



Proceedings of the Principal, Government College [A], Rajamahendravaram

Present: Dr.R.David Kumar Swamy, M.Sc, M.Phil., Ph.D

Re. No: Spl./Acad.Cell-GC[A]-RJY/2017-23, Dated: 4 January 2017

Sub:- Government College [A], Rajahmundry – **Boards of Studies (BoS)** – Nomination of Members - Orders Issued.

Ref:- UGC Autonomous Guidelines 2012 -17.

ORDER:

The Principal, Government College [A], Rajamahendravaram is pleased to constitute **Board of studies in GEOLOGY** for framing the syllabi in Geology subject for all semesters duly following the norms of the UGC Autonomous guidelines.

S. No	Name	Designation
1	Lt. D. Rudra, Lecturer In- Charge/HoD, Department of Geology, GC[A], Rajamahendravaram	Chairman
2	All Faculty members in the department	Member
3	Dr. C. Ravi, Lecturer in Geology, CRR College, Eluru	Subject Expert
4	Dr. P. Srinivasulu, O/o Commissioner of Collegiate Education, Vijayawada	Subject Expert
5	Dr. Y. Srinivasa Rao, Dean, CDC, Adikavi Nannaya Univrsity, Rajamahendravaram	University Nominee
6	P.R. Bhavana, DGM, ONGC, Rajamahendravaram	Expert from Industry/Corporate Sector
7	G. Achyuta Varalakshmi	Student Nominee

The above members are requested attend the BOS meetings and share their valuable views, suggestions on the following functionaries:

- Prepare syllabi for the subject keeping in view the objectives of the college, interest of the stake holders and national requirement for consideration and approval of the Academic Council
- Suggest methodologies for innovate teaching and evaluation techniques
- Suggest panel of names to the Academic council for appointment of examiners
- Coordinate research, teaching, extension and other activities in the department of the college.

The term of the members will be two years from the date of the nomination. The Chairman of the BoS (HoD/lecturer In-Charge of the department) is directed to coordinate with the Principal of the College and conduct BoS meetings as and when necessary, but at least once a year.


PRINCIPAL.

**GOVERNMENT COLLEGE [A]
RAJAHMUNDRY**

Copy to:

- The above individuals
- File



**Composition of Board of Studies in Geology
Government College [Autonomous]
Rajahmendravaram**

S. No	Name	Designation
1	Lt. D. Rudra, Lecturer In- Charge/HoD, Department of Geology, GC[A], Rajamahendravaram	Chairman
2	Dr. M.R. Goutham	Faculty Member
3	Dr. C. Ravi, Lecturer in Geology, CRR College, Eluru	Subject Expert
4	Dr. P. Srinivasulu, O/o Commissioner of Collegiate Education, Vijayawada	Subject Expert
5	Dr. Y. Srinivasa Rao, Dean, CDC, Adikavi Nannaya University, Rajahmendravaram	University Nominee
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Department of Geology
Government College [A], Rajamahendravaram

Allocation of Credits

Course: B.Sc.

Subject: Geology

S. No	Semester	Title of the Paper	Hrs./week	Max. Marks	Mid Sem. Exam	Credits
1	Semester-I	Paper-I- Physical Geology & Crystallography	4	60	40	3
2	Lab-I	Physical Geology & Crystallography	2	50	--	2
3	Semester-II	Paper- II- Mineralogy& Optical Mineralogy	4	60	40	3
4	Lab-II	Mineralogy & Optical mineralogy	2	50	--	2
5	Semester-III	Paper -III- Petrology (Igneous, Sedimentary and Metamorphic)	4	60	40	3
6	Lab-III	Petrology (Igneous, Sedimentary and Metamorphic)	2	50	--	2
7	Semester-IV	Paper-IV- Structural Geology & Stratigraphy	4	60	40	3
8	Lab-IV	Structural Geology	2	50	--	2
9	Semester V	Paper-V- Palaeontology & Indian Geology	4	75	25	3
10	Lab -V	Palaeontology & Indian Geology	2	50	--	2
11	Semester V	Paper VI – Economic Geology	3	75	25	3
12	Lab VI	Economic Geology	2	50	--	2
13	Semester VI	Paper VII- Groundwater : Geology & Exploration (<i>Elective</i>) (OR) Field Geology (<i>Elective</i>)	3	75	25	3
14	Lab VII	Groundwater Geology & Exploration (OR) Field Geology	2	75	25	2
15	Semester VI (Cluster 1)	Paper VIII- <i>Cluster Electives*</i>				
		VIIIA -1: Introduction to Mineral Exploration	3	75	25	3
		VIIIA-2: Environmental	3	75	25	3
		VIIIA-3: Introduction to Remote Sensing & GIS	3	75	25	3
16	Cluster 1 Lab	VIIIA -1: Mineral Exploration	2	50	--	2
		VIIIA-2: Environmental Geology	2	50	--	2
		VIIIA-3: Project Work	2	50	--	2
17	Semester VI (Cluster 2)	VIIIB-1: Elements of Geochemistry	3	75	25	3
		VIIIB-2: Introduction to Mining Geology	3	75	25	3
		VIIIB-3: Introduction to Remote Sensing & GIS	3	75	25	3
18	Cluster 2 Lab	VIIIB-1: Geochemistry	2	50	--	2
		VIIIB-2: Field Report	2	50	--	2
		VIIIB-3: Project work	2	50	--	2

Chairman, BOS



(D. RUDRA)

The Board of Studies of **GEOLOGY** met on 10 April 2017 at 11-00 A.M in the department of Geology on under the chairmanship of Lt.(Smt) D. Rudra and the following resolutions were adopted.

Resolutions

1. It is resolved to continue with the Modular & Choice Based Credit System (CBCS) for the Academic Year 2017-18 by adopting syllabus prescribed by Adikavi Nannaya University, Rajamahendravaram for I and II semesters (I year) and approve the syllabus and model question papers for the same.
2. It is also resolved to approve and follow the syllabi for II & III year B.Sc. (III, IV, V & VI semesters) in the earlier pattern, i.e. approved in BOS meeting held on 1 April 2016.
3. It is resolved to approve the model question papers for the I semester with 60 marks for Semester end examination and 40 marks for internal assessment as approved by the Staff Council of the College. The split up of the marks is shown below. The existing examination pattern will be followed for I and II year students (i.e. for I, II, III and IV Semesters).

Semester End Exam (60 Marks)		Internal assessment (40 Marks)
PART	Allotted Marks	
PART A: This Part contains 4 Essay type internal choice questions numbering 1 to 4 will be asked Unit 1 to 5. Student has to answer all the 4 questions. Each question carries 8 marks.	4 x 8 = 32 Marks Question 1 A or B from Unit I Question 2 A or B from Unit II Question 3 A or B from Unit III Question 4 A from Unit IV and or B from Unit V	Written Test : 25 Marks Assignments: 5 Marks Seminar: 5 Marks Viva-Voce: 5 Marks
PART B: This Part contains 8 Short answer questions numbering 5 to 12 will be asked covering all the units. Student has to answer any 5 out of 8 questions. Each question carries 4 marks.	5 x 4 = 20 Marks Questions 5, 6,7,8,9 are from Units I, II, III, IV and V respectively. Questions 10,11, 12 are from all 5 units depending on the weightage of the unit	
PART C: This Part carries 8 marks. 4 very short answer questions numbering 13 to 16 will be asked covering all the units. Student has to answer all the questions Each question carries 2 marks	4 x 2 = 8 Marks	
Total Marks	60	40

4. It is resolved to approve the list of examiners & paper setters for 3 years
5. It is resolved to make Geological Field Trips compulsory for III B.Sc. Students as per the norms given by the affiliating university.



6. It is resolved to strictly follow the Annual Curricular Plan submitted to the College
7. It is resolved to continue the in house news letter “*GeoNews*” which was started during last academic year (2014-15).
8. It is resolved to dispense with the *Environmental Geology*’ which is ‘Inter-disciplinary elective’ for the second year non geology students, which was initiated from the academic year 2015-16.
9. It is resolved to put forth before BOS the proposal of starting a Certificate/Diploma course in “**Groundwater Exploration**” depending on the collaboration with A.P. State Groundwater Board.

The following members were present.

S. No	Name	Designation	Signature
1	Lt. D. Rudra, Lecturer In- Charge/HoD, Department of Geology, GC[A], Rajahendravaram	Chairman	
2	Dr. M.R. Goutham	Faculty Member	
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7	G. Achyuta Varalakshmi	Student Nominee	

Chairman, BOS
(D. RUDRA)

List of Examiners & Paper Setters



S No	Name of the Examiner/Paper Setter	College	Experience	Paper Taught
1	Dr. C. Ravi	Sir CRR College, Eluru	36 Yrs	Economic Geology, Structural Geology, Petrology
2	Sri P.C. Swaroop	Sir CRR College, Eluru	33 Yrs	Physical Geol., Mineralogy, Palaeontology, Groundwater Geology
3	Sri N. Ravi Kumar	Sir CRR College, Eluru	30 Yrs	Crystallography, Indian Geology
4	Sri A. Surendra	DNR College, Bhimavaram	33 Yrs	All branches of Geology
5	Sri P.A.N. Raju	Maharaja College, Vizianagaram		
6	Sri U. Padmanabha Raju	Maharaja College, Vizianagaram		

University Nominee:

(Y. SRINIVASA RAO)

Industrial Nominee:

(P.R. BHAVANA)

Local Nominee:

(C.RAVI)

Staff Member:

(M.R. GOUTHAM)

Chairman, BOS:

(D.RUDRA)

Government College (Autonomous), Rajamahendravaram.

CBCS -B. Sc. GEOLOGY Syllabus

SEMESTER- II



Paper-II- Mineralogy & Optical Mineralogy (75 Marks)

Unit - I

Definition of a mineral - classification of minerals into rock forming and ore forming minerals.

Physical properties of minerals - Colour, streak, transparency, lustre, form, hardness, tenacity, cleavage, fracture and, Specific gravity.

Silicate structures- isomorphism, solid solution, polymorphism, allotropy. Pseudomorphism and radioactivity

Study of physical properties, chemical properties and mode of occurrence of the following mineral groups: Olivine, Garnet and Aluminium silicates,

Unit-II

Study of physical properties, chemical properties and mode of occurrence of the following mineral groups: Pyroxenes, Amphibole and Mica

Unit-III

Study of physical properties, chemical properties and mode of occurrence of the following mineral groups: Quartz, Feldspars, and feldspathoids

Miscellaneous: Staurolite, Tourmaline, Zircon, Calcite, Corundum and Apatite.

Unit-IV

General Principles of optics, Refraction, Snell's law, Critical angle, total reflection,

Optical properties of minerals – isotropic and anisotropic

Polarised light, refractive index, Double refraction, uniaxial and biaxial minerals – Nicol prism and its construction – concept of crossed Nicols

Unit-V

Petrological microscope (Polarising) - its mechanical and optical parts – extinction, pleochroism and interference colours. Optical Properties of important minerals

Text books:

1. A textbook of mineralogy - E.S. Dana and W.E. Ford.
2. Rutleys elements of mineralogy - H.H. Reed
3. Essential of Crystallography - E. Flint.



References:

1. Manual of mineralogy - C.S. Hurlbut and C.Klein
2. Mineralogy for students - M.H. Batey.
3. An introduction to rock forming minerals - Deer, Howie, and zussman.
4. Elements of mineralogy - Mason and Bern.

LAB-II (Practicals)

50 Marks

At the end of Second semester

Practical-II- Mineralogy and Optical mineralogy

Study of physical properties and diagnostic features of the following mineral:

Quartz Jasper, Agate, Chalcedony, Amethyst, Orthoclase, Microcline, Albite, Anorthite, Labradorite, Enstatite, Hypersthene, Augite, Hornblende, Actinolite, Tremolite, Asbestos, Muscovite, Biotite, Phlogopite, Olivine, Epidote, garnet, Kyanite, Sillimanite, Andalusite, Beryl, Zircon, Apatite, Corundum, Talc, Gypsum, Calcite, Flurospar and Serpentine.

Study of optical properties of the following minerals:

Quartz, Orthoclase, Microcline, Plagioclase, Hypersthene, Augite, Tremolite, Hornblende, Miscovite, Biotite, Olivine, Epidote, Garnet, Kyanite, Beryl, Calcite, Chlorite, sillimanite, Leucite.