternary Geology	-do-	
	Dr. G.S. Gill	PH.D.	-do-	Neotectonics, Hydrogeochemistry, Soil Chemistry.	-do-	

12. List of senior Visiting Fellows, adjunct faculty, emeritus professors:

Sr. Visiting Fellows

1. D.K. Chadha(Retd.)
2. Dinesh Pande(Retd.)
3. S.D. Dhiman(Chairman, CGWB)

Emeritus Professors

- 1.Ashok Sahni(Retd.) PU Emeritus
- 2.S.B. Bhatia(Retd.) –do-
- 3.Naresh Kochhar(Retd.) UGC
- 4.K.P. Singh(Retd.) UGC

13. Percentage of classes taken by temporary faculty – programme-wise information
Re-employed teachers-As per UGC norms.
14. Programme-wise Student Teacher Ratio: **12:1**
15. Number of academic support staff (technical) and administrative staff: sanctioned, filled and actual

2009-10

Sanctioned	46
Filled	--
Actual	32

2010-11

Sanctioned	47
Filled	--
Actual	28

2011-12

Sanctioned	47
Filled	--
Actual	29

2012-13

Sanctioned	44
Filled	2
Actual	26

16. Research thrust areas as recognized by major funding agencies:

Research thrust areas as recognized by major funding agencies

Palaeontology-Stratigraphy-Petrology-Tectonics; Environmental Geology-
Hydrogeology Engineering Geology (2009-2011).

Palaeontology-Stratigraphy, Petrology, Hydrogeology- Environmental Geology
(2012-13)

17. Number of faculty with ongoing projects from a) national b) international funding agencies and c) Total grants received. Give the names of the funding agencies, project title and grants received project-wise.

Number of Faculty with ongoing projects. (2009-2013)

Sponsor	Title	Funds Sanctioned	Duration From ...to...	Principal Investigator and Research Team
DST (NRDMS) New Delhi	Surveying and Mapping of the Landslide Prone Area between Rampur to Jhakri along the highway NH-22 in H.P.	Rs.17.00 lacs	2009-2012	Prof. G.S.Gill
DST (NRDMS) New Delhi	Topographical and Geological Mapping of Jalan Slide, Near Dadahu on Nahan-Renuka road, Sirmour District, H.P.	Rs.14.25 lacs	2009-2012	Prof. Naval Kishore(P.I.) Co-P.I.s Dr. Ramesh K. Kakar, Dr. Rakesh Kumar Dutta, Dr. Rajeshwar Singh Banshtu
UGC	Water logging and chemical quality problems of ground water with special reference to occurrence of fluoride hot spots and their impact on human health in Muktsar-Malaut-Talwadi Sabo belt in South West part of Punjab State, India.	7.19 lacs	Sept.2012- Sept.2015	Prof. K.P. Singh(P.I) Co-P.I.s Prof. Naval Kishore Prof. Naresh Tuli

UGC	Evaluation of chemical quality of ground water in parts of South West Punjab and adjoining areas of Haryana in relation to health hazards".(3 years)	Rs. 7.37 lacs	December, 2010 for 3 years	Prof. Naval Kishore(P.I) Co.P.I.: Naresh Kochhar, Veena Dadwal and Madhuri S. Rishi
DST PURSE	Fossil Mammals as Monsoon Indicators	6.8 lacs	2010-2012	Dr. Rajeev Patnaik
Wenner-Gren Foundation (USA)	Early Pleistocene Environments & Archaeology in Central India	\$20,000/-	2011-2014	Dr. Rajeev Patnaik (Co-PI)
DST PURSE, PU	Biotic and Palaeoclimatic Events During Late Mesozoic-Early Cenozoic of East West and Central Narmada River Region”	Rs.21.00 lacs	2009-2012	Dr. Ashu Khosla
DST PURSE, PU	Palaeobiota with Special Reference to Mammals from Late Cretaceous Deccan Volcano-Sedimentary Sequences of Central India.	Rs.2.00 lacs	2010-2011	Dr. Ashu Khosla
DST, New Delhi	Delineation of Cretaceous – Tertiary Boundary on the Basis of Biotic Assemblages from Central India and Their Palaeobiogeographical Significance	Rs.19.90 lacs	2009-2012	Dr. Ashu Khosla
DST, New Delhi	Albitisation of the Metamorphics & associated A-type Granites in the Khetri Complex of the Northern Aravalli Orogen: Geochemical & Isotopic Constraints.	Rs.20.23 lacs	2010-2012	Dr. Parampreet Kaur
DST (PURSE, PU)	Magmatism & Metallogeny in Betul Mobile Belt, Central Indian Tectonic Zone, India.	Rs.15-00 lacs	2009-2012	Dr. Gurmeet Kaur(P.I.) Dr. Naval

Geological Survey of India, ISSN:0974-6889.

- * Number listed in International Database (For *e.g.* Web of Science, Scopus, Humanities International Complete, Dare Database - International Social Sciences Directory, EBSCO host, etc.)

Scopus: 6-192

- * Citation Index – range / average 220
- * SNIP
- * SJR
- * Impact Factor – range / average **0.5-10**
- * h-index **7**

23. Details of patents and income generated : **Nil**

24. Areas of consultancy and income generated : **Rs.7.00 lacs(Petrographic & Petfabric analysis)**

25. Faculty selected national/internationally to visit other laboratories/institutions/industries in India and abroad

National

1. Prof. Rajeev Patnaik
 - i) EPTRI, Hyderabad
 - ii) Asiatic Society, Kolkata
 - iii) Geological Society of India, Bangalore
 - iv) Wadia Institute of Himalayan Geology, Dehradun
2. Dr.Gurmeet Kaur :
 - i) IIT, Kharagpur, West Bengal

International

1. Prof. Rajeev Patnaik
 - i) Beijing
 - ii) Kyoto
2. Dr.Gurmeet Kaur :
 - i) Lakehead University, Thunder bay, Ontario, Canada,

26. Faculty serving in

a) National committees

1. Prof. Naresh Tuli

Acted as a Resource Person in Academic Staff College Orientation Course in 2011-13

2. Prof. Naval Kishore

Member, UGC Panel for Add-on-Course and Minor Research Project 2009

Member, UGC for Special Assistance programme (SAP)
Prof. Rajeev Patnaik

Journal of Human Evolution, Elsevier (2009-12)

3.Dr.B.P.Singh
Public Service Commission, Rajasthan (Paper Setter)
b) International Committees
Dr.Gurmeet kaur
NWG Member for IGCP (Geoscience) 557

Dr.B.P.Singh
Corresponding Member of International subcommission on Cambrian
Stratigraphy (ISCS)

27. Faculty recharging strategies (UGC, ASC, Refresher / orientation programs, workshops, training programs and similar programs).
28. Student projects
 - percentage of students who have done in-house projects including inter-departmental projects : **In M.Sc.II year 100%.**
 - percentage of students doing projects in collaboration with other universities / industry / institute: **Nil**
29. Awards / recognitions received at the national and international level by
 - Faculty
 - Doctoral / post doctoral fellows
 - Students
30. Seminars/Conferences/Workshops organised(National/International)(2009-2013)
 1. Seminar on “Petroleum Geosciences: Insights and Challenges”was organised in the department on 20-2-2010 with the UGC grant sanctioned under CAS-SAP. About nine faculty members , Research students and some invited guests attended.
 - 2.National Workshop on “Climate Change and its Impact on Water Resources-Adaptation Issues” was organised in the deptt.in collaboration with Global Hydrogeological Solutions, New Delhi, on 23-11-2010. All the faculty members, Research students and invited guests attended.
 - 3.A Workshop on “Water Availability and Management in Punjab”WAMIP-2010 was organized in the department jointly with National Institute of Hydrology, Roorkee on 13-15, 2010. All the faculty members, Research students and invited guests attended.
 - 4.International Workshop on “Geothermal Development in Northwest Himalayas” was organized in collaboration with Deptt. Of Civil Engineering, NIT, Hamirpur in association with INDNOR Project (an Indo Norway Joint Venture on 16-2-2011. All the faculty members, Research students and invited guests attended.

31. Code of ethics for research followed by the departments : **At the Univ. Level.**

32. Student profile programme-wise:

Name of the Programme (refer to question no. 4)	Applications received	Selected		Pass Percentage	
		Male	Female	Male	Female
UG	90	42	48	19%	79%
PG	55	25	30	72%	87%

33. Diversity of students

Name of the Programme (refer to question no.4)	% of students from the same university	% of students from other universities within the State	% of students from universities outside the State	% of students from other countries
UG	91%	---	9%	---
PG	96%	---	4%	---

34. How many students have cleared Civil Services and Defense Services examinations, NET, SET, GATE and other competitive examinations? Give details category-wise.

NET = 7 (Gen-3, SC/ST=4)

35. Student progression

Student progression	Percentage against enrolled
UG to PG	100%
PG to M.Phil.	0
PG to Ph.D.	20%
Ph.D. to Post-Doctoral	0
Campus selection	15%

Other than campus recruitment	
Entrepreneurs	0

36. Diversity of staff

Percentage of faculty who are graduates	
of the same university	83%
from other universities within the State	
from universities from other States	17%
from universities outside the country	

37. Number of faculty who were awarded M.Phil., Ph.D., D.Sc. and D.Litt. during the assessment period : **All faculty members are Ph.D. holders.**

38. Present details of departmental infrastructural facilities with regard to

- Library :**5 computers with internet facility for students, Librarian.**
- Internet facilities for staff and students: **60 computers with internet facilities**
- Total number of class rooms : **4**
- Class rooms with ICT facility :**4**
- Students' laboratories :**3**
- Research laboratories :**11**

39. List of doctoral, post-doctoral students and Research Associates

- from the host institution/university : **5 candidates were awarded Ph.D.**
- from other institutions/universities

40. Number of post graduate students getting financial assistance from the university:**6**

41. Was any need assessment exercise undertaken before the development of new programme(s)? If so, highlight the methodology. **Nil**

42. Does the department obtain feedback from :

- faculty on curriculum as well as teaching-learning-evaluation? If yes, how does the department utilize the feedback? **Yes, in consultation with the faculty to revise curriculum.**
- students on staff, curriculum and teaching-learning-evaluation and how does the department utilize the feedback? **Yes, revised syllabus for the betterment of students. Discussion regarding the placement opportunities.**
- alumni and employers on the programmes offered and how does the

department utilize the feedback? **Yes, organizing get together programme for more interaction. They are invited for participation in the seminar/conference , etc.**

43. List of distinguished alumni of the department.

1. Anil K. Mathur, Director, Project, STMHP, Op.P.H.& H.P. G.S. Plot No.3, Sector 33, Chd. Res:1117-A, Sector 46B, Chandigarh.
2. Devinder Singh Arora, Prof.(Retd) , Res:669/8-B, Chandigarh.
3. S.S. Kanwar, Dy. DG.(Retd.) GSI, Res:803, Sector-38-A, Chandigarh.
4. S.K. Tandon, University of Delhi and Mathematical Science Foundation. Res:A-566C, Sushan Lok (Phase-I), Gurgaon.
5. Sushil Kumar Talwar, HG, 10620-107 It, Edmonton, AB Canada/Geologists, North Mine Geology, Syncrude Canada Ltd., P.O.Bag 4009, MD M202Fort McMurray, AB T9H3L1. Res:2879, Sector 47-C, Chandigarh.

44. Give details of student enrichment programmes:

Special Lectures organized (2009-2013)

LECTURES DELIVERED BY VISITING SCHOLARS/EXPERTS (2009-10)

Name and Address	Topic & Date
Prof. ULF Linnemann, Senckenberg Museum, Dresden Germany.	Zircon Dating 15-8-2009
Prof. Jai Krishna, Head, Geology Deptt., BHU, Varanasi	High Resolution Geology and Sequence Stratigraphy in Hydrocarbon Exploration 24-8-2009
Dr. Bannu R. Neupane, Regional Programme Specialist for South Asia, UNESCO	Interaction with faculty and students on important matters relating to subject Geology and collaboration between Panjab University and UNESCO. 22-9-2009
Dr. V. Balaram, National Geophysical Research Institute, Hyderabad	Occurrences and Exploration Studies of Platinum Group Elements (PGE) in India-An Overall Scenario

	12-10-2009
Dr. V. Balaram, National Geophysical Research Institute, Hyderabad	Tackling Climate Change through Standards 13-10-2009
Prof. Jai Krishna, Head, Geology Deptt., BH, Varanasi	The Making of the Himalayas (chronicled through ammonoids as chronometric Palaeoclimatic & Palaeobathymetric sensors). 25-11-2009
Dr. Ellen Marie Douglas, Asstt. Professor, Hydrology, Univ. Of Massachusetts, Boston.	Groundwater Modelling 11-6-2010

LECTURES DELIVERED BY VISITING SCHOLARS/EXPERTS (2010-11)

Name and Address	Topic & Date
Dr. Peter Clift, University of Aberdeen, U.K.	“Erosion and the evolution of rivers in the Western Himalaya since the last glacial maximum” (12-8-2010).
Dr. KOS Andrew, Sr. Scientist, Deptt. of Earth Sciences, ETH, Zurich (Switzerland).	“Landslides and its mitigation” (26-11-2010).

LECTURES DELIVERED BY VISITING SCHOLARS/Experts (2012-13)

Name and Address	Topic & Date
Prof. Javed Malik, IIT, Kanpur.	Paleoseismic and GPS Studies for active fault mapping and slip rate estimation, NW-Central Himalaya, India. 25.7.2012.
Prof. Kiyoshi Takano, University of Tokyo.	About the building vibration sensor system. 25.7.2012

Prof. Pradeep Kumar Ramacharla, IIT, Hyderabad.	Factors influencing building performance during earthquakes.5.7.2012
Dr.Alexander G.Web, Louisiana State University, L.A., U.S.A.	Sediment Transport in the Indus River since the last Glacial maxima. 2.8.2012
Dr.D. Srinagesh, Chief Scientist, Head, NGRI, Hyderabad.	Introduction to Seismology. 28.9.2012
Dr. R.K. Chadha, NGRI, Hyderabad.	Earthquakes in India; Where do we stand? 29.10.2012
Dr. D. Srinagesh, NGRI, Hyderabad.	Short Films on Earthquake Disasters. 29.10.2012
Dr. Javed Malik, IIT, Kanpur.	Active Fault Scenario vs Town Planning. 29.10.2012
Dr. Oki, University of Tokyo, Japan.	2011 Tsunami Disaste in East Japan; Lessons learned. 29.10.2012
Dr. R. Pradeep Kumar, IIT, Hyderabad.	Experiences of 2001 Bhuj, 2011 Sikkim earthquakes vis-a-vis Engg Practices. 29.10.2012
Dr. D. Srinagesh, Chief Scientist, Head, NGRI, Hyderabad.	Earthquake hazards and Disaster mitigation. 19.3.2013

45. List the teaching methods adopted by the faculty for different programmes.
Conducting field work, Laboratory work and Interactive Smart Boards.
46. How does the department ensure that programme objectives are constantly met and learning outcomes are monitored?
47. Highlight the participation of students and faculty in extension activities.

There is a Pick & Hammer Club which is an Organization of Student and Faculty to conduct various Cultural and Sports events in the department. Faculty members are involved in the teaching assignment of Refresher Courses organised by University and other organizations. Our Museum is opened to all interested persons, school and college students. The faculty provides hands-on knowledge information.

48. Give details of “beyond syllabus scholarly activities” of the department.
The department organized various Seminars/Conferences/Workshops during these years. Various Memorial Lectures were organized which was attended by Faculty members, research students and invited Guests. The Pick and Hammer Club of the department organized various cultural functions for the overall development of students.
49. State whether the programme/ department is accredited/ graded by other agencies? If yes, give details. **No.**
50. Briefly highlight the contributions of the department in generating new knowledge, basic or applied.
Faculty members are actively engaged in their research activities in the new areas like climate, mineral exploration & Environment awareness.
51. Detail five major Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department.
***Strengths:* Our department is the oldest existing Centre of Advanced Studies since 1963 in the country. Existence of necessary infrastructure in thrust areas, where well developed laboratories particularly for students & research scholars. Students lecture rooms are fitted with the state of arts , digital projectors, screens for the teaching purposes of students.**
***Opportunities:* The teachers make full utilization of Institutes where they collaborate; and most of them work in the laboratories of their research work in India and abroad. Necessary opportunities also exist for each and everyone to get associated with Conferences, Workshops, etc. Field grants are freely available for the teachers and students for the usage.**
***Challenges:* More faculty needs to be added particularly at the middle and higher levels in the field of Applied and Core geology. More opportunities for students as far as their placement is concerned.**

52. Future plans of the department.

1. The Department will take initiative to fill the vacant faculty positions so that the faculty strength, which is less than 50% of the sanctioned posts at present, increases to a satisfactory level.
2. To appoint the Chair Professor funded by ONGC is in pipeline.
3. The Department will take initiative to sign MOUs with other research institutes.
4. More emphasis will be laid on the interdisciplinary research especially on the challenging areas of present scenario.