

Record of percentage change in Syllabus

Name of the Department : Department of Geology

Name of the Program : M.Sc (Geology)

Paper No	Name of Paper	Whether included in year 2013-14 (Yes/No)	Whether included in year 2017-18 (Yes/No)	Percentage revised in Content #	Year of introduction or revision*	Remark (pls. mark which paper is a value added or skill development paper)
01	GEOMORPHOLOGY and REMOTE SENSING & GIS	Yes	Yes	05	2015	
02	GENERAL GEOLOGY, GEOTECTONICS & STRUCTURAL GEOLOGY	Yes	Yes	-	-	
03	MINERALOGY, CRYSTALLOGRAPHY, & OPTICAL MINERALOGY	Yes	Yes	15	2015	
04	PRACTICAL	Yes	Yes	-	-	
06	IGNEOUS PETROLOGY & GEOCHEMISTRY	Yes	Yes	60	2015	Geochemistry is added in 2015.
07	SEDIMENTARY PETROLOGY & METAMORPHIC PETROLOGY	Yes	Yes	-	-	
08	HYDROGEOLOGY, ENGINEERING GEOLOGY & ENVIRONMENTAL GEOLOGY	Yes	Yes	40	2015	
09	PRACTICAL	Yes	Yes	-	-	
10	ECONOMIC GEOLOGY	Yes	Yes	60	2015	
12	STRATIGRAPHY & PALAEOLOGY	Yes	Yes	-	-	
13	ADVANCED HYDROGEOLOGY	Yes	Yes	-	-	Skill Development paper
	FUEL GEOLOGY			30	2015	
	SEDIMENTOLOGY			-	-	
14	PRACTICAL (ELECTIVE)	Yes	Yes	-	-	

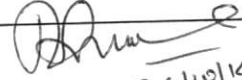
	PAPER)					
15	PROJECT ORIENTED DISSERTATION	Yes	Yes	-	-	Skill Development paper
Overall Change =		Total Change in Percentage				
		Number of Papers offered in Year 2017-18				

Please Consult the attached Performa for filling-up the data.

*Mention all the years in which revisions have been carried out even in case of course/paper.

If the departments are running more than one programs, please do the same for all of them in the format given above.

Signature



Name of the HoD

26/10/16

Head of the Department of Geology

Patna University, Patna-800005

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Proforma for Filling-Up Data Related to the Revision in Courses/Paper

S.No.	Name of the Course/Paper with Code	Details of the remove content	Details of the added content
01	<i>GEOMORPHOLOGY and REMOTE SENSING & GIS</i>	A brief study of Paleo-geomorphology	---
02	<i>GENERAL GEOLOGY, GEOTECTONICS & STRUCTURAL GEOLOGY</i>	---	---
03	<i>MINERALOGY, CRYSTALLOGRAPHY, & OPTICAL MINERALOGY</i>	<p><i>-Magma – nature, types, composition, generation and emplacement with special reference to tectonic environment of evolution</i></p> <p><i>-Classification of Igneous rocks</i></p> <p><i>-Diversity in Igneous rocks</i></p> <p><i>-Major Igneous Activities in India – Dalma Volcanics, Malani Rhyolites, Deccan & Rajmahal volcanics</i></p>	<p><i>-Crystal Structure, diagnostic properties, paragenesis and alteration of Feldspar, Mica, Silica, Olivine, Pyroxene and Amphibole groups.</i></p> <p><i>-Crystal structure, diagnostic properties, paragenesis, alteration of rock groups- Alumino – silicates, Felspatholids, Epidote, Garnet and Chlorite.</i></p>
04	<i>IGNEOUS PETROLOGY & GEOCHEMISTRY</i>	<p><i>-Detailed study of the following rock-forming mineral groups : Olivine, Pyroxene , Amphibole Garnet.</i></p> <p><i>- Detailed study of the following rock-forming mineral groups : Alumino – silicates, Felspatholids, Epidote, Chlorite.</i></p>	<p><i>-Magma – nature, types, composition, generation and emplacement with special reference to tectonic environment of evolution</i></p> <p><i>-Crystallisation of magma – Bowen's Reaction series ; Fractional crystallisation</i></p> <p><i>-Classification of Igneous rocks</i></p> <p><i>-Diversity in Igneous rocks</i></p> <p><i>-Major Igneous Activities in India – Dalma Volcanics, Malani Rhyolites, Deccan & Rajmahal volcanic</i></p> <p><i>-Geochemical differentiation of the</i></p>

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			<p><i>Earth</i></p> <ul style="list-style-type: none"> -Distribution of Elements Geochemical classification of elements -Structure & composition of the earth -Geochemistry of Lithosphere, Atmosphere, Hydrosphere & Biosphere -Elementary principles of Thermodynamics -Geochemical cycle
05	<i>SEDIMENTARY PETROLOGY & METAMORPHIC PETROLOGY</i>	---	---
06	<i>HYDROGEOLOGY, ENGINEERING GEOLOGY & ENVIRONMENTAL GEOLOGY</i>	<ul style="list-style-type: none"> -Engineering geological investigations – concept and domain -Influence of geological conditions of foundation and design of buildings. -Geo-exploration Geological, Geophysical, Geochemical and Geobotanical methods of prospecting -Mineral Economics : concept & significance -Methods of mineral beneficiation & are-dressing -Conservation of minerals : Strategic, Critical & Essential minerals. -National Mineral Policy -Low of the Sea beds for marine 	<ul style="list-style-type: none"> -Groundwater quality: physical and chemical characteristics; arsenic and fluoride contamination. -Environmental impact of urbanization, open cast mining and radioactive waste disposal. -Soil profile & soil quality degradation due to irrigation, fertilizer and pesticides. -Impact assessment of degradation & contamination of water quality due to industrialization & urbanization. -A brief study of the following : <ul style="list-style-type: none"> - Disposal of solid waste - Thermal pollution & Noise-pollution - Pollution of rivers - Conservation of mineral resources.

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		<p><i>mineral resources.</i></p> <ul style="list-style-type: none"> -Processes of formation of economic mineral deposits -Classification of mineral deposits -Controls of Ore localization -Mineral paragenesis & Zoning -Metallogenetic epochs & provinces with special reference to India -Fluid Inclusions in Ores -Geothermometry & Isotopic studies in Ore geology -Plate Tectonics & Metallogeny 	<ul style="list-style-type: none"> - Global warming and sea level changes
07	ECONOMIC GEOLOGY	<ul style="list-style-type: none"> -Concept of Environmental Geology. -Bsics of natural Ecosystem on the Earth and their mutual interrelation & interaction with Atmosphere, Hydrosphere, Lithosphere & Biosphere. -Natural Hazards – Floods, Landslides Coastal Hazard, Earthquake & their mitigation. -Environmental impact of urbanization, open cast mining and 	<ul style="list-style-type: none"> -Mineral Economics : concept & significance -Mineral beneficiation & Ore-dressing -Controls of Ore localization -Mineral paragenesis & Zoning -Metallogenetic epochs & provinces with special reference to India

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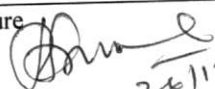
		<p><i>radioactive waste disposal.</i></p> <p><i>-Soil profile & soil quality degradation due to irrigation, fertilizer and pesticides.</i></p> <p><i>-Impact assessment of degradation & contamination of water quality due to industrialization & urbanization.</i></p> <p><i>--A brief study of the following :</i></p> <ul style="list-style-type: none"> <i>- Disposal of solid waste</i> <i>- Thermal pollution & Noise-pollution</i> <i>- Pollution of rivers</i> <i>- Conservation of mineral resources.</i> <i>- Global warming and sea level changes</i> <p><i>-Cosmic abundance of elements & nuclides.</i></p> <p><i>-Geochemical classification of elements.</i></p> <p><i>-Composition of planets & meteorites</i></p> <p><i>-Structure & composition of the earth</i></p> <p><i>-Geochemistry of lithosphere, atmosphere, hydrosphere & Priosphere</i></p> <p><i>-Elementary principles & Thermodynamics</i></p> <p><i>-Geochemical cycle</i></p> <p><i>-Isotope geochemistry of carbon & oxygen and its application to geology.</i></p>	<p><i>- Plate Tectonics & Metallogeny</i></p> <p><i>-Conservation of minerals : Strategic, Critical & Essential minerals.</i></p> <p><i>-National Mineral Policy</i></p> <p><i>-Law of the Sea beds for marine mineral resources.</i></p>
08	STRATIGRAPHY & PALAEOLOGY	---	---

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09	ADVANCED HYDROGEOLOGY	---	---
10	FUEL GEOLOGY	<p>-Concept of Atomic Energy and its significance</p> <p>-Mode of occurrence and associations of atomic minerals</p> <p>-Methods of exploration for atomic minerals</p> <p>-Productive geological horizons in India</p> <p>-Atomic fuels and environment</p>	<p>-Fundamental concepts of Sequence Stratigraphy –</p> <ul style="list-style-type: none"> ○ depositional sequence, ○ types, boundaries, flooding surfaces, system tracts, ○ aggradation, progradation, retrogradation etc. <p>- Seismic sequence stratigraphy</p> <p>- Sequence stratigraphy and Basin Analysis</p>
11	SEDIMENTOLOGY	---	---
12	PROJECT ORIENTED DISSERTATION	---	---

Signature 
 Name of the HoD 26/10/18

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 Patna University, Patna-800005

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