CRITERION- I

EVIDENCE(S), AS PER SOP

METRIC No. 1.2.2	Number of Programmes in which Choice Based Credit System (CBCS)/elective course system has been implemented during the year
• University letter stating implementation of CBCS by the institution • CBCS syllabi	

CBCS Syllabus

SN	Department	Pg. No.
1	University Notifications	1-13
2	School of Studies in Ancient Indian History Culture & Tourism & Hotel Management	14-15
3	School of Studies in Anthropology	16-19
4	School of Studies in Biotechnology	20-24
5	School of Studies in Chemistry	25-31
6	Swami Vivekanand Memorial School of Studies in Comparative Religion, Philosophy and Yoga	32-33
7	School of Studies in Computer Science & IT	34-37
8	School of Studies in Economics	38-39
9	School of Studies in Electronics and Photonics	40-43
10	School of Studies in Geography	44-45
11	School of Studies in Geology and Water Resource Management	46-48
12	School of Studies in History	49-50
13	School of Studies in Law	51-52
14	School of Studies in Library & Information Science	53-54
15	School of Studies in Life Science	55-62
16	School of Studies in Literature and Languages	63-71
17	Institute of Management	72
18	School of Studies in Mathematics	73-76
19	University Institute of Pharmacy	77-79
20	School of Studies in Physical Education	80-83
21	School of Studies in Physics and Astrophysics	84-91
22	School of Studies in Psychology	92-93
23	School of Regional Studies and Research	94-97
24	School of Studies in Sociology & Social work	98
25	School of Studies in Statistics	100-101
26	Centre for Women's Studies	102-104

पं. रविशंकर शुक्ल विश्वविद्यालय, रायपुर (छ.ग.)

दूरभाष : 0771–2262802 (अकादमिक विभाग), 0771–2262540 (कुलसचिव कार्यालय)

क्रं. 6436 / च्वॉयस बेस्ड सिस्टम /अका./2015 रायपुर दिनांक 30.11.2015

// अधिसूचना //

विश्वविद्यालय अध्ययन शालाओं के स्नातकोत्तर कक्षाओं के लिए सत्र 2015–16 से च्वॉयस बेस्ड पाठयक्रम को निम्नानुसार अधिसूचित किया जाता है निम्न दिशा निर्देश के आधीन अध्ययन शालाओं में अध्ययनरत छात्र पाठयक्रम का चयन कर सकेंगे। यह पाठयक्रम सम (सेमेस्टर जनवरी 2016 से जून 2016) से प्रभावी हो जावेगा।

च्वॉयस बेस्ड पाठयक्रम के लिए दिशा निर्देश–

1. च्वॉयस बेस्ड पाठयक्रम की कक्षायें प्रत्येक सप्ताह में तीन दिवस सोमवार, मंगलवार एवं बुधवार को एक–एक घंटे की लगाई जायेगी।
2. भाषा विज्ञान एवं दर्शन शास्त्र अध्ययन शालाओं की कक्षायें सुबह 9.00 से 10.00 बजे एवं अन्य सभी विभागों की कक्षायें सांय 4.00 से 5.00 बजे तक आयोजित की जायेगी।
3. छात्र द्वितीय एवं तृतीय सेमेस्टर में ही पाठयक्रम का चयन कर सकेंगे।
4. प्रत्येक छात्र को न्यूनतम छः क्रेडिट स्नातकोत्तर स्तर पर लेना अनिवार्य है, अधिकतम नौ से दस क्रेडिट तक का एक साथ या भिन्न–भिन्न विषयों का चयन छात्र कर सकेंगे।
5. उपरोक्त च्वॉयस बेस्ड पाठयक्रम के लिए आवेदन पत्र पृथक से तैयार किया गया है जो इस अधिसूचना के साथ संलग्न है।
6. च्वॉयस बेस्ड पाठयक्रम के परीक्षा एवं परीक्षा परिणामों के लिए अध्यादेश 170 प्रभावशील होगा।
7. विश्वविद्यालय अध्ययन शालाओं में अध्ययनरत छात्र ही इस पाठयक्रम में सम्मिलित हो सकेंगे।
8. च्वॉयस बेस्ड पाठयक्रम, द्वितीय एवं तृतीय सेमेस्टर के लिए पृथक–पृथक प्रदर्शित सूची के अनुसार ही चयन किया जा सकेगा।
9. च्वॉयस बेस्ड पाठयक्रमों को अतिरिक्त पाठयक्रम के रूप में माना एवं प्रदर्शित किया जावेगा, परन्तु छात्र द्वारा इसको क्वालिफाइ करना अनिवार्य होगा।

द्वितीय सेमेस्टर के लिए उपलब्ध च्वॉयस बेस्ड पाठयक्रम

S. No	Name of SoS	Course Title	Strength of Student	Target Group open for whom	Timing of Teaching	Professor Incharge ,Contact No.
1	Linguistics	भाषा विज्ञान की रूपरेखा	20 to 30	All Student	9 to 10	Prof. Vyas Narayan Dubey
2	Lib. Information Sc.	LibraryInformation Service-I	10 to 20	All Student	16 to 17	Dr. Maya Verma

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3	Philosophy	Introduction to Philosophy	10 to 20	All Student	9 to 10	Dr Bhagwant Singh-9893410919
4	Sociology	Basic Concept of Sociology	10 to 15	Soc. Sc.	16 to 17	Prof.P.K.Sharma-9926194254
5	Economics	Basic Economics Concept	10 to 20	All Student	16 to 17	Dr B L Sonekar-9826167427
6	Psychology	Psychology of everyday living	5 to 30	Arts/Soc.sc./ Sc.	16 to 17	Dr Priyamvada Shrivastava
7	Anciant Indian Hist.	Element of Anciant Indian History & Archaeology	10 to 35	Arts/Soc.sc./ Sc.	16 to 17	Dr Dinesh Nandini Parihar-9479207898
8	History	भारतीय स्वाधीनता आंदोलन की प्रमुख धाराएँ	15 to 40		16 to 17	Prof Abha R Pal-909893007956
9	Regional Studies	Regional Demography and Development	10 to 15	All Student	16 to 17	Prof M Mitra-9425207354
		Applied Research Methodology	10 to 15	All Student	16 to 17	Prof M Mitra-9425207354
10	Geography	Physical Geography	10 to 20	Soc. Sc/Sc.	16 to 17	Prof Sarla Sharma -8234022229
11	Physics	Basic Concept of Physics and Astrophysics	10 to 20	All Student	16 to 17	Dr N Brahme - 9691318995
12	Chemistry	Analytical Techniques & Data Analysis	5 to 10	Science	16 to 17	Prof K K Ghosh -9425216204
		Instrumental Methods of Analysis	5 to 10	Science	16 to 17	Prof K K Ghosh -9425216204
13	Statistics	Reliability and Life Testing	5 to 25	All Student	16 to 17	Dr Vyas Dubey - 9926115054
		Demography	5 to 25	All Student	16 to 17	Dr Vyas Dubey - 9926115054
14	Electronics	EL1- Basics of Electronics		All Student	16 to 17	Dr Kavita Thakur -9926801119
15	Geology	Fundamental of Geology	15 to 20	All Student	16 to 17	Prof Ninad Bodhankar - 9826515859
16	Maths	Elementry Mathematics for Finance and Economics	20 to 40	Economics/ Life Sc	16 to 17	Dr B S Thakur - 9827955810
17	Computer Sc.	Introduction to Software Organization and Operating System	10 to 20	Science	16 to 17	Dr V K Patle - 9993908607
		Computer Networking & Introduction to HTML	10 to 20	Science	16 to 17	Dr V K Patle - 9993908607
		Introduction to Computers and Programming Fundamentals	10 to 20	Science	16 to 17	Dr V K Patle - 9993908607
18	Bio Sc.	Vectpr Born Diseases	10 to 30	All Student	16 to 17	Prof A K Gupta - 9826236706 & Prof A Poddar - 9826643763

		Rhythms in Life	10 to 30	All Student	16 to 17	Prof A K Pati - 9826654829 & Dr A Parganiha - 9826551089
19	Anthropology	Basics in Anthropology	10 to 20	All Student	16 to 17	Dr Arun Kumar - 9755275425
20	Bio Technology	Basic Biotechnology	10 to 20	All Student	16 to 17	Prof S K Jadhav - 9827114218
21	Pharmacy	Intellectual Property Rights	10 to 15	All Student	16 to 17	Dr Swarnlata Saraf-9425522945
		Cosmetics Technology	10 to 15	All Student	16 to 17	Dr Swarnlata Saraf-9425522945
22	Management	Management Concept and Process	5 to 20	All Student	16 to 17	Dr Sanskriti Joseph-9425513506
23	Physical Education	Physical Education, Health and Fitness	10 to 20	All Student	16 to 17	Prof R Venugopal
24	Law	General Law-I	10 to 20	All Student	16 to 17	Dr C L Patel-9300633427

तृतीय सेमेस्टर के लिए उपलब्ध च्वॉयस बेस्ड पाठयक्रम

S. No	Name of SoS	Course Title	Strength of Student	Target Group open for whom	Timing of Teaching	Professor Incharge ,Contact No.
1	Linguistics	संप्रेषणपरक – हिंदी	20 to 30	All Student	9 to10	Prof. Vyas Narayan Dubey
2	Lib. Information Sc.	Lib. Information Service-II	10 to 20	All Student	16 to 17	Dr. Maya Verma
3	Philosophy	Scientific aspect of Yoga and Health	10 to 20	All Student	9 to 10	Dr Bhagwant Singh-9893410919
4	Sociology	Indian Vilage	10 to 15	Soc. Sc.	16 to 17	Prof.P.K.Sharma-9926194254
5	Economics	Indian Economics	10 to 20	All Student	16 to 17	Dr B L Sonekar-9826167427
6	Psychology	Mental Health; Prevention and Promotion	5 to 30	Arts/Soc.sc./Sc.	16 to 17	Dr Priyamvada Shrivastava
7	Anciant Indian Hist.	Element of Indian Culture & Religion	10 to 35	Arts/Soc.sc./Sc.	16 to 17	Dr Dinesh Nandini Parihar-9479207898
8	History	छत्तीसगढ़ की कला और संस्कृति	15 to 40		16 to 17	Prof Abha R Pal-909893007956
9	Regional Studies	Applied Research Methodology	10 to 15	All Student	16 to 17	Prof M Mitra-9425207354
10		Corporate Social Responsibility	10 to 15	All Student	16 to 17	Prof M Mitra-9425207354
	Geography	Regional Geography of India with Special reerence to Chhattisgarh	10 to 20	Soc. Sc/Sc.	16 to 17	Prof Sarla Sharma -8234022229

11	Physics	Basic Concept of Optics	10 to 20	All Student	16 to 17	Dr N Brahme - 9691318995
12	Chemistry	Respmamce Spectroscopy, Photochemistry & Organocatalysis	5 to 10	Science	16 to 17	Prof K K Ghosh - 9425216204
13		Chemistry of Biomolecues	5 to 10	Science	16 to 17	Prof K K Ghosh - 9425216204
	Statistics	Econometrics	5 to 25	All Student	16 to 17	Dr Vyas Dubey - 9926115054
14	Electronics	EL2- Fundamental of Biomedical Equipments	10 to 20	All Student	16 to 17	Dr Kavita Thakur -9926801119
15	Geology	Disaster Management	15 to 20	All Student	16 to 17	Prof N.Bodhankar - 9826515859
16	Maths	Elementry Mathematics for Social Sc.	20 to 40	Economics/ Life Sc	16 to 17	Dr B S Thakur - 9827955810
17	Computer Sc.	Computer Networking and Introduction to HTML	10 to 20	Science	16 to 17	Dr V K Patle - 9993908607
18		Essential of Invormation Technology	10 to 20	Science	16 to 17	Dr V K Patle - 9993908607
		Computer Nettworking & Introduction to HTML	10 to 20	Science	16 to 17	Dr V K Patle - 9993908607
	Bio Sc.	Plant Cosmetics	10 to 30	All Student	16 to 17	Dr. S C Naithani - 07712263038
19		Economic Zoology	10 to 30	All Student	16 to 17	Prof S K Prasad - 9425078327
	Anthropology	Application of Anthropology	10 to 20	All Student	16 to 17	Dr Arun Kumar - 9755275425
20	Bio Technology	Bioprocess Engineering	10 to 20	All Student	16 to 17	Prof S K Jadhav - 9827114218
21	Pharmacy	Drug standardization of Natural Origion	10 to 15	All Student	16 to 17	Dr Swarnlata Saraf-9425522945
22	Management	Management Communication	5 to 20	All Student	16 to 17	Dr Sanskriti Joseph- 9425513506
23	Physical Education	Yoga Education	10 to 20	All Student	16 to 17	Prof R Venugopal
24	Law	General Law-II	10 to 20	All Student	16 to 17	Dr C L Patel- 9300633427

कुलसचिव

पं. रविशंकर शुक्ल विश्वविद्यालय, रायपुर (छ.ग.)

दूरभाष : 0771–2262802 (अकादमिक विभाग), 0771–2262540 (कुलसचिव कार्यालय)

पृ.क्र. 6437/च्वॉयस बेस्ड सिस्टम/अका./2015 रायपुर दिनांक 30..11.2015

प्रतिलिपिः

1. अध्यक्ष, समस्त अध्ययन शाला, पं. रविशंकर शुक्ल विश्वविद्यालय रायपुर
2. अधिष्ठाता छात्र कल्याण मंडल, पं. रविशंकर शुक्ल विश्वविद्यालय रायपुर
3. उप कुलसचिव गोपनीय/परीक्षा/अकादमिक, पं. रविशंकर शुक्ल विश्वविद्यालय रायपुर
4. कुलपति जी के सचिव/कुलसचिव के निज सहायक, पं. रविशंकर शुक्ल विश्वविद्यालय रायपुर को सूचनार्थ एवं आवश्यक कार्यवाही हेतु अग्रेषित।

उप कुलसचिव(अका0)

च्वॉयस बेस्ड पाठयक्रम के लिए आवेदन पत्र

चयनित च्वॉयस बेस्ड पाठयक्रम का नाम .....

चयनित अध्ययन शाला का नाम .....

छात्र विवरण

फोटो

आवेदक का नाम (हिंदी में).....

(अंगरेजी में).....

छात्र के वर्तमान अध्ययन शाला का नाम.....

अध्ययनरत सेमेस्टर.....

प्रथम सेमेस्टर का रोल नं.....

पिता का नाम.....

माता का नाम.....

राष्ट्रीयता(यदि भारतीय न हो).....

जाति..... लिंग.....

जन्म तिथि (शब्दों में).....अंको मे...../...../.....

स्थानीय पता.....

....

मोबाइल नं.....

विभागाध्यक्ष का प्रमाणीकरण

प्रमाणित किया जाता है कि छात्र ..... इस विश्वविद्यालय के ..... अध्ययनशाला के द्वितीय/तृतीय सेमेस्टर में अध्ययनरत है।

दिनांक : / /

विभागाध्यक्ष का हस्ताक्षर एवं पदमुद्रा

पं. रविशंकर शुक्ल विश्वविद्यालय, रायपुर (छ.ग.)

दूरभाष : 0771–2262802 (अकादमिक विभाग), 0771–2262540 (कुलसचिव कार्यालय)

क्र. 65/ च्वॉयस बेस्ड सिस्टम /अका./2015 रायपुर दिनांक 19.12..2015
23.12.15

// अधिसूचना //

पं. रविशंकर शुक्ल विश्वविद्यालय के अधिसूचना कमांक 6436 दिनांक 30.11.2015 के अनुक्रम में एतद द्वारा अधिसूचित किया जाता है कि विश्वविद्यालय अध्ययन शालाओं के ऐसे स्नातकोत्तर पाठयक्रम जिनमें कक्षाओं की अवधी दो सेमेस्टर की ही होती है उनमें अध्ययनरत छात्रों को कुल छः क्रेडिट का पाठयक्रम कमशः प्रथम सेमेस्टर मे तीन एवं द्वितीय सेमेस्टर में तीन क्रेडिट का चयन करना होगा।

आदेशानुसार

कुलसचिव

पृ.क्रं 66 /च्वॉयस बेस्ड सिस्टम/अका./2015 रायपुर दिनांक 19.12..2015
23.12.15

प्रतिलिपि:

1. अध्यक्ष, समस्त अध्ययन शाला, पं. रविशंकर शुक्ल विश्वविद्यालय रायपुर
2. अधिष्ठाता छात्र कल्याण मंडल, पं. रविशंकर शुक्ल विश्वविद्यालय रायपुर
3. उप कुलसचिव गोपनीय/परीक्षा/अकादमिक, पं. रविशंकर शुक्ल विश्वविद्यालय रायपुर
4. कुलपति जी के सचिव/कुलसचिव के निजि सहायक, पं. रविशंकर शुक्ल विश्वविद्यालय रायपुर को सूचनार्थ एवं आवश्यक कार्यवाही हेतु अग्रेषित।

उप कुलसचिव(अका0)

पं. रविशंकर शुक्ल विश्वविद्यालय, रायपुर (छ.ग.)

दूरभाष : 0771–2262802 (अकादमिक विभाग), 0771–2262540 (कुलसचिव कार्यालय)

पत्र कं. 6066 /रेग्यू./अका0/2018 रायपुर दिनांक 27.3.2018

// अधिसूचना //

एतद् द्वारा अधिसूचित किया जाता है कि विश्वविद्यालय कार्यपरिषद की बैठक दिनांक 25.02.2018 में च्वॉयस बेस्ड पाठ्यक्रम के विनियम का अनुमोदन किया गया है, जो निम्नांकित है–

विनियम कं. 176

(परिनियम 10 के प्रावधान के अंतर्गत निर्मित)

1. यह विनियम "च्वॉयस बेस्ड पाठ्यक्रम विनियम" के नाम से जाना जायेगा।
2. यह विनियम विश्वविद्यालय अध्ययन शाला एवं इस विश्वविद्यालय सें सम्बद्ध महाविद्यालयों पर प्रभावी होगा।
3. स्नातकोत्तर स्तर के द्वितीय एवं तृतीय सेमेस्टर के छात्र इस पाठ्यक्रम का संबंधित सेमेस्टर के लिए घोषित प्रश्नपत्रों में से ही प्रश्न पत्र का चयन कर सकेंगे।
4. ऐसे पाठ्यक्रम जो दो ही सेमेस्टर के पाठ्यक्रम है एवं ऐसे पाठ्यक्रम जिसमें तृतीय एवं चतुर्थ सेमेस्टर में प्रोजेक्ट वर्क अनिवार्य हो, के छात्र च्वॉयस बेस्ड के द्वितीय सेमेस्टर के प्रश्नपत्रों का प्रथम सेमेस्टर में एवं तृतीय सेमेस्टर के प्रश्नपत्रों का द्वितीय सेमेस्टर में चयन कर सकेंगे।
5. प्रत्येक छात्र को स्नातकोत्तर पाठ्यक्रम के द्वितीय एवं तृतीय सेमेस्टर में मिलाकर न्यूनतम छः क्रेडिट लेना अनिवार्य है। छात्र अधिकतम दस क्रेडिट का एक ही विषय अथवा भिन्न विषय में चयन कर सकेंगे।
6. च्वॉयस बेस्ड पाठ्यक्रम के प्रश्नपत्रों को अंकसूची में अतिरिक्त पाठ्यक्रम के रूप में प्रदर्शित किया जावेगा। प्रत्येक विद्यार्थी को स्नातकोत्तर स्तर के च्वॉयस बेस्ड पाठ्यक्रम प्रश्न पत्रों में से न्यूनतम छः क्रेडिट उत्तीर्ण करना अनिवार्य है।
7. च्वॉयस बेस्ड पाठ्यक्रम की परीक्षा संबंधित सेमेस्टर परीक्षा के साथ ही सम्पन्न कराई जायेगी।
8. विद्यार्थी जिस अध्ययन शाला में च्वॉयस बेस्ड पाठ्यक्रम का अध्ययन करेंगे, उस अध्ययन शाला द्वारा संबंधित सेमेस्टर परीक्षा हेतु आवेदन जमा करने की अंतिम तिथि के पूर्व, च्वॉयस बेस्ड पाठ्यक्रम हेतु चयनित विद्यार्थियों की सूची, प्रश्नपत्र–विषय, विद्यार्थी के प्रथम वर्ष के रोल नम्बर एवं मूल विभाग की जानकारी परीक्षा एवं गोपनीय विभाग को निर्धारित प्रपत्र में प्रेषित किया

जावेगा। कम्प्यूटरीकृत परीक्षा आवेदन पत्रों में भी इसका प्रावधान किया जावेगा।

9. ऐसे अध्ययन शाला जहॉ अध्ययन–अध्यापन के लिए प्रातः कालीन व्यवस्था है वहॉ च्वॉयस बेस्ड पाठ्यक्रम की कक्षाएं प्रातः 9 बजे से 10 बजे के मध्य एवं शेष अध्ययन शालाओं में कक्षाएं सांय 4 से 5 बजे तक आयोजित की जावेंगी।
10. च्वॉयस बेस्ड पाठ्यक्रम की कक्षाएं प्रत्येक सप्ताह में प्रथम तीन दिवस में ही आयोजित की जावेंगी।
11. च्वॉयस बेस्ड पाठ्यक्रम का निर्धारण, अन्य पाठ्यक्रमों की भांति संबंधित विषय के अध्ययन मंडल द्वारा किया जावेगा।

कुलसचिव

पृ. क्रं. 6067/रेग्यू./अका0/2018 रायपुर दिनांक 27.3.2018

प्रतिलिपि–

1. माननीय राज्यपाल एवं कुलाधिपति के सचिव, छत्तीसगढ़ शासन, रायपुर
2. सचिव, उच्च शिक्षा विभाग मंत्रालय, छत्तीसगढ़ शासन, महानदी भवन नया रायपुर
3. सचिव, वित्त– विभाग मंत्रालय, छत्तीसगढ़ शासन, महानदी भवन नया रायपुर
4. आयुक्त, उच्च शिक्षा, छत्तीसगढ़ शासन, इंद्रावती भवन नया रायपुर
5. अध्यक्ष, समस्त अध्ययन शाला,विश्वविद्यालय शिक्षण विभाग/प्राचार्य, समस्त सम्बद्ध महाविद्यालय, प. रविशंकर शुक्ल विश्वविद्यालय, रायपुर
6. समस्त विभागीय अधिकारी, प. रविशंकर शुक्ल विश्वविद्यालय, रायपुर
7. कुलपति के सचिव/कुलसचिव के निज सहायक, प. रविशंकर शुक्ल विश्वविद्यालय, रायपुर को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित।

उप कुलसचिव (अकादमिक)

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पं. रविशंकर शुक्ल विश्वविद्यालय, रायपुर (छ.ग.)

दूरभाष : 0771–2262802 (अकादमिक), 0771–2262540 (कुलसचिव), *E-mail ID- academicprsu2@gmail.com*

पत्र क्रं. 234 /रेग्यू./अका./2020 रायपुर दिनांक 15 .09.2020

//अधिसूचना//

विद्यापरिषद् की स्थायी समिति की बैठक दिनांक 09.09.2020 में निर्णय क्रमांक 10 में – **विश्वविद्यालय अध्ययनशाला के समस्त संकायाध्यक्षों की बैठक दिनांक 28.08.2020 की अनुशंसानुसार विनियम क्रमांक 176 ''च्वॉयस बेस्ड पाठ्यक्रम विनियम'' में क्रमांक 9 एवं 10 में आंशिक संशोधन किये जाने का निर्णय को मान्य करते हुए संशोधित विनियम क्रमांक 176 की** अनुशंसा का कार्यपरिषद् की बैठक दिनांक 10.09.2020 में पूरक विषय सूची क्रमांक 01 में अनुमोदित किया गया है, जो निम्नांकित है –

संशोधित विनियम क्रं. 176

(परिनियम 10 के प्रावधान के अंतर्गत निर्मित)

1. यह विनियम ''च्वॉयस बेस्ड पाठ्यक्रम विनियम'' के नाम से जाना जायेगा।
2. यह विनियम विश्वविद्यालय अध्ययन शाला एवं इस विश्वविद्यालय से सम्बद्ध महाविद्यालयों पर प्रभावी होगा।
3. स्नातकोत्तर स्तर के द्वितीय एवं तृतीय सेमेस्टर के छात्र इस पाठ्यक्रम का संबंधित सेमेस्टर के लिए घोषित प्रश्नपत्रों में से ही प्रश्न पत्र का चयन कर सकेंगे।
4. ऐसे पाठ्यक्रम जो दो ही सेमेस्टर के पाठ्यक्रम है एवं ऐसे पाठ्यक्रम जिसमें तृतीय एवं चतुर्थ सेमेस्टर में प्रोजेक्ट वर्क अनिवार्य हो, के छात्र च्वॉयस बेस्ड के द्वितीय सेमेस्टर के प्रश्नपत्रों का प्रथम सेमेस्टर में एवं तृतीय सेमेस्टर के प्रश्नपत्रों का द्वितीय सेमेस्टर में चयन कर सकेंगे।
5. प्रत्येक छात्र को स्नातकोत्तर पाठ्यक्रम के द्वितीय एवं तृतीय सेमेस्टर में मिलाकर न्यूनतम छः क्रेडिट लेना अनिवार्य है। छात्र अधिकतम दस क्रेडिट का एक ही विषय अथवा भिन्न विषय में चयन कर सकेंगे।
6. च्वॉयस बेस्ड पाठ्यक्रम के प्रश्नपत्रों को अंकसूची में अतिरिक्त पाठ्यक्रम के रूप में प्रदर्शित किया जावेगा। प्रत्येक विद्यार्थी को स्नातकोत्तर स्तर के च्वॉयस बेस्ड पाठ्यक्रम प्रश्न पत्रों में से न्यूनतम छः क्रेडिट उत्तीर्ण करना अनिवार्य है।
7. च्वॉयस बेस्ड पाठ्यक्रम की परीक्षा संबंधित सेमेस्टर परीक्षा के साथ ही सम्पन्न कराई जायेगी।
8. विद्यार्थी जिस अध्ययन शाला में च्वॉयस बेस्ड पाठ्यक्रम का अध्ययन करेंगे, उस अध्ययन शाला द्वारा संबंधित सेमेस्टर परीक्षा हेतु आवेदन जमा करने की अंतिम तिथि के पूर्व, च्वॉयस बेस्ड पाठ्यक्रम हेतु चयनित विद्यार्थियों की सूची, प्रश्नपत्र–विषय,

11.9.20

विद्यार्थी के प्रथम वर्ष के रोल नम्बर एवं मूल विभाग की जानकारी परीक्षा एवं गोपनीय विभाग को निर्धारित प्रपत्र में प्रेषित किया जावेगा। कम्प्यूटरीकृत परीक्षा आवेदन पत्रों में भी इसका प्रावधान किया जावेगा।

9. ऐसे अध्ययन शाला जहाँ अध्ययन–अध्यापन के लिए प्रातः कालीन व्यवस्था है वहाँ च्वॉयस बेस्ड पाठ्यक्रम की Contact कक्षाएं प्रातः 9 बजे से 10 बजे के मध्य एवं शेष अध्ययन शालाओं में कक्षाएं सांय 4 से 5 बजे तक शंका निवारण हेतु आयोजित की जावेंगी।

10. च्वॉयस बेस्ड पाठ्यक्रम की कक्षाएं Online mode में विश्वविद्यालय की website पर उपलब्ध की जाएगी।

11. च्वॉयस बेस्ड पाठ्यक्रम का निर्धारण, अन्य पाठ्यक्रमों की भांति संबंधित विषय के अध्ययन मंडल द्वारा किया जावेगा।

आदेशानुसार,

14.9.20

कुलसचिव

पृ. क्रं. 235 /रेग्यू./अका0/2020 रायपुर दिनांक 15.09.2020

प्रतिलिपि–

1. माननीय राज्यपाल एवं कुलाधिपति के सचिव, छत्तीसगढ़ शासन, रायपुर
2. सचिव, उच्च शिक्षा विभाग मंत्रालय, छत्तीसगढ़ शासन, महानदी भवन अटल नगर, नवा रायपुर
3. सचिव, वित्त– विभाग मंत्रालय, छत्तीसगढ़ शासन, महानदी भवन अटल नगर, नवा रायपुर
4. आयुक्त, उच्च शिक्षा, संचालनालय, छत्तीसगढ़ शासन, इंद्रावती भवन अटल नगर, नवा रायपुर
5. अध्यक्ष, समस्त अध्ययन शाला,विश्वविद्यालय शिक्षण विभाग/प्राचार्य, समस्त सम्बद्ध महाविद्यालय, प. रविशंकर शुक्ल विश्वविद्यालय, रायपुर
6. समस्त विभागीय अधिकारी, प. रविशंकर शुक्ल विश्वविद्यालय, रायपुर
7. कुलपति के सचिव/कुलसचिव के निज सहायक, प. रविशंकर शुक्ल विश्वविद्यालय, रायपुर को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित।

11.9.20

विशेष कर्तव्यस्थ अधिकारी (अका.)

पं. रविशंकर शुक्ल विश्वविद्यालय, रायपुर (छ.ग.)

दूरभाष : 0771–2262802 (अकादमिक), 0771–2262540 (कुलसचिव), *E-mail ID- academicprsu2@gmail.com*

पत्र क्रं. 234 /रेग्यू./अका./2020 रायपुर दिनांक 15 .09.2020

//अधिसूचना//

विद्यापरिषद् की स्थायी समिति की बैठक दिनांक 09.09.2020 में निर्णय क्रमांक 10 में – **विश्वविद्यालय अध्ययनशाला के समस्त संकायाध्यक्षों की बैठक दिनांक 28.08.2020 की अनुशंसानुसार विनियम क्रमांक 176 ''च्वॉयस बेस्ड पाठ्यक्रम विनियम'' में क्रमांक 9 एवं 10 में आंशिक संशोधन किये जाने का निर्णय को मान्य करते हुए संशोधित विनियम क्रमांक 176 की** अनुशंसा का कार्यपरिषद् की बैठक दिनांक 10.09.2020 में पूरक विषय सूची क्रमांक 01 में अनुमोदित किया गया है, जो निम्नांकित है –

संशोधित विनियम क्रं. 176

(परिनियम 10 के प्रावधान के अंतर्गत निर्मित)

1. यह विनियम ''च्वॉयस बेस्ड पाठ्यक्रम विनियम'' के नाम से जाना जायेगा।
2. यह विनियम विश्वविद्यालय अध्ययन शाला एवं इस विश्वविद्यालय से सम्बद्ध महाविद्यालयों पर प्रभावी होगा।
3. स्नातकोत्तर स्तर के द्वितीय एवं तृतीय सेमेस्टर के छात्र इस पाठ्यक्रम का संबंधित सेमेस्टर के लिए घोषित प्रश्नपत्रों में से ही प्रश्न पत्र का चयन कर सकेंगे।
4. ऐसे पाठ्यक्रम जो दो ही सेमेस्टर के पाठ्यक्रम है एवं ऐसे पाठ्यक्रम जिसमें तृतीय एवं चतुर्थ सेमेस्टर में प्रोजेक्ट वर्क अनिवार्य हो, के छात्र च्वॉयस बेस्ड के द्वितीय सेमेस्टर के प्रश्नपत्रों का प्रथम सेमेस्टर में एवं तृतीय सेमेस्टर के प्रश्नपत्रों का द्वितीय सेमेस्टर में चयन कर सकेंगे।
5. प्रत्येक छात्र को स्नातकोत्तर पाठ्यक्रम के द्वितीय एवं तृतीय सेमेस्टर में मिलाकर न्यूनतम छः क्रेडिट लेना अनिवार्य है। छात्र अधिकतम दस क्रेडिट का एक ही विषय अथवा भिन्न विषय में चयन कर सकेंगे।
6. च्वॉयस बेस्ड पाठ्यक्रम के प्रश्नपत्रों को अंकसूची में अतिरिक्त पाठ्यक्रम के रूप में प्रदर्शित किया जावेगा। प्रत्येक विद्यार्थी को स्नातकोत्तर स्तर के च्वॉयस बेस्ड पाठ्यक्रम प्रश्न पत्रों में से न्यूनतम छः क्रेडिट उत्तीर्ण करना अनिवार्य है।
7. च्वॉयस बेस्ड पाठ्यक्रम की परीक्षा संबंधित सेमेस्टर परीक्षा के साथ ही सम्पन्न कराई जायेगी।
8. विद्यार्थी जिस अध्ययन शाला में च्वॉयस बेस्ड पाठ्यक्रम का अध्ययन करेंगे, उस अध्ययन शाला द्वारा संबंधित सेमेस्टर परीक्षा हेतु आवेदन जमा करने की अंतिम तिथि के पूर्व, च्वॉयस बेस्ड पाठ्यक्रम हेतु चयनित विद्यार्थियों की सूची, प्रश्नपत्र–विषय,

11.9.20

विद्यार्थी के प्रथम वर्ष के रोल नम्बर एवं मूल विभाग की जानकारी परीक्षा एवं गोपनीय विभाग को निर्धारित प्रपत्र में प्रेषित किया जावेगा। कम्प्यूटरीकृत परीक्षा आवेदन पत्रों में भी इसका प्रावधान किया जावेगा।

9. ऐसे अध्ययन शाला जहाँ अध्ययन–अध्यापन के लिए प्रातः कालीन व्यवस्था है वहाँ च्वॉयस बेस्ड पाठ्यक्रम की Contact कक्षाएं प्रातः 9 बजे से 10 बजे के मध्य एवं शेष अध्ययन शालाओं में कक्षाएं सांय 4 से 5 बजे तक शंका निवारण हेतु आयोजित की जावेंगी।

10. च्वॉयस बेस्ड पाठ्यक्रम की कक्षाएं Online mode में विश्वविद्यालय की website पर उपलब्ध की जाएगी।

11. च्वॉयस बेस्ड पाठ्यक्रम का निर्धारण, अन्य पाठ्यक्रमों की भांति संबंधित विषय के अध्ययन मंडल द्वारा किया जावेगा।

आदेशानुसार,

14.9.20

कुलसचिव

पृ. क्रं. 235 /रेग्यू./अका0/2020 रायपुर दिनांक 15.09.2020

प्रतिलिपि–

1. माननीय राज्यपाल एवं कुलाधिपति के सचिव, छत्तीसगढ शासन, रायपुर
2. सचिव, उच्च शिक्षा विभाग मंत्रालय, छत्तीसगढ़ शासन, महानदी भवन अटल नगर, नवा रायपुर
3. सचिव, वित्त– विभाग मंत्रालय, छत्तीसगढ़ शासन, महानदी भवन अटल नगर, नवा रायपुर
4. आयुक्त, उच्च शिक्षा, संचालनालय, छत्तीसगढ़ शासन, इंद्रावती भवन अटल नगर, नवा रायपुर
5. अध्यक्ष, समस्त अध्ययन शाला,विश्वविद्यालय शिक्षण विभाग/प्राचार्य, समस्त सम्बद्ध महाविद्यालय, प. रविशंकर शुक्ल विश्वविद्यालय, रायपुर
6. समस्त विभागीय अधिकारी, प. रविशंकर शुक्ल विश्वविद्यालय, रायपुर
7. कुलपति के सचिव/कुलसचिव के निज सहायक, प. रविशंकर शुक्ल विश्वविद्यालय, रायपुर को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित।

11.9.20

विशेष कर्तव्यस्थ अधिकारी (अका.)

अध्ययन शाला का नाम – प्राचीन भारतीय इतिहास संस्कृति एवं पुरातत्व अध्ययनशाला
पाठ्यक्रम – च्वॉइस बेस्ड पाठ्यक्रम द्वितीय सेमेस्टर
प्रश्न पत्र का नाम – **Element of Ancient Indian History & Archaeology**
कुल केडिट – **03** कुल अंक – **80–20**
पाठ्यक्रम विवरण –

PAPER – I

Elements of Ancient Indian History & Archaeology

Credit: - 1
Meaning & scope of History & Archaeology
Features of Palaeolithic, Mesolithic & Neolithic cultures
General survey of Harappa culture
Vedic Culture
Mahajanpada period
Rise of Mauryan dynasty
Gupta dynasty
Political condition of Southern & Northern India (6^{th} – 12^{th} Century A.D.) [General Survey]

Credit: - 2
Elements of Epigraphy & Numismatics
Importance of Epigraphy & Numismatics
Important Inscriptions -
Origin & development of Ancient Indian scripts
Types & techniques of Ancient Indian coins

Credit: - 3
Elements of Art & Archaeology
Gandhara , Mathura, Gupta Art
Introduction of Stupa, Caves & Temples
Exploration, Excavation & Dating methods

Books Recommended:-

Ghosh, A. – Encyclopaedia of Indian Archaeology
Mishra, D.P. – Protohistory of India (English and Hindi)
Pandey, Vimal Chandra – Prachin Bharat ka Rajnetik evam Sanskritik Itihaas.
Pandey,R.N. – Uttar bharat ka Rjnetik Itihas
Agrawal, V. S. – Indian Art
Upadhyaya Vasudeva – Prachin Bhartiya Guha Stup and Mandir.
Cunningham, A. – Coins of Ancient India.
Sarkar, D.C. – Study of the Indian Coins.
Ojha, G H. – Prachin Bhartiya Lipi maala.
Rajbali Pandey – Indian Palaeography

अध्ययन शाला का नाम – प्राचीन भारतीय इतिहास संस्कृति एवं पुरातत्व अध्ययनशाला
पाठ्यक्रम – च्वॉइस बेस्ड पाठ्यक्रम तृतीय सेमेस्टर
प्रश्न पत्र का नाम – **Elements of Ancient Indian Culture & Religion**
कुल केडिट – **03** कुल अंक – **80–20**
पाठ्यक्रम विवरण –

PAPER – II

Elements of Ancient Indian Culture & Religion

Credit: - 1
Ancient Indian social system
Varna Ashrama
Purushartha, Sanskara
Family system
Position of women

Ancient Indian Economic Condition
Ancient Indian Economic thoughts & concepts
Land ownership
Trade organizations
Sources of Income & Expenditure

Credit:- 2
Origin & Development of Brahmanism
Vaishnavism and their sects
Shaivism and their sects
Shakt, Shaurya & Ganpatya

Credit:- 3
Origin and development of Buddhism & Jainism
Buddhism and their sects
Jainism and their sects

Books Recommended:-

Jaiswal K.P. – Hindu Polity Hindi/English.
Shiv Swaroop Sahay – Prachin Bharat Ka Dharmik Itihaas
J. P. Mishra – Prachin Bharat Ka Samajik Itihaas
Kane, P.V. – History of Dharmashastra, 5 Vols.
Majumdar, R.C. – Corporate Life in Ancient India
Parihar, Dinesh Nandini – Chhattisgarh ka Samajik Arthik Itihaas

Choice Based Paper for Student of Other Disciplines
Session: 2017-18

Credit: 3

MAX. Marks- 80
MIN.Marks – 27

PAPER-1: Basics in Anthropology

Unit-1:

Anthropology: Definition, Branches
Man's Place among Primates
Primate: Definition, Evolutionary trends
Blood Groups: Types, Distribution, Inheritance.

Unit-2:

Archaeology: Definition, Branches, Objectives
Outline of Indian Archaeological Cultures
Tool Technology

Unit-3:

Tribe: Definition & Characteristic Features
Culture: Meaning, Definition & Characteristics
Ethnographic Methods.

Recommended Readings:

1. Sharma and Sharma. 1997. Anthropology, Atlantic Publishers and Distributors, New Delhi
2. Herskovitz, M. J. Cultural Anthropology, Oxford & IBH Publishing Co., New Delhi.
3. Mair, Lucy 1965. An Introduction to Social Anthropology, Clarendon Press, Oxford.
4. Majumdar, D.N. & Madan, T. 1986. An Introduction to Social Anthropology, National Publishing House, New Delhi.
5. Shukla, B.R.K. and Rastogi, S. Physical Anthropology and Human Genetics: An Introduction, Palka
6. Montagu, M.F.A. An Introduction to Physical Anthropology, Charles C Thomas, Springfield Illinois.
7. Sankalia, H.D. 1964. Stone age tools: their techniques, names and probable functions, Pune, Deccan College
8.Nadeem Hasnain 2002. Janjatiya Bharat, Jawahar Printers and Distribution, New Delhi.(In Hindi)
9.Nadeem Hasnain 2002.Samkalin Bhartiya Samaj : Ek Samajshastriya Paridrishya, Tarun Ofset , New Delhi.(In Hindi)
10. Pandey J.N. Puratatvik Vimarsha.(In Hindi)
10. Young, P. V. Scientific Social Surveys and Research
11. H. Russel. Bernard, Handbook of Methods in Cultural Anthropology, Altamira Press.

3/12/16

3.12.16

03.12.16

Session: 2017-18

Credit: 03

MAX. Marks- 80
MIN.Marks – 27

Paper-II: Applications of Anthropology

Unit:1

Applied Biological Anthroplogy,

Applications of Human Genetics

Unit:2

Nutritional Anthropology,

Anthropology of Sports,

Unit:3

Applied Social Anthropology

Action Anthropology

Recommended Books

1. Kroeber: Anthropology Today

2.Curt Stern, 1968: Principles of Human Genetics. Eurasia Publishing House (Pvt.) Ltd., Ram Nagar, New-Delhi

3. Karp, E.: Genetic Engineering

4. Sodhi, H.S.: Sports Anthropology

5. Willigt, J.V.: Applied Anthropology: An Introduction

6. Vidyarthi, L.P.: Applied Anthropology

7. Shukla, B.R.K. & Rastogi, S . : Physical Anthropology and Human Genetics: An Introduction

8. Surinder Nath: Introduction to Forensic Anthropology

9. Krogman, Wilton Marion & Iscan, Mehmet Yasar (1986): The Human Skeleton in Forensic Medicine

3/12/16 3.12.16 31.2.16

SCHOOL OF STUDIES IN BIOTECHNOLOGY

Pt. Ravishankar Shukla University

Raipur-492 010

Syllabus

Choice Based Credit System

in

Biotechnology

Session

2020-2021
2021-2022

BoS approved syllabus for CBCS in Biotechnology
(Academic session 2020-21 and 2021-22)

School of Studies in Biotechnology

Course: Choice Based Course, **Semester: Second**

Name of Paper: Paper – I (Basic Biotechnology)

Total Credit: 03 (Three) **M.M.:100**

1. Introduction of Biotechnology; aims & scope of biotechnology.
2. Different areas of biotechnology; application of biotechnology & future prospects.
3. Structure of prokaryotic and eukaryotic cells; comparison between plant and animal cell.
4. Function of cell organelles: Nucleus, Mitochondria, Golgi-complex, Endoplasmic reticulum, etc.
5. Macromolecules in biological system: Amino acids; DNA & RNA; structure and function.
6. Carbohydrate; structure, classification, properties and function.
7. Protein; primary, secondary, tertiary & quaternary structure of protein and their importance.
8. Lipid; structure, classification and function.
9. Introduction and scope of microbiology; general account of Bacteria, Fungi and Virus.

Note: There will be 5 questions of equal marks.

Books:

1. Pelczar, M.J. Jr., Chan, E.C.S. and Kreig, N.R. (2009) Microbiology, Tata McGraw Hill.
2. Prescott L.M., Harley J., Klein D. (2001) Microbiology, McGraw Hill 5th Edition.
3. U Satyanarayana, First Edition: 2005, reprint (2010), Biotechnology, Books and Allied (P) Ltd. Kolkata.
4. Madigan M.T., Martinko J.M., Parker J., Brock Biology of microorganisms, Prentice-Hall.
5. C.B. Powar (2005) Cell Biology, Third edition, reprint Himalaya Publishing House.
6. Nelson and Cox (2009) Principal of Biochemistry, 5th edition.
7. Voet D., Voet J.G., Pratt C.W. (2006) Fundamentals of Biochemistry, 2nd Edition. Wiley.
8. Gerald Karp (2007) Cell and Molecular Biology, 5th edition.
9. Geoffrey M. Copper, Robert E. Hausman (2009) The Cell: A Molecular Approach.

School of Studies in Biotechnology

Course: Choice Based Course, **Semester: Third**

Name of Paper: Paper – II **(Applied Biotechnology)**

Total Credit: 03 (Three) **M.M.:100**

1. Introduction of Bioprocess technology; isolation, screening, identification, preservation and maintenance of industrial microorganisms; applications of bioprocess technology.
2. Pharmaceutical biotechnology: Antibiotic production.
3. Plant tissue culture techniques; basic media and nutrients, micro-propagation, multiplication, acclimatization, green house.
4. Genetic engineering: introduction, tools & techniques, transgenic plants.
5. Environmental pollution: air, water and soil pollution; different biotechnological approaches for the prevention & control of environment pollution: bioremediation, phytoremediation, sewage and effluent treatment.
6. Bioinformatics: general introduction, online-website & tools of bioinformatics; application of bioinformatics.
7. Animal biotechnology: general introduction, tools & techniques, applications,
8. Transgenic animal, cloning.

Note: There will be 5 questions of equal marks.

Books:

1. Prescott L.M., Harley J., Klein D. (2001) Microbiology, McGraw Hill 5th Edition.
2. U Satyanarayana, First Edition: 2005, reprint (2010) Biotechnology, Books and Allied (P) Ltd. Kolkata.
3. Gerald Karp (2007) Cell and Molecular Biology, 5th edition.
4. L.E. Casida (1994) Industrial Microbiology edition.
5. H.S. Chawla- Introduction of Plant Biotechnology, Oxford & IBH Publishing Co. (P) Ltd.
6. Razdan M.K. (2010) Introduction of Plant Tissue Culture, 2nd edition, Oxford & IBH Publishing Co. (P) Ltd.
7. Bhojwani SS and Razdan MK – Plant Tissue Culture; Elsevier.
8. Geoffrey M. Copper, Robert E. Hausman (2009) The Cell: A Molecular Approach.
9. TA Brown (2005) Gene Cloning and DNA Analysis, 4th Edition.
10. Indu Shekher Thakur (2006) Environmental Biotechnology: Basic concepts and Application, first edition, I.K. International Pvt. Ltd.
11. Gareth G. Evans, Judy Furlong (2011) Environmental Biotechnology: Theory and Application, 2nd edition, John Wiley and Sons.
12. Stanbury and Whittaker – Principles of Sterilization techniques, first Indian reprint edition (1997), Aditya Book (P) Ltd. New Delhi.
13. C.S.V. Murthy (2003) Bioinformatics. First Edition, Himalaya Publishing House.
14. S.C. Rastogi, Namita Mendiratta, Parag Rastogi (2003) Bioinformatics: Concepts, Skills and Applications, CBS Publishers and Distributors, New Delhi.
15. B.D. Singh (2004) Biotechnology: An Expanding Horizons, 1st Edition.

Name of SoS – School of Studies in Chemistry

Syllabus- Choice Based Syllabus (Second Semester)

Name of paper- ANALYTICAL TECHNIQUES AND DATA ANALYSIS
Total Credit-03 Total Marks -80+20

ANALYTICAL TECHNIQUES AND DATA ANALYSIS

Elective Course

Choice Based Credit System in Master Course in Chemistry

SAMPLE PREPARATION, DEGESTION AND STATISTICAL ANALYSIS

A. Sampling - Collection, Preservation and preparation of sample, Techniques of sampling solids, liquids and gases, Operation of drying and preparing a solution of the analyte.

Principle, methodology and application of different types of digestions such as aid digestion, base digestion, enzymatic and microwave digestion for liquid and solid materials.

B. Evolution and procession of Analytical Data, Precision and Accuracy, Types of Errors, Normal Distribution Curve, Standard deviation, Confidence limit, Graphical presentation of result-method of average, Method of Liner list square, Significant figures, Statistical aid to hypothesis testing-t-test, F-test, Correlation coefficient, Rejection of data.

SEPARATION TECHNIQUES

A. Efficiency of extraction, Selectivity of extraction, Extraction system, Method of Extraction, applications.

B. Principals, classification of chromatographic techniques, Technique and applications of paper chromatographic, Thin-layer chromatographic, HPTLC, Column chromatography.

INSTRUMENTATION INVOLVED IN PHYSICAL CHEMISTRY

A. UV visible and Tensiometer

B Principals, Instrumentation, Application of TGA, DTA and DSC methods.

C. Automated methods, Principle, instrumentation and application of flow injection analysis.

ELECTROCHEMISTRY

A. Principals and instrumentation of pH potentiometry, coulometry and counductometry.

B. Basic principles, Diffusion current, polarized electrode, Micro electrode, Dropping mercury Electrode llkovic equation, Polarographic wave, Qualitative analysisk Stripping methods, Cyclic Voltammetry, Amperometric titration :-curves, Differential pulse polarography and Square wave polarography.

BOOK SUGGESTED :

1. Fundamental of Analytical Chemistry-Skoog D.A. and West D.M.
2. Saunders, College Publication.
3. Textbook of Quantitative Inorganic Analysis-Vogel A.I.
4. Principles and Practice of Analytical Chemistry-Fifield F.W and Kealey
5. D. Black well Science
6. Instrumental Analysis R. Braun, McGraw Hill, International Edition.
7. Analytical Chemistry, Christain, WSE/Wiley.
8. Instrumental Analysis, Willard Merilt, CBS.
9. Chemical Analysis, Brawn, McGraw Hill
10. Fundamental of Analytical Chemistry-Skoog D.A. and West D.M.
11. Principles of instrumental analysis, Skoog Holler - Niemann.
12. Instrumental analysis, Wizard Dean and Merit.
13. Principal and PRACTICAL analytical chemistry, Fifield and Kealey.

Name of SoS – School of Studies in Chemistry

Syllabus- Choice Based Syllabus (Second Semester)

Name of paper- INSTRUMENTAL METHODS OF ANALYSIS

Total Credit-03 Total Marks -80+20

INSTRUMENTAL METHODS OF ANALYSIS

Elective Course
Choice Based Credit System in Master Course in Chemistry

ADVANCED CHROMATOGRAPHY:

A. Ion chromatography: Ion exchange equilibrium, Ion-exchange packing and Inorganic Applications.

B. Size exclusion chromatography: Column packing, Theory of size of exclusion chromatography and applications.

C. Supercritical fluid chromatography: Properties of supercritical fluid SFC-Instrumentation and operating variables, comparison with other types of chromatography, applications.

D. Capillary Electrophoresis and capillary electro chromatography : overviews and applications

X-RAY AND PROTON INDUCED SPECTROSCOPY:

A. X-Ray fluorescent method: Principals-Characteristics x-ray emission. Instrumentation x-ray tube, Radioactive sources. Wavelength dispersive instruments. Energy dispersive instruments. Analytical Applications-Qualitative Analysis.

B. Proton Induced X-Ray Spectroscopy: Theory, instrumentation and application.

ATOMIC EMISSION SPECTROSCOPY

A. Selectivity, sensitivity and interferences of atomic spectroscopy.

B. Theory, instrumentation and application of flame photometer, AES, ICP-AES and AFS.

ATOMIC ABSORPTION SPECTROSCOPY AND HYPHENATED TECHNIQUES

A. Theory instrumentation and application of flame and graphite furnace AAS, cold-vapor and hydride generated AAS.

B. Theory , instrumentation and application of hyphenated techniques i.e. GC/HPLC/-MS, GC/IC/HPLC-ICP-MS.

BOOK SUGGESTED:

1. Instrumental methods of analysis, Willard, Meritt and Dean.
2. Basic concepts of analytical chemistry, S.M. Khopkar, John Wiley & Sons.
3. Metallurgical analysis, S.C. Jain.
4. Material Science and Engineering. An Introduction, W.D. Callister, Wiley.
5. Material Science, J.C. Anderson, K.D. Leaver, J.M. Alexander and R.D. Rawlings, ELBS.
6. Fundamentals of Analytical Chemistry, Skoog, Welt, Holler and Crouch Thomson Learning Inc.

Name of SoS – School of Studies in Chemistry

Syllabus- Choice Based Syllabus(Third Semester)

Name of paper- RESONANCE SPECTROSCOPY AND PHOTOCHEMISTRY

Total Credit-03 Total Marks -80+20

RESONANCE SPECTROSCOPY,PHOTOCHEMISTRY AND ORGANOCATALYSIS

Elective Course

Choice Based Credit System in Master Course in Chemistry

A. **ELECTRON SPIN RESONANCE SPECTROSCOPY** : Hyperfine coupling, spin polarization for atoms and transition metal ions, spin-orbit coupling and significance of g-tensors, application to transition metal complexes (having one unpaired electron).

B. **NUCLEAR QUADRUPOLE RESONANCE SPECTROSCOPY:** Quadrupole nuclei, quadrupole moments, electric field gradient, coupling constant, splittings, applications.

A. **PHOTOELECTRON SPECTROSCOPY :** Basic principle both for atoms and molecules; Photo-electric effect, ionization process, ectraKoopman'sofsimplemolecules,theorem,Auger p electron spectroscopy, Determination of Dipole moment.

B. **PHOTOACOUSTIC SPECTROSCOPY:** Basic principle of Photo acoustic Spectroscopy (PAS), PAS –gases and condensed system Chemical and Surface application.

A. **PHOTOCHEMICAL REACTIONS :** Interaction of electromagnetic radiation with matter, Stern Volmer equation, types of excitations, fate of excited molecule, quantum yield, transfer of excitation energy, Actinometry.

B. **DETERMINATION OF REACTION MECHANISM**: Classification, rate constatnts and life times of reactive energy states –determination of rate constants of reactions. Effect of light intensity on the rate of photochemical reactions.

C. **MISCELLANEOUS PHOTOCHEMICAL REACTIONS** : Photo-Fries reactions of anilides, Photo-Fries rearrangement. Barton reaction. Singlet molecular oxygen reactions. Photochemical formation of smog. Photodegradation of polymers, Photochemistry of vision.

A. **ORGANOCATALYSIS**

General Principles: Energetic, Catalytic cycles, catalytic efficiency and life time, selectivity. Type of organometallic reaction: Ligand substitution, Oxidative addition, reductive elimination and insertion and deinsertion. Homogeneous catalysis: Hydrogenetion of alkenes, Hydroformylation, Monsanto acetic acid synthesis, Wacker oxidation of alkenes, Alkenes metathesis, Palladium-Catalysed C-C bond forming reactions, asymmetric oxidation. Heterogenous catalysis: The nature of heterogenous catalysts, Fischer-Tropsch synthesis, alkene polymerization.

BOOK SUGGESTED:

1. Infrared and Raman Spectra: Inorganic and Coordination Compounds, K. Nakamoto, Wiley.
2. Fundamentals of Photochemsitry, K.K. Rohtagi-Mukherji, Wiley-Eastern.
3. Essentials of Molecular Photochemistry, A. Gilbert and J. Baggott, Blackwell Scientific Publications.
4. Molecular Photochemsitry, N.J. Turro, W.A. Benjamin.
5. Introductory Phtochemistry, A. Cox and T. Camp, McGraw-Hill.
6. Photochemistry, R.P. Kundall and A. Gilbert, Thomson Nelson.
7. Application of Spectroscopy of Organic Compounds, J.R. Dyer, Prentice Hall.
8. Photochemistry , R.P. Kundall and A. Gilbert, Thomson Nelson.
9. Organic Photochemistry, J. coxon and B. Halton, Cambridge University Press.
10. Shriver& Atkins Inorganic Chemistry: P.Atkins, T.Overtone, J. Rourke, M. Weller, F. Armstrong, Oxford University Press
11. Inorganic Chemistry: C.E. Housecraft, A.G. Sharpe, Pearson Education Limited.
12. Inorganic Chemistry: Principles of Structure and Reactivity: J.E. Huheey, E.A. Keiter, R.L.Keiter, O.K. Medhi, Pearson Education

13. Organometallic Chemistry: A Unified Approach: R.C. Mehrotra, A.Singh, New Age International Publishers.

Name of SoS – School of Studies in Chemistry

Syllabus- Choice Based Syllabus (Third Semester)

Name of paper- CHEMISTRY OF BIOMOLECULES

Total Credit-03 Total Marks -80+20

CHEMISTRY OF BIOMOLECULES

Elective Course

Choice Based Credit System in Master Course in Chemistry

A. BIOENERGETICS: Standard free energy change in biochemical reactions, exergonic, endergonic. Hydrolysis of ATP, synthesis of ATP from ADP.

B. ELECTRON TRANSFER IN BIOLOGY: Structure and function of metalloproteins in electron transport processes –cytochromes and ion-sulphur proteins, synthetic models.

C. TRANSPORT AND STORAGE OF DIOXYGEN: Heme proteins and oxygen uptake, structure and function of haemoglobin, myoglobin, haemocyanins and haemerythrin, model synthetic complexes of iron, cobalt and copper.

A. METALLOENZYMES: Zinc enzymes –carboxypeptibase and carbonic anhydrase. Iron enzymes – catalase, peroxidase and cytochrome P-450. copper enzymes- superoxide dismutase. Molybdenum oxatransferase enzymes –xanthine oxidase.

B. ENZYME MODELS: Host-guest chemistry, chiral recognition and catalysis, molecular recognition, molecular asymmetry and prochirality. Biomimetic chemistry, Cyclodextrin-based enzyme models, calixarenes, ionophores, synthetic enzymes or synzymes.

A. ENZYMES: Nomenclature and classification ofnducedEnzyme. F fit hypothesis, concept and identification of active site by the use of inhibitors.

B. CO-ENZYME CHEMISTRY: Structure and biological functions of coenzyme A, thiamine pyrophosphate, pyridoxal phosphate, NAD+, NADP+, FMN, FAD, lipoic acid, vitamin B_{12}.

C. BIOTECHNOLOGICAL APPLICATIONS OF ENZYMES: Tehcniques and methods of immobilization of enzymes, effect of immobilization on enzyme activity, application of immobilization enzymes in medicine and industry. Enzymes and Recombinant DNA Technology.

A. BIOPOLYMER INTERACTIONS: forces involved in biopolymer interaction. Electrostatic charges and molecular expansion, hydrophobic forces, dispersion force interactions. Multiple equilibria and various types of binding processes in biological systems. Hydrogen ion titration curves.

B. THERMODYNAMICS OF BIOPOLYMER SOLUTIONS: Thermodynamics of biopolymer solution, osmotic pressure, membrane equilibrium, muscular contraction and energy generation in mechnochemical system.

C. CELL MEMBRANE AND TRANSPORT OF IONS: Structure and functions of cell membrane, ion transport through cell membrane, irreversible thermodynamic treatment of membrane transport and Nerve conduction.

BOOK SUGGESTED:

1. Principles of Bioinorganic Chemistry, S.J. Lippard and J.M. Berg, University Science Books.
2. Bioinorganic Chemistry, I. Bertini, H.B. Gray, S.L. Lippard and J.S. Valentine, University Science Books.
3. Inorganic Biochemistry vols II and I.Ed G.L. Eichhorn, Elservier.
4. Principles of Bioinorganic Chemistry, S.J. Lippard and J.M. Berg, University Science Books.

5. Bioinorganic Chemistry, I. Bertinin, H.B. Gary, S.J. Lippard and J.S. Valentine, University Science.
6. Inorganic Biochemistry vols I and II ed. G.L. Eichhorn, Elsevier.
7. Bioorganic Chemistry: A Chemical Approach to Enzyme Action, Hermann Dugas and C. Penny, Springer-verlag.
8. Understanding Enzymes, Trevor palmer, Prentice Hall.
9. Enzyme Chemistry : Impact and Applications, Ed. Collin J Suckling, Chapman and Hall.
10. Enzyme Mechanisms Ed, M.I. Page and A. Williams, Royal Society of Chemistry.
11. Fundamentals of Enzymology, N.C. Price and L. Stevens, Oxford University Press.
12. Immobilizaed Enzymes: An Introduction and Applications in Biotechnology, Michael D. Trevan, and John Wiley.
13. Enzymatic Reaction Mechanisms, C. Walsh, W.H. Freeman.
14. Biochemistry: The Chemical Reacitons of liging cells, D.E. Metzler, Academic Press.
15. Principles of Biochemistry, A.L. Lehninger, Wroth Publishers.
16. Biochemistry, L. Stryer, W.H. Freeman.
17. Biochemistry, J. David Rawn, Neil Patterson.
18. Biochemistry, Voet and Voet, John Wiley.
19. Outlines of Biochemistry, E.E. Conn and P.K. Stumpf, John Wiley.
20. Bioorganic Chemistry : A Chemistry Approach to Enzyme Action, H. Dugas and C. Penny, Springer-Verlag.
21. Biochemistry and Molecular Biology of Plants, Buchanan, Gruissem and Jones, I.K. International Pvt. Ltd.

Name of SoS – School of Studies in Chemistry

Syllabus- Choice Based Syllabus (Third Semester)

Name of paper- NANOCHEMISTRY AND ITS APPLICATIONS

Total Credit-03 **Total Marks -80+20**

NANOCHEMISTRY AND ITS APPLICATIONS

Elective Course

Choice Based Credit System in Master Course in Chemistry

UNIT I: GENERIC METHODOLOGIES FOR NANOCHEMISTRY AND NANOTECHNOLOGY:

Introduction and classification - What is nanotechnology? - Classification of nanostructures - Nanoscale architecture; Summary of the electronic properties of atoms and solids - The isolated atom - Bonding between atoms - Giant molecular solids - The free electron model and energy bands - Crystalline solids - Periodicity of crystal lattices -Electronic conduction; Effects of the nanometre length scale - Changes to the system total energy - Changes to the system structure - How nanoscale dimensions affect properties?

UNIT -II. MATERIAL CHEMISTRY :

Preparation and Properties of Nanoparticles, Materials-Metals, Ceramics (Oxide, carbides, sulphides, nitrides).physical and chemical Methods, Size and Shape controlled Synthesis, Sol-gel methods, Optical Properteis, Electrical and Magnetic Properties, Application of Nanoparticles.

UNIT-III . CHARACTERIZATION METHODS.

X-ray diffraction - Debye-Scherer formula – dislocation density – micro strain –Synchrotron Radiation – Principle and Applications –Raman Spectroscopy and its Applications – Dynamic Light Scattering (DLS). Electron microscopes: scanning electron microscope (SEM) – transmission electron microscope (TEM); atomic force microscope(AFM) – scanning tunneling microscope (STM) - XPS – Working Principle, Instrumentation and Applications. Differential

scanning calorimeter (DSC) – Thermogravimetric/Diffferential Thermal Analyzer (TG/DTA) – UV – Visible Spectrophotometer - FTIR – Principle and Applications – Photoluminescence (PL) Spectroscopy.

UNIT-IV APPLICATIONS ON NANOCHEMISTRY

Nanobiology - Introduction - Bio-inspired nanomaterials - Interaction Between Biomolecules and Nanoparticle Surfaces - Different Types of Inorganic Materials Used for the Synthesis of Hybrid Nano-bio Assemblies -

UNIT-V APPLICATIONS OF NANO IN BIOLOGY

Applications of Nano in Biology -Nanoprobes for Analytical Applications - Current Status of Nanobiotechnology - Future Perspectives of Nanobiology; Nanosensors, Electrochemical , Nanobiosensors - Smart Dust; Nanomedicines, Nanodrug Administration Diagnostic and Therapeutic Applications.

References:

1. Nanoparticles: From Theory to Application Edited by Gu¨nter Schmid, @ 2004 WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim
2. Nanoparticles and Catalysis Edited by Didier Astruc @ 2008 WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim
3. Peter Atkins, Tina Overton, Jonathan Rourke, Mark Weller, Fraser Armstrong, Mike HagermanShriver and Atkin’s Inorganic Chemistry, Fifth Edition, Oxford, 2010.
4. Nanoscale Science and Technology, Robert W. Kelsall, Ian W. Hamley and Mark Geoghegan, John Wiley & Sons, Ltd., UK, 2005.
5. Introduction to Nanotechnology, Charles P. Poole Jr and Frank J. Owens, Wiley Interscience, 2003.
6. Nano:The Essentials: Understanding Nanoscience and Nanotecnology, T.Pradeep, Tata McGraw-Hill Publishing Company Limited, New Delhi, 2008.

SVM SoS in Comparative Religion, Philosophy & Yoga

Choice Based Credit System (Elective Paper)

दर्शनशास्त्र एवं योग का परिचय : Introduction to Philosophy & Yoga
भाग–I / Part-I (For Second Semester)

कुल केडिट –03 कुल – 80

खण्ड-1 - भारतीय दर्शन एवं संस्कृति का परिचय, वेद, उपनिषद, आस्तिक–नास्तिक दर्शन, नीतिशास्त्र का परिचय, नैतिक मूल्य एवं अन्य मूल्य, सद्गुण, दण्ड के सिद्धान्त

Section-1- Introduction to Indian Philosophy & Culture. Veda, Upanishad, Astika-Nastika Philosophy. Introduction to Ethics, Moral values and other values, Virtue, Theories of Punishment.

खण्ड-2 - धर्म दर्शन का परिचय, ईश्वर के अस्तित्व के प्रमाण (भारतीय एवं पाश्चात्य) ईश्वर के अनस्तित्व के प्रमाण (भारतीय एवं पाश्चात्य)

Section-2 - Introduction to Philosophy of Religions, Proofs for the existence of God (Indian & Western), Proofs for the non-existence of God (Indian & Western)

खण्ड -3 - भारतीय समाज दर्शन का परिचय, स्वामी विवेकानन्द का वेदान्तिक सिद्धान्त महात्मा गांधी का सर्वधर्म समभाव, पं.दीनदयाल उपाध्याय का एकात्म मानव दर्शन : आधुनिक पाश्चात्य दर्शन का परिचय, बुद्धिवाद, अनुभववाद, कॉट का समीक्षावाद

Section-3 - Introduction to Indian Social Philosophy, Vedantic principle of Swami Vivekanand, Sarvadharma Sambhav of Mahatma Gandhi, Integral humanism of Pt. Deen Dayal Upadhayaya Introduction to Modern-Western Philosophy, Rationalism, Empiricism, Theory of criticism of Kant.

Suggested Books-

1. भारतीय दर्शन (Volume-I) – डॉ. राधाकृष्णन
2. धर्म दर्शन – डॉ. लक्ष्मी निधि शर्मा
3. समाज दर्शन – डॉ. शिव भानु सिंह
4. पाश्चात्य दर्शन – डॉ. चन्द्रधर शर्मा

टीप–प्रत्येक भाग में तीन–तीन खण्ड है। प्रत्येक खण्ड एक केडिट का है।

Swami Vivekanand Memorial
SOS in Comparative Religion, Philosophy & Yoga
Pt. Ravishankar Shukla University, Raipur

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SVM SoS in Comparative Religion, Philosophy & Yoga

Choice Based Credit System (Elective Paper)

दर्शनशास्त्र एवं योग का परिचय : Introduction to Philosophy & Yoga

भाग–II / Part-II (For Third Semester)

कुल केडिट –03 कुल – 80

खण्ड-1 - योग की परिभाषा, उद्देश्य, आसनों का वर्गीकरण, आसन और व्यायाम में अंतर, बंधो का वैज्ञानिक विवेचन, प्राणायाम की परिभाषा, प्राणायाम के लाभ, प्राणायाम की प्रकिया का वैज्ञानिक विवेचन, श्वसन तंत्र की किया विधि प्राणायाम के संदर्भ में, दीर्घ श्वसन एवं प्राणायाम मे अंतर।

Section-1- Definition of Yoga, Aims, Classification of Asanas, Difference between Asana and exercise, scientific explanation of Bandhas, Definition of Pranayama, Benefits of Pranayama, Scientific explanation of process of Pranayama, Process of respiratory system-with reference to Pranayama, Difference between long breathing & Pranayama.

खण्ड-2 - प्राण शक्ति के पॉच स्वरूप, विभिन्न रोगों के निदान में प्राणायाम की उपयोगिता–आधुनिक वैज्ञानिक अध्ययन के संदर्भ में।

Sectoin-2 - Five aspects of Prana shakti, Utility of Pranayama in curing different diseases-with reference to modern scientific study.

इकाई -3 - स्वास्थ्य की परिभाषा, स्वस्थ व्यक्ति के लक्षण, दिनचर्या, कर्मयोग, सांध्योपासना, ब्रह्मचर्य, विभिन्न रोगों के लक्षण, कारण एवं यौगिक उपचार।
आधुनिक जीवन शैली में योग की प्रासंगिकता–सावधानियॉ एवं निदान

UNIT-3 - Definition of Health, Characteristics of healthy person, Daily routine, Karma-Yoga, Evening prayer, Celibacy; Symptoms, Causes and Yogic treatment of different diseases.
Relevance of Yoga in modern life style- Precautions & treatment.

Suggested Books-

1. स्वस्थवृत्त विज्ञान – डॉ. रामहर्ष सिंह
2. योगिक चिकित्सा – स्वामी कुवल्यानंद
3. प्राण शक्ति : एक दिव्य विभूति – पं. श्रीराम शर्मा
4. योग दीपिका – बी. के. एस. अयंगर
5. योग एवं यौगिक चिकित्सा – डॉ. रामहर्ष सिंह

टीप–प्रत्येक भाग में तीन–तीन खण्ड है। प्रत्येक खण्ड एक केडिट का है।

HEAD
Swami Vivekanand Memorial
SOS in Comparative Religion, Philosophy & Yoga
Ravishankar Shukla University, Raipur

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Department Name	**: S.o.S in Computer science and IT**
Course	**: M.Sc.(IT)Choice Based CourseIIISemester**
Paper Name	**: ESSENTIAL OF INFORMATION TECHNOLOGY**

Total Credit: 03 **Total Marks: 100**

ESSENTIAL OF INFORMATION TECHNOLOGY

Introduction to Computers: Definition, Characteristics and capabilities of computer system: Speed, Accuracy, Reliability, Memory capability. Block Diagram of a Computer, Computer Hardware and Software, Different Types of Software. Types of Computers: Analog, Digital, Hybrid General and Special Purpose Computers. Generation of Computers.

Computer Organization: Input Devices: Keyboard, Card Readers. Scanning Devices – O.M.R., Character Readers, MICR and Smart Cards. Pointing Devices-Mouse, Light Pen. Output Devices: Printers, Plotters, Central Processing Unit: The Microprocessor, control unit, A.L.U., Main Memory, Random Access Memory, and Read Only Memory (ROM).

Operating System: Software-Types of Software, System software Vs. Application Software, Operating system and its types. Language Processors, Assembler, Compiler & Interpreter. Introduction of DOS: DOS, System Files. Internal and External DOS Commands.

Office Automation: Ms-Word: - Creating and editing word document, formatting documents, word art, graph, mail merge. **Ms-Excel**: Introduction to spread sheet, formatting in cell and text, functions, creating chart and graph. **Powerpoint**: creating presentation ,working with slides, slide transition, animating object. **Ms-Access**: Database, creating table, Query.

Books

1. Using IT : Williams T M Hill
2. Computer Fundamentals : B. Ram, New Age International (P) Ltd
3. Fundamental of Information Technology : Chetan Shrivastava_Kalyani Publishers
4 Computer Fundamentals : P.K Sinha BPB Pubications

15-12-2016

Department Name : S.o.S in Computer science and IT
Course : MCA Choice Based Course III Semester
Paper Name : COMPUTER NETWORKING & INTRODUCTION TO HTML

Total Credit: 03 **Total Marks: 100**

COMPUTER NETWORKING & INTRODUCTION TO HTML

Networking Concept: Basics of Computer networks: Communication process, Communication media, network topologies, Types of network (LAN, WAN, MAN), Modem, Ethernet, Bridge, Switch, Hub and Routers. Internet: Basic Internet Terminologies. Client server computing, Distributed Computing, Domain naming system, DNS Server, Internet Security, Internet Applications. Architecture of Internet, Client server model, www, Email ,E-commerce and E-business.

The OSI Model- The model-Layered architecture, functions of the layers- Physical layer, Data Link layer, Network layer, Transport layer, session layer, Presentation layer, Application layer; the TCP/IP reference model, comparison of TCP/IP & OSI, Novell Netware, Arpanet, NSFNET.

Transmission of Digital Data- Analog and Digital, digital data transmission- parallel transmission, serial transmission, DTE-DCE interface data terminal equipment, data circuit terminating equipment, standards, modems-Transmission rate, Modem standards.

HTML- What is HTML, HTML documents/files. HTML Editor, explanation of the structure of home page, elements in HTML document, HTML elements, HTML tags and basic HTML tags, viewing the source of webpage. Downloading the Web Pages source Image, internal and external linking between web pages– IMG elements, Designing webpage, working with views, Hyperlinks, setting Hyperlink, using List, themes, tables, Frames, style sheet, working with forms, page Templates, frame templates, anchor, working with banners, Dynamic effect, How to publishing web pages in local area network.

Books Recommended:

1. Introduction to Data Communication & Networking : Behrouz & Forouzan
2. Web Publishing : Monika D'souza & Jude D'souza
3. Computer Network : A. S. Tanenbaum
4. Complete Reference HTML

15-12-2015

Department Name School of Studies in Computer science and IT
Course Choice Based Course II Semester
Paper Name COMPUTER NETWORKING & WEB TECHNOLOGY
Total Credit: 03 **Total Marks: 100 (80 Theory + 20 Internal)**

COMPUTER NETWORKING & WEB TECHNOLOGY

Networking Concept: Basics of Computer networks: Communication process, Communication media, network topologies, Types of network (LAN, WAN, MAN), Modem, Ethernet, Bridge, Switch, Hub and Routers. Internet: Basic Internet Terminologies. Client server computing, Distributed Computing, Domain naming system, DNS Server, Internet Security, Internet Applications. Architecture of Internet, Client server model, www, Email, E-commerce and E-business.

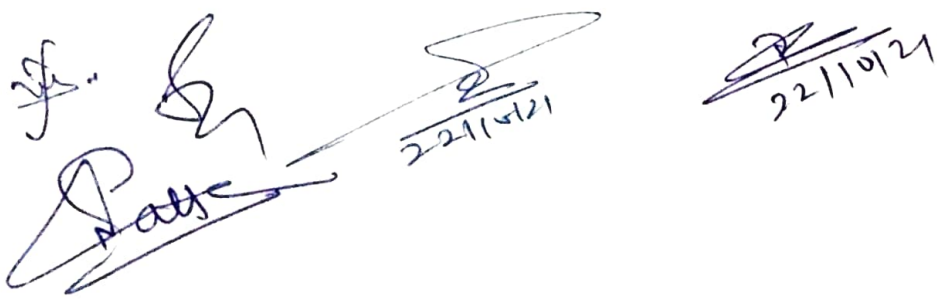
The OSI Model- The model-Layered architecture, functions of the layers- Physical layer, Data Link layer, Network layer, Transport layer, session layer, Presentation layer, Application layer; the TCP/IP reference model, comparison of TCP/IP & OSI, Novell Netware, Arpanet, NSFNET.

Transmission of Digital Data- Analog and Digital, digital data transmission- parallel transmission, serial transmission, DTE-DCE interface data terminal equipment, data circuit terminating equipment, standards, modems-Transmission rate, Modem standards.

HTML- What is HTML, HTML documents/files. HTML Editor, explanation of the structure of home page, elements in HTML document, HTML elements, HTML tags and basic HTML tags, viewing the source of webpage. Downloading the Web Pages source Image, internal and external linking between web pages– IMG elements, Designing webpage, working with views, Hyperlinks, setting Hyperlink, using List, themes, tables, Frames, style sheet, working with forms, page Templates, frame templates, anchor, working with banners, Dynamic effect, How to publishing web pages in local area network.

BOOKS RECOMMENDED:

1. Introduction to Data Communication & Networking : Behrouz & Forouzan
2. Web Publishing : Monika D'souza & Jude D'souza
3. Computer Network : A. S. Tanenbaum
4. Complete Reference HTML



Department Name	**School of Studies in Computer science and IT**
Course	**Choice Based Course III Semester**
Paper Name	**ESSENTIAL OF INFORMATION TECHNOLOGY**
Total Credit: 03	**Total Marks: 100 (80 Theory + 20 Internal)**

ESSENTIAL OF INFORMATION TECHNOLOGY

Introduction to Computers: Definition, Characteristics and capabilities of computer system: Speed, Accuracy, Reliability, Memory capability. Block Diagram of a Computer, Computer Hardware and Software, Different Types of Software. Types of Computers: Analog, Digital, Hybrid General and Special Purpose Computers. Generation of Computers.

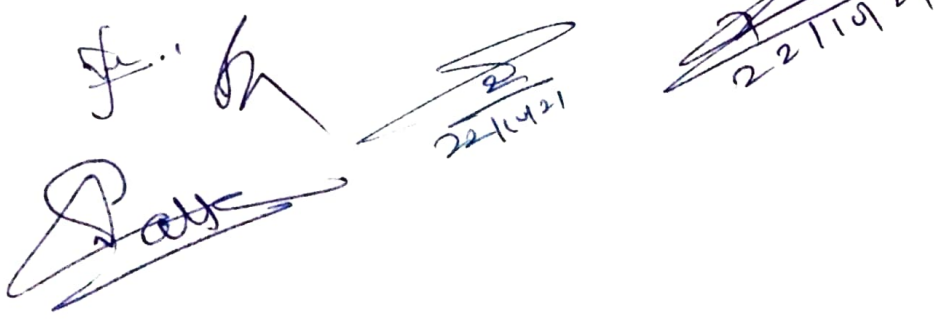
Computer Organization: Input Devices: Keyboard, Card Readers. Scanning Devices – O.M.R., Character Readers, MICR and Smart Cards. Pointing Devices-Mouse, Light Pen. **Output Devices**: Printers, Plotters, **Central Processing Unit**: The Microprocessor, control unit, A.L.U., Main Memory, Random Access Memory, and Read Only Memory (ROM).

Operating System: Software-Types of Software, System software Vs. Application Software, Operating system and its types. Language Processors, Assembler, Compiler & Interpreter. Introduction of DOS: DOS, System Files. Internal and External DOS Commands.

Office Automation: MS-Word: - Creating and editing word document, formatting documents, word art, graph, mail merge. **MS-Excel**: Introduction to spread sheet, formatting in cell and text, functions, creating chart and graph. **MS-PowerPoint**: creating presentation, working with slides, slide transition, animating object. **MS-Access**: Database, creating table, Query.

BOOKS RECOMMENDED:

1. Using IT : Williams, TMH
2. Computer Fundamentals : B. Ram, New Age International (P) Ltd
3. Fundamental of Information Technology : Chetan Shrivastava_Kalyani Publishers
4 Computer Fundamentals : P.K Sinha, BPB Pubications



Department- School of Studies in Economics
Syllabus - Choice Based Syllabus Third Semester
Name of Subject- Indian Economy
Total Credit- 3, Total Marks- 100

Unit – I GDP and National Income of India, Role of Primary, Secondary & Tertiary Sectors in GDP of India, National Income and Per Capita Income, Planning in India – Objectives and strategies of planning, NITI Aayog, Demographic Features of India and Chhattisgarh, National Population Policy.

Unit – II Agricultural Development in Indian Economy – Agricultural Growth and Productivity, Green Revolution, Food Security in India, Poverty and Inequality in India, Industrial Development in India, Industrial Policies of 1956 and 1991, Public sector Enterprises and their performance, MSMEs.

Unit – III External Sector Behavior of Indian Economy - Structure and Direction of Foreign Trade, Public Finance in Indian Economy – Fiscal Federation, Central-State Financial Relationship, Fourteenth Report of Finance Commission.

Text Books :-

1. Ahulwalia, I. J. and I. M. E. Litle (Eds.) 1999), India's Economic Reforms and Development (Essay honor of Manohar Singh), Oxford University Press, New Delhi.
2. Bardhan, P. K. (9th Edition) (1998), The Political Economy of Development India, Oxford University Press, New Delhi.
3. Bawa, R.S. and Raikhy (Ed.) (1997), Structural change in Indian Economy, Guru Nanak Dev University Press. Amritsar.
4. Brahmananda, P. R. and V. R. Panchmukhi, Development Experience in the Indian Economy: Interstate Perspectives, Bookwell, Delhi (9th Eds.) 2001.
5. Chakravarty, S. (1987): Development Planning: The Indian Experience, Oxford University Press, New Delhi.
6. Dantwala, M.L. (1996): Dilemmas of Growth: the Indian Experience, Sage Publication, New Delhi.
7. Dutta, Gourav and Ashwini Mahajan, (2014) Indian Economy, S. Chand Publications, New Delhi, 71st Edition.
8. Mishra, S. K. and V. K. Puri, (2014) Indian Economy, Himalaya Publishing House Pvt. Ltd., New Delhi, 32nd Edition.

Department- School of Studies in Economics
Syllabus - Choice Based Syllabus Second Semester
Name of Subject- Basic Economic Concepts
Total Credit- 3, Total Marks- 100

Unit 1- Basic Economic Problems, Scope of Economics and its nature, Equilibrium Analysis, Demand, Elasticity of Demand, Law of Diminishing Marginal Utility. Consumer Surplus, Supply- Elasticity of Supply, Production Function, The Concept of Cost and its Nature, The Concept of Revenue,

Unit 2- The Concept of Market and its Kinds. Perfect Market imperfect Market, Monopoly, Marginal Theory of Distribution, Macro Economics- National Income Definition, Types and methods of Measurement, Consumption Function, Saving and Investment, Inflation, Monetary and Fiscal Policy.

Unit 3- Development and Growth -Meaning and Definition, Obstacle, Features of Developed and Developing Countries, HDI, Sustainable Development, WTO, International Trade and Balance of Payment in India.

Text Books

1. Jhingan, M. L. (2014), Advanced Economic Theory, Vrinda Publication, New Delhi
2. Ahuja, H. L. (2014), Advanced Economic Theory, S. Chand Publication, New Delhi
3. Jhingan, M. L. (2014), Macro Economic analysis, Vrinda Publication, New Delhi.
4. Ahuja, H. L. (2014), Macro Economic Theory, S. Chand Publication, New Delhi
5. Jhingan, M. L. (2008) 31ST edition, The Economics of Development and Planning, Vrinda publication New Delhi.
6. Mishra, J.P. (2012) Economics of Growth and Development, Sahitya bhawan publication Agra.
7. Vaish, M. C. and Sudama Singh, (2011) International Economics, Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.

Course Structure and Syllabus

CHOICE BASED CREDIT SYSTEM

IN

M.Sc.ELECTRONICSPROGRAMME

FACULTY OF SCIENCE

Approved by Board of Studies in Electronics

(Academic Session July 2020 and onwards)

School of Studies in Electronics and Photonics

Pt.RavishankarShuklaUniversity

Raipur (C.G.) 492010

www.prsu.ac.in

School of Studies in Electronics & Photonics,

Pt. Ravishankar Shukla University, Raipur

M. Sc. Electronics CBCS

Scheme &Syllabus

Session 2020-22

Sr. No.	Paper Code	Title of Elective Paper	Marks			Credit
			External	Internal	Total	
1.	ELCBCS-1	Basics of Electronics[a]	80	20	100	3
2.	ELCBCS-2	Fundamentals of Biomedical Equipments[b]	80	20	100	3

[a]For all students except students of Electronics and Physics

[b]For all students

- **Each elective paper comprises of three units and carries a total of 3 credits.**
- **Note: Student can earnmaximum of 6 credits or minimum of 3 credits out of the aforesaid elective papers.**
- **Enrolment of 10 students is minimum requirement for switching on the course for a particular semester with the maximum limit of 30 students**
- **The courses will be offered either during the second or the third semester.**
- **Classes will be held on 3pm to 4pm or 4pm to 5 pm.**
- **Basis of Selection: First come and first serve basis.**

Name of the Department - **SOS in Electronics and Photonics, PRSU, Raipur**

Course - Choice Based Course **ELCBCS-1,SecondSemester**

Name of Question Paper - **ELCBCS-1 Basics of Electronics**

Total Credit - **03**; Total Marks - **100**

Course Details- This course introduces students to the basic components of electronics: diodes, transistors, and op amps. It covers the basic operation and some common applications.

EL1 Basics of Electronics

Basic electronics-Introduction, Applications, Concepts of charge, potential, voltage, current, power and their units, Active and passive components,

Basic concepts and resistor circuits Resistor and its color codes, AC signals

AC circuits Introduction, Capacitors, Inductors, RC circuits, Response to a sine wave

Overview of Analog circuitry- Introduction to semiconductors, Conductors, Insulators, Diode and its type, Transistor and its types- NPN & PNP, Transistor as an amplifier and switch. Introduction to MOSFETS, Operational Amplifiers and Integrated Circuits.

Digital Electronics- Analog vs digital signals, Concept of amplitude and frequency, Number system and their conversions, Boolean arithmetic, De – Morgan laws, basic logic gates: their realization, Universal gates, Exclusive – OR and Exclusive NOR-gates.

Text Books

[1.] Basic Electronics for Scientists and Engineers, Dennis L. Eggleston, Cambridge University Press.

[2.] Basic Electronics and Linear Circuit by N. N. Bhargava, DC Kulshreshtha and S. C. Gupta,Tata McGraw-Hill

[3.] Electronic Devices and Circuit Theory, 9th ed. Boylestad&Nashelsky, PHI

[4.] Digital Principal and Application - Malvino Leach, Tata Macgraw Hill

[5.] Modern Digital Electronics - R.P. Jain, Tata Mcgraw

References

[6.] Basic Electronics Solid State by B. L. Thereja,S Chand

[7.] Electronic Devices & Circuit Analysis – K Lal Kishore, BS Publications

Name of the Department - **S.O.S. in Electronics and Photonics, PRSU, Raipur**

Course - Choice Based Course **ELCBCS-2,Third Semester**

Name of Question Paper - **ELCBCS-2 Fundamentals of Biomedical Equipments**

Total Credit - **03** ; Total Marks - **100**

Course Details-

EL2 Fundamentals of Biomedical Equipments

Basics of measuring instruments of electronics- Overview of electricity, Circuit basics, Concept of various measuring parameters- voltage, current, power, ohm's law, Kirchhoff's law.

Biomedical equipment overview- Electronics and Medicine, medical electronics, Importance of measuring instruments in Biomedical, Overview of Electrocardiograph- operation, origin of the ECG waveform

Electroencephalography (EEG) - Signal sources, Recording modes, Applications of the EEG; Techniques to Aid observation- X-ray and Radiography, Diagnostic Ultrasound.

Text Books-

- Principles of Medical Electronics and Biomedical Instrumentation- C. Raja Rao, S. K. Guha, Universities Press (India Limited)
- Introduction to Biomedical Instrumentation- Mandeep Singh, PHI Learning Pvt. Ltd.

Reference Books-

- Biomedical instrumentation and measurements – Leslie Cromwell, Fred J. Weibell, Erich A. Pfeiffer
- Measurements And Instrumentation- A.V.BakshiU.A.Bakshi, Technical publication, Pune
- Biomedical Instrumentation and Measurment- R. Anandanatarajan, PHI

Name of School of Studies - Geography

Course – Choice Based Credit Course –**II Semester**

Name of Paper – **Physical Geography**

Total Credit – 03 Total Marks – 100

Syllabus of Course

Paper I
Physical Geography

Solar System, Origin of earth, movement of earth, eclipce. Internal structure of the earth, Rocks, Earth quake Volcano.

Denudation Process, land form associated with fluvial, glacial arid, coastal and Karst.

Composition and Structure of the atmosphere Insolation, Monsoon and Cyclones, Global Warming.

Major features of ocean basin, Temperature and Salinity, Waves, Tides and Oceanic currents.

Suggested Reading:

1. Singh, S : Physical Geography, Prayag Publication, Allahabad
2. Dayal, P : Physical Geography, R.K. Books, New Delhi, 2008
3. Lal, D. S. : Physical Geography, Sharda Pustak Bhawan, Allahabad.
4. दयाल परमेश्वर : भौतिक भूगोल, राजेश पब्लिकेशन, नई दिल्ली, 2012
5. लाल, डी. एस. भौतिक भूगोल, शारदा पुस्तक भवन इलाहाबाद
6. सिंह, सविन्द्र भौतिक भूगोल, प्रयाग प्रकाशन इलाहाबाद

Name of School of Studies - Geography

Course – Choice Based Credit Course –**III Semester**

Name of Paper – **Regional Geography of India with special reference to Chhattisgarh**

Total Credit – 03 Total Marks – 100

Syllabus of Course

Paper II

Regional Geography of India with special reference to Chhattisgarh

Geography of India: Location and extent Physiographic divisions, Climate, Vegetation, Soil, Mineral and Power resources.

India - Agriculture and Irrigation, Major Industries and Industrial region. Trade and transport. Population Growth, Distribution and Density.

Geography of Chhattisgarh: Location and extent, Physiographic divisions, Climate, Vegetation, Soil, Mineral and Power resources.

Chhattisgarh - Agriculture and Irrigation, Major Industries. Trade and transport. Population Growth, Distribution and Density.

Suggested Reading:

1. Husain, M. : Geography of India
2. Singh R. L. : Geography of India
3. Tiwari, Vijay : Geography of Chhattisgarh
4. Tiwari R.C. : Geography of India
5. Khullar D.R.: Geography of India
6. Chouhan P.R. Geography of India in reference of Chhattisgarh
7. अग्रवाल, पी.सीः भारत का भौतिक भूगोल, एशिया प्रकाशन रायपुर 2003
8. बंसल सुरेषचंन्द, भारत का भूगोल, मिनाक्षी प्रकाशन, मेरठ.
9. कुमार, प्रमिला : छत्तीसगढ़ का भूगोल
10. चन्द्राकर, पी. एल : छत्तीसगढ़ का भूगोल
11. कमलेश, एस.आर. : छत्तीसगढ़ की भौगोलिक समीक्षा, वसुन्धरा प्रकाशन, गोरखपुर, 2006

ME-II PROJECT ORIENTED DISSERTATION

SCRIPT EVALUATION	**100**
SEMINAR	**25**
VIVA VOCE	**25**

MINOR ELECTIVE (CBCS)

GMnE-I FUNDAMENTAL OF GEOLOGY

UNIT- I

1.1 Geology and its perspective. Earth in the Solar System
1.2 Age of the earth.
1.3 Interior of the earth and its manifestation.
1.4 Brief introduction of hydrosphere and atmosphere. Hydrologic Cycle.

UNIT- II

2.1 Earthquakes and Volcanoes.
2.2 Continental Drift
2.3 Fundamentals of Plate Tectonics and Plate boundaries
2.4 Distribution of Oceans and Continents. Tectonic divisions of India

UNIT- III

3.1 Definition and classification of minerals, rock forming minerals
3.2 Classification of rocks. Igneous rocks and their types.
3.3 Sedimentary and Metamorphic rocks and their types.
3.4 Deformation in rocks. Folds, Faults and Unconformities

UNIT- IV

4.1 Geomorphic agents, Weathering.
4.2 Salient geomorphic features.
4.3 Types mountains and plains
4.4 Fossils and their applications

UNIT- V

5.1 Industrial uses of Iron, Manganese, Bauxite
5.2 Industrial uses of Copper, Lead and Zinc
5.3 Fossil Fuels: Coal and Petroleum- mode of occurrence and distribution in India

5.4 Conservation of energy and mineral resources.

Books Recommended:

Mukherjee, P. K. (2005). Text Book of Geology, The World Press Pvt. Ltd.
Roy, A. B. (2010). Fundamentals of Geology, Narosa Pub. House Pvt. Ltd.
Rogers and Adams (1966), Fundamentals of Geology, Harper & Row

GMnE- 2 DISASTER MANAGEMENT

UNIT- I

1.1 Natural Disasters: Introduction
1.2 Causes and impact of Floods, Droughts,
1.3 Cyclone, Landslides,
1.4 Earthquake and Tsunamis

UNIT- II

2.1 Man-made Disasters: introduction
2.2 Causes and impact of Nuclear, Industrial accidents,
2.3 Environmental disasters, fires, rail accidents, road accidents,
2.4 Air accidents and sea accidents

UNIT – III

3.1 Hazard Risk Concept and Elements.
3.2 Risk Analysis and Risk Assessment.
3.3 Resource Analyses and Mobilisation.
3.4 Strategic Developments for Vulnerability Reduction

UNIT- IV

4.1 Disaster Preparedness: Conception and Nature.
4.2 Disaster Management – Prevention, Preparedness and Mitigation.
4.3 Search and rescue operations
4.4 Use and Applications of Emerging Technologies in Disaster Preparedness.

UNIT- V

5.1 Disaster Management Plan
5.2 Disaster Response Plan.
5.3 Communication, Participation, and Activation of Emergency Preparedness Plan.
5.4 Logistics Management.

Books Recommended:

Bell, F.G. (1999): Geological Hazards, Routledge, London.
Bryant, E. (1985): Natural Hazards, Cambridge Univ. Press.
Keller, E.A. (1978): Environmental Geology, Bell and Howell, USA.

Lal, D. S. (2007): Climatology, Sharda Pustak Bhawan, Allahabad.
Patwardhan, A.M. (1999): The Dynamic Earth System, Prentice Hall.
Smith, K. (1992): Environmental Hazards, Routledge, London.
Subramaniam, V. (2001): Textbook in Environmental Science, Narosa International.
Valdiya, K.S. (1987): Environmental Geology – Indian Context, Tata McGraw Hill.

इतिहास अध्ययन शाला

पाठ्यक्रम– च्वाइस बेस्ड क्रेडिट सिस्टम

(सत्र 2015–16 से प्रारंभ) द्वितीय सेमेस्टर

प्रश्न पत्र का नाम– भारतीय स्वाधीनता आंदोलन की प्रमुख धाराएँ

कुल क्रेडिट– 3, कुल अंक– 100

क्रेडिट 1

1. 1857 की क्रांति ,कारण, स्वरूप एवं परिणाम
2. राष्ट्रवाद का उद्भव
3. भारतीय राष्ट्रीय क्रांगेस की स्थापना
4. उदावादी युग

क्रेडिट 2

5. उग्रवाद एवं बंगाल मे स्वदेशी आंदोलन
6. भारत में क्रांतिकारी आंदोलन – प्रथम चरण
7. विदेशो में क्रांतिकारी आंदोलन
8. भारत में क्रांतिकारी आंदोलन – द्वितीय चरण

क्रेडिट 3

9. भारतीय राजनीति में महात्मा गांधी का प्रादुर्भाव एवं असहयोग आंदोलन
10. सविनय अवज्ञा आंदोलन
11. भारत छोड़ो आंदोलन
12. आजाद हिन्द फौज और सुभाष चंद्र बोस

संदर्भग्रंथ :–

1. ताराचंद – भारतीय स्वाधीनता आंदोलन का इतिहास भाग 3 एवं 4
2. आभा सक्सेना – इंडियन नेशनल मूवमेंट द लिबरलस
3. ए. आर. देसाई – भारतीय राष्ट्रवाद की सामाजिक पृष्ठभूमि
4. कौलेश्वर राय – फ्रीडम स्ट्रगल
5. विपिन चंद्र – भारतीय स्वतंत्रता संग्राम का इतिहास
6. यशपाल एवं ग्रोवर – आधुनिक भारत का इतिहास

इतिहास अध्ययन शाला
पाठ्यक्रम– च्वाइस बेस्ड क्रेडिट सिस्टम
तृतीय सेमेस्टर
प्रश्न पत्र का नाम– छत्तीसगढ़ की कला और संस्कृति
कुल क्रेडिट– 3, कुल अंक– 100

क्रेडिट 1

1. बस्तर की जनजातियां
2. बस्तर की कलाएँ –ढोकरा, काष्ठ शिल्प, बांस शिल्प एवं मृदा शिल्प
3. बस्तर के लोकनृत्य एवं लोकगीत
4. बस्तर का दशहरा

क्रेडिट 2

5. छत्तीसगढ़ में विभिन्न पर्व ,त्योहार एवं मेले
6. छत्तीसगढ मे प्रमुख लोकगीत
7. छत्तीसगढ़ में पमुख लोकनृत्य
8. छत्तीसगढ़ के प्रमुख लोककलाकार

क्रेडिट 3

9. प्रोजेक्ट कार्य / कार्यशाला

संदर्भ ग्रंथ

1. ठाकुर केदार नाथ – बस्तर भूषण
2. डॉ हीरालाल शुक्ल – छत्तीसगढ़ का जनजातीय इतिहास
3. लाला जगदलपुरी – बस्तर लोक कला – संस्कृति
4. मदनलाल गुप्ता – छत्तीसगढ़ की संस्कृति एवं लोक आयाम के विभिन्न स्वरूप
5. जे़.आर.वर्ल्यानी एवं वासुदेव साहसी – बस्तर का राजनीतिक एवं संस्कृतिक इतिहास
6. वीरबाला भावसार – आदिवासी कला
7. रामकुमार बेहार एवं नर्मदा प्रसाद श्रीवास्तव – आदिवासी बस्तर

अध्ययनशाला का नाम	–	विधि अध्ययनशाला
पाठ्यक्रम का नाम	–	च्वॉयस बेस्ड पाठ्यक्रम द्वितीय सेमेस्टर
प्रश्नपत्र का नाम	–	सामान्य विधि (General Law)
कुल क्रेडिट	–	100 अंक
पाठ्यक्रम विवरण	–	विवरण संलग्न

SoS in Law
choice based Syllabus
IInd Sem
Syllabus of law
PAPER No. 1
(General Law)

3 Cerdit
Time: 3-Hr
Marks: 100

I

General introduction of legal system: History of Indian legal Introduction in ancient medieval and modern period. Law as a means of social control & welfare of the citizen. It's source, definition & scope in Dharmashastras & other ancient Indian literature.
Jurisprudence & classification of law: Definition of laws, their kinds, theories of their origin & views of school & their thinkers such as analytical, historical, Philosophical, Social, Psychological and Realist school of law. What is jurisprudence, its definition & scope of studies, possession, title ownership rights and other concept relating to law. their Universality in Judicial system.

II

Administrative law - Principal of Neutral justice, Delegated legislation & their Constitutionality, Judicial Review of Administration Action, Ombudsman, Lokayukt & Lokpal. Law of Crimes- General Principals of Criminal Liability, Classification of Offinses in Indian Penal Code, their Definition and Legislative Punishment, Abutment & Attempts. General Exception & Principles of Interpretation.

III

Law of Torts- Definition, nature, General Defense, Various types of Torts and their Ingredients, Remedies of Torts, Liability without fault, Vicarious Liability & Negligence.
Law of Contract and Mercantile Law - Nature and Formation of Contract, Conditions for Valid Contract, Void Voidable , Illegal and Unemforeceable Contract, Breach of Contract, Quasi Contract, Indemnity, Guarantee, Bailment and Agency. Sales of Goods, Partnership.

List of Recommended Books

1- Kane's Dhramashastra- Bhart Bhavan. New Delhi/Pune.
2- Jurisprudence- RWN Dias(Indian Rept.) Adivya,New Delhi
3- Indian Constitution - V.N.Shukla (EBC), Lucknow.
4- Principal of Administrative Law- M.P.Jain,&M.P.Jain (Tripathy).Bombay
5- Indian Penal Code- Ratan Lal Dhirajlal (Wadhwa), Nagpur
6- Law of Torts- Ramaswami Aiyer, (Lexus Nexus), Mumbai
7- Indian Contract Act 1872
8- The Negotiable Instrument Act 1881
9- Indian Partnership Act 1932
10- The sales And Goods Act 1930
11-The Arbitration and Conciliation Act 1996
12- International Law- S.K.Kapor (EBC), Lucknow.

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अध्ययनशाला का नाम	–	विधि अध्ययनशाला
पाठ्यक्रम का नाम	–	च्वॉयस बेस्ड पाठ्यक्रम तृतीय सेमेस्टर
प्रश्नपत्र का नाम	–	भारत का संवैधानिक विधि (Constitutional Law of India)
कुल क्रेडिट	–	100 अंक
पाठ्यक्रम विवरण	–	विवरण संलग्न

SUBJECT-LAW
PAPER NO-2

(CONSTITUTIONAL LAW OF INDIA)
CHOICE BASED CREDIT SYSTEM
(3rd Sem)

3 Credit
Time-3:00 Hr
Marks- 100

I- Philosophy of Constitution, Definition and classification Main features of federal and unitary Constitution, salient feature of Indian Constitution whether Indian Constitution in federal or unitary Preamble of the Constitution Fundamental Rights and Directive Principal of State Policy its comparison Right to Constitutional remedies and Fundamental Duties.

II- Union-Executive and Union Legislative Power of the President. State Executive and Legislature Power Previlege of and immunits of the Houses Power of Governor. Attorney General comptroller of and Auditor General of India. Union and State Judiciary their Jurisdiction & Power Business of the Government.

III- Composition, Constitution and power etc. of the local bodies, Union-State Relation Finance commission Borrowing etc. Provisions relating to Contractual and Tortuous liability and Right to Property Trade Commerce intercourses, Services, public service, commissions, emergency provision and Amendment.

RECOMMENDED BOOKS:

1 V.N. Shukla Constitution of India
2 J.N. Pandey Constitutional Law of India
3 M.P. Jain Constitution of India
4 D.D.Basu Shorter Constitution of India
5 Kagzi's The Constitution of India
6 M.D. Chaturvedi Bharat Ka Savindhan(Hindi)
7 भारत का संविधान – डॉ. जय नारायण पाण्डेय
8. भारत का संविधान – डॉ. जय जय राम उपाध्याय
9. भारत का संविधान – डॉ. बसन्ती लाल बाबेल

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1.2.2

CBCS

Library & Information Services

Total Credits - 3

Unit – I

- Library Classification : Its aims and function
- Standard Schemes of Library Classification.
- System of Book Number.

Unit – II

- Information: Concept, Meaning & Definition.
- Information Transfer Cycle: Generation, Collection, Storage and Dissemination.
- Intellectual Property Rights, Copyright Act & Introduction to Plagiarism-Basic and detection.

Unit – III

National and International Information Systems:

- NASSDOC, INFLIBNET, NESCARE. DESIDOC,
- National & International Funding Agencies : ICSSR, CSIR, DRDO, UGC, World Bank, DAE, INSA

Recommend Books:

1. प्रलेखन एवं सूचना सेवाएं तथा नेटवर्क : खण्ड1 प्रलेख एवं सूचना सेवाएं खण्ड2 सूचना प्रणालियां एवं नेटवर्क/एस. एम. त्रिपाठी
2. प्रलेखन एवं सूचना विज्ञान/ जे. एल. उपाध्याय
3. Documentation and Information Science/ S.P. Sood
4. Information and its Communication /R.G. Prasher
5. Elements of Library Classification/ Dr. S.R.Ranganathan

HEAD
BoS IN LIBRARY & INFORMATION SCIENCE
PT. RAVISHANKAR SHUKLA UNIVERSITY, RAIPUR (C.G.)

Scanned with CamScanner

CBCS

Library & Information Sources

Total Credits - 3

Unit – I

- Sources of Information: Primary, Secondary and Tertiary – Documentary and Non – documentary.
- Evaluation of Reference Sources: Encyclopedias – Encyclopedia Britannica, Encyclopedia Americana, International Encyclopedia of Science and Technology, International Encyclopedia of Social Science and Technology.

Unit – II

- Bibliometrics, Informetrics & Scientometrics: Concept definition and their scope
- Citation-Concept nature and definition.
- Standards for citing bibliographical references - Chicago manual, MLA & Harvard.

Unit – III

- Reference Sources : Year Books and Almanacs – Scope & purpose
- Evaluation of Europa Year Book, Statesman's Year Book, India : a reference Annual.

Recommend Books:

1. Fundamentals of Documentation : with special reference to India / P.S. Kawatra
2. Documentation : Generis and Development / S.R. Ranganathan
3. संदर्भ एवं सूचना सेवा के नवीन आयाम / एस. एम. त्रिपाठी
4. पुस्तकालय और समाज (Library and Society) /देवीदत्त चतुर्वेदी
5. Documentation and Information Services, Systems and Techniques/ J.K. Khanna

HEAD
BoS IN LIBRARY & INFORMATION SCIENCE
PT. RAVISHANKAR SHUKLA UNIVERSITY, RAIPUR (C.G.)

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Choice Based Syllabus for Second Semester (January-June)

Elective Paper: Plant Cosmetics

Credit: 3; Maximum marks 80+20

Flowering plants: Commercial Plant bioregulators for rooting, flowering, fruiting and seed setting. Plant cosmetics for; colour, texture, brightness and longevity of flowers and leaves, Plant cosmetics in enhancing the quantity and quality of biomolecules of medicinal plants; tissue and root culture.

Non-flowering plants: Plant cosmetics for; bushy nature, bright and colour leaves of crotons and other plants. Plant cosmetics for leafy plants, aromatic plants, indoor plants and lawn grass.

Plant bio regulators in plant based technology for; Cut, vase flowers, orchid cut-flower industry and bonsai plants. Post-harvest management and marketing issues of flowers, fruits and seeds.

Plant cosmetics in rose flower industry; positive response in stem length, pedicel length, longevity of buds and flower head, compactness and fresh weight.

Books Recommended:

Fosket DF	Plant Growth & Development
Leopold AC & Kriedemann PE	Plant Growth & Development
Moore TC	Biochemistry & Physiology of Hormones
L Taiz & E Zeiger	Plant Physiology
BB Buchanan, W Gruissem & RL Jones	Biochemistry and Molecular Biology of Plants
MB Wilkins	Advanced Plant Physiology
JA Hopkins	Introduction to Plant Physiology
FB Salisburry & CW Ross	Plant Physiology
Hans-Walter Heldt	Plant biochemistry & Molecular Biology

Choice Based Syllabus for Second Semester (January-June)

Elective Paper: Economic Zoology

Credit: 3; Maximum marks 80+20

Economic Entomology:
Sericulture: silk moth and worm, mulberry silk worm, economic importance of silk. Apiculture: honey bees and its social organization, methods of bee keeping, products of bee keeping and its economic importance. Lac culture: lac insect, cultivation of lac, lac composition, economic importance of lac. Insect Pest Management: Biological, hormonal and pheromonal control.

Aquaculture:
Fish culture: types of fish culture in India, methods of fishing, by-product of fishing industry. Prawn culture: culture of fresh water prawn, methods of prawn fishing, preservation and processing of prawn. Pearl culture: pearl formation, pearl industry and artificial insertion of nucleus, harvesting and composition of pearl.

Poultry:
Quail (Bater) farming: general characteristics of quail, egg production and hatching, brooding and rearing, management of adult quail. Quail housing equipments, nutrition, products technology (egg, meat and their products).

Books Recommended

1. Shukla &Upadhyaya: Economic Zoology, Rastogi Publication, Meerut
2. Panda et al: Quail production technology, Central avian research institute, Izatnagar
3. Venketaraman: Economic Zoology, Sudarsana Publication
4. Srivastava: A Text Book of Applied Entomology, Vol. II & III, Kalyani Publication

School of Life Sciences, PRSU, Raipur

Choice Based Syllabus for Third Semester (July- December)

Elective Paper: Vector Borne Diseases

Credit: 3; Maximum marks 80+20

Vectors

Definition; importance of studying vectors. A brief introduction of the various types of vectors including Arthopods and Molluscs and their ecological aspects related to disease transmission.

Vector borne diseases

An overview; Brief introduction of important vector borne diseases including Malaria, Chickungunia, Japanese encephalitis, Trypanosomiasis, Leishmaniasis, Lymphatic filariasis, Oncocerciasis, Tick borne diseases, Schistosomiasis.

Prevention and control of vectors

Vectors and their control: Chemical and biological methods, environmental management, community and personal prophylaxis.

Meeting challenges and role of public health stake holders in controlling vector borne diseases

Books Recommended

1. Chatterjee KD: Medical Parasitology
2. Park and Park: Preventive and Social Medicine
3. JC Cheng: A Text Book of Human Parasitology
4. Anantnarayana and Panicker: A Text Book of Medical Microbiology

Choice Based Syllabus for Third Semester (July-December)
Elective Paper: Rhythms in Life
Credit: 3; Maximum marks 80+20

Origin and evolution of rhythms; Types of rhythms and how to study rhythms?
Historical developments in chronobiology. Different types of geophysical and biological cycles with examples of circadian, ultradian and infradian rhythms. Autorhythmometry

Rhythms are ubiquitous from microbe to man
Characteristics of circadian rhythm: Free-run, Temperature and nutrition compensation, and Entrainment. Zeitgeber Time (ZT) and Circadian Time (CT). Example of circadian rhythms in plants, cyanobacteria, fungi, *Drosophila*, fish, mammals, and humans.

Application of principles of chronobiology to augment human welfare
Application of principles of Chronobiology in management of diseases with specific examples based on cancer and sleep disorders; and Shift work and Jet Lag

Recommended Books

S Binkley	Biological Clocks – Your Owner's Manual
MK Chandrashekaran	Time in the Living World
R Refinetti	Circadian Physiology
JC Dunlap, JJ Loros & PJ DeCoursey	Chronobiology: Biological timekeeping
WG van Doorn and U van Meeteren	Flower opening and closure: a review
AK Pati	Chronobiology: The dimension of time in biology and medicine; PINSA (Biological Sciences), PART B 67 (6), 323-372, 2001
AK Pati, A Chandrawanshi, A Reinberg	Shift work: Consequences and management, Current Science, 81 (1), 32-52, 2001
AK Pati, A Parganiha	Shift work: Circadian rhythm disruption and beyond PINSA (Biological Sciences), PART B 71 (5/6), 229, 2005
AK Pati	Chronobiology: Implications of circadian rhythms, National Academy Science letters 27 (7-8), 233-248, 2004.
JD Palmer	The living clock

Pt. Ravishankar Shukla University, Raipur (Chhattisgarh)

School of Studies in Life science (Syllabus 2020-2022)

Choice Based Syllabus for Second Semester (January-June)

Elective Paper: **Environmental Toxicology**

Credit: 3; Maximum marks 80+20

Types of environmental pollutions: A brief account of sources, implications and control: Air (Outdoor and Indoor), Water , Solid waste, Noise, and Electro magnetic radiations.

Fundamentals of toxicology: Scope of environmental toxicology and basic concepts. Toxins: Portal of entry, distribution, metabolism, site of action and nature of toxic effects. Eco–toxicology and its environmental significance.

Pesticides, Heavy Metals and Fluoride : Sources, environmental pathways and toxic effects with special reference to their status in Chhattisgarh

Books Recommended:

1. SVS Rana(2011) :Environmental pollution: Health and toxicology.*Publisher , Alpha Science Intl Ltd; 2 edition*
2. Michael H Dong (2018): An Introduction to Environmental Toxicology Publisher: *Create Space Independent Publishing Platform;* Fourth Edition

Pt. Ravishankar Shukla University, Raipur (Chhattisgarh)
School of Studies in Life science (Syllabus 2020-2022)

Choice Based Syllabus for Second Semester (January-June)

Elective Paper: **Economic Zoology**

Credit: 3; Maximum marks 80+20

Economic Entomology:

Sericulture: silk moth and worm, mulberry silk worm, economic importance of silk. Apiculture: honey bees and its social organization, methods of bee keeping, products of bee keeping and its economic importance. Lac culture: lac insect, cultivation of lac, lac composition, economic importance of lac. Insect Pest Management: Biological, hormonal and pheromonal control.

Aquaculture:

Fish culture: types of fish culture in India, methods of fishing, by-product of fishing industry. Prawn culture: culture of fresh water prawn, methods of prawn fishing, preservation and processing of prawn. Pearl culture: pearl formation, pearl industry and artificial insertion of nucleus, harvesting and composition of pearl.

Poultry:

Quail (Bater) farming: general characteristics of quail, egg production and hatching, brooding and rearing, management of adult quail. Quail housing equipments, nutrition, products technology (egg, meat and their products).

Books Recommended

1. Shukla & Upadhyaya: Economic Zoology, Rastogi Publication, Meerut
2. Panda et al: Quail production technology, Central avian research institute, Izatnagar
3. Venketaraman: Economic Zoology, Sudarsana Publication
4. Srivastava: A Text Book of Applied Entomology, Vol. II & III, Kalyani Publication

17/1/20

17.1.20

17/1/2020

17/01/2020

17.1.20

17/1/20

17/01/2020

School of Life Sciences, PRSU, Raipur

Choice Based Syllabus for Third Semester (July- December)

Elective Paper: **Vector Borne Diseases**
Credit: 3; Maximum marks 80+20

Vectors
Definition; importance of studying vectors. A brief introduction of the various types of vectors including Arthopods and Molluscs and their ecological aspects related to disease transmission.

Vector borne diseases
An overview; Brief introduction of important vector borne diseases including Malaria, Chickungunia, Japanese encephalitis, Trypanosomiasis, Leishmaniasis, Lymphatic filariasis, Oncocerciasis, Tick borne diseases, Schistosomiasis.

Prevention and control of vectors
Vectors and their control: Chemical and biological methods, environmental management, community and personal prophylaxis.
Meeting challenges and role of public health stake holders in controlling vector borne diseases

Books Recommended

1. Chatterjee KD: Medical Parasitology
2. Park and Park: Preventive and Social Medicine
3. JC Cheng: A Text Book of Human Parasitology
4. Anantnarayana and Panicker: A Text Book of Medical Microbiology

Pt. Ravishankar Shukla University, Raipur (Chhattisgarh)
School of Studies in Life science (Syllabus 2020-2022)

Choice Based Syllabus for Third Semester (July-December)

Elective Paper: Rhythms in Life
Credit: 3; Maximum marks 80+20

Origin and evolution of rhythms; Types of rhythms and how to study rhythms?
Historical developments in chronobiology. Different types of geophysical and biological cycles with examples of circadian, ultradian and infradian rhythms. Autorhythmometry – Study of behavioural and physiological rhythms in humans (Self).

Rhythms are ubiquitous from microbe to man
Characteristics of circadian rhythm: Free-run, Temperature compensation, and Entrainment. Zeitgeber Time (ZT) and Circadian Time (CT). Example of circadian rhythms in plants, cyanobacteria, fungi, *Drosophila*, fish, mammals, and humans.

Chronobiology and human health
Application of principles of Chronobiology in management of diseases with specific examples based on cancer and sleep disorders; and Shift work and Jet Lag

Recommended Books

S Binkley	Biological Clocks – Your Owner's Manual
MK Chandrashekaran	Time in the Living World
R Refinetti	Circadian Physiology
JC Dunlap, JJ Loros & PJ DeCoursey	Chronobiology: Biological timekeeping
WG van Doorn and U van Meeteren	Flower opening and closure: a review
AK Pati	Chronobiology: The dimension of time in biology and medicine; PINSA (Biological Sciences), PART B 67 (6), 323-372, 2001
AK Pati, A Chandrawanshi, A Reinberg	Shift work: Consequences and management, Current Science, 81 (1), 32-52, 2001
AK Pati, A Parganiha	Shift work: Circadian rhythm disruption and beyond PINSA (Biological Sciences), PART B 71 (5/6), 229, 2005
AK Pati	Chronobiology: Implications of circadian rhythms, National Academy Science letters 27 (7-8), 233-248, 2004.
JD Palmer	The living clock

साहित्य एवं भाषा–अध्ययनशाला
पं. रविशंकर शुक्ल विश्वविद्यालय, रायपुर, 492010 (छ.ग.)

क्रमांक 713/साहि.एवं भाषा/2022 रायपुर दिनांकः 07.03.2022

प्रति

उपकुलसचिव (अकादमी)
पं. रविशंकर शुक्ल विश्वविद्यालय,
रायपुर, छ.ग.

विषयः– आपके द्वारा चाही गई जानकारी की हार्ड कापी भेजी जा रही है।

महोदय,

आपके द्वारा साहित्य एवं भाषा–अध्ययनशाला में संचालित च्वाइस बेस पाठ्क्रम की कापी भेजी जा रही है। जो निम्नलिखित हैः–

1 CBCS Linguistics
2 CBCS Hindi
3 CBCS English
4 CBCS Chhattisgarhi

Sheil Sharma
अध्यक्ष 07/3/2022
साहित्य एवं भाषा अध्ययन शाला
पं. रविशंकर शुक्ल विश्वविद्यालय,
रायपुर (छत्तीसगढ़)

अध्ययनशाला का नाम – साहित्य एवं भाषा–अध्ययनशाला

पाठ्यक्रम – च्वॉयस बेस्ड पाठ्यक्रम भाषाविज्ञान द्वितीय सेमेस्टर

प्रश्नपत्र का नाम – भाषाविज्ञान की रूपरेखा

कुल क्रेडिट – 03 **कुल अंक – 100(80+20)**

1. भाषा : परिभाषा और प्रकृति एवं विशेषताएँ, भाषा के अवयव– ध्वनि, रूप, शब्द, पदबंध, उपवाक्य, वाक्य, अर्थ। मानवभाषा एवं मानवेतर भाषा, मौखिक एवं लिखित भाषा, भाषा और बोली, बोली के भाषा बनने के कारण, भाषाई परिवर्तन के कारण एवं दिशाएँ।
   Language : Definition, Nature Characteristics & Features Constituents of Language- Sound, Morph, Word, Phrae, Clause Sentence,Meaning. Human Language and Non-human Language, Oral and Written Language,Language and Dialect, Factors causing a dialect to be a Language, Factors Causing language Change and Directions of Change.
2. भाषाविज्ञान की परिभाषा, प्रकृति, भाषा अध्ययन की विभिन्न पद्धतियाँ– वर्णनात्मक, तुलनात्मक, ऐतिहासिक, व्यतिरेकी, भाषाविज्ञान की शाखाएँ। ध्वनिविज्ञान प्रकृति एवं व्याप्ति, वाक् अवयव, स्वन, स्वनों का वर्गीकरण, संध्यक्षर, व्यंजनों का वर्गीकरण।
   Linguistics Definition, nature, Verious Method of Linguistics, Study-Descriptive, Historical, Contrastive, Branches of Linguistics. Phonetics-Nature and Scope, Speech Organs, Phone, Classification of Speech sounds Diphthong classification of Consonants.
3. रूपविज्ञान–प्रकृति एवं क्षेत्र, शाखाएँ, शब्द साधन और रूपसाधन।
   Morphology- Nature and Scope,Branches, Derivational and Inflectional.

निर्धारित पुस्तकें–

Books Prescribed

1. ध्वनि विज्ञान – गोलोक बिहारी धल
2. हिंदी भाषा की ध्वनि संरचना – भोलानाथ तिवारी
3. हिंदी का रूपग्रामिक अध्ययन – महावीर सरन जैन।
4. The Phoneme its Naturand use, Daniel Jones, Cambridge University Press, Cambridge, Londar-Newyork-Melbourne I-Edition, 1976.

अध्ययनशाला का नाम – साहित्य एवं भाषा–अध्ययनशाला

पाठ्यक्रम – च्वॉयस बेस्ड पाठयक्रम भाषाविज्ञान तृतीय सेमेस्टर

प्रश्नपत्र का नाम – संप्रेषणपरक–हिंदी

कुल क्रेडिट – 03 कुल अंक – 100(80+20)

1. संप्रेषण– परिभाषा, प्रक्रिया, विस्तार। संप्रेषण–क्षमता के विकास में भाषाविज्ञान की भूमिका। हिंदी में वार्तालाप–वक्ता, श्रोता, विषय–वस्तु, भाषा, स्थिति–संदर्भ, भूमिका–परिवर्तन, शिष्टाचार एवं तकियाकलाम।

   Communication- Definition, Process, Scope, Role of Linguistics in improving, Communicative competence. Conversation in Hindi- Speaker, Hearer, Subject- matter, Language, Context of Situation, Role-Shift, Manner and Mannerism.

2. भाषा के विविध रूप–मूल भाषा, व्यक्ति बोली, स्थानीय बोली, बोली, उपभाषा, परिनिष्ठित भाषा, राजभाषा, राष्ट्रभाषा, संपर्कभाषा, सामान्यभाषा और साहित्यिक भाषा।

   Different Forms of Language, Original Laguage, Individual, dialect, Native dialect, Dialect, Sub-dialect, Standard Language, State Language, National Language, Communicative Language, General Language and Literary Language.

3. शब्द और अर्थ का स्वरूप, अर्थ परिवर्तन, कारण और दिशाएँ। पर्यायवाची शब्दों का विशिष्ट प्रयोग, मुहावरों एवं लोकोक्तियों का प्रयोग।

   Nature of Word and Meaning Conversion of Meaning, Causes of Semantic Change and Directions. Synonymous Words with Use of Specific Meaning, Use of Idioms and Prouerbs.

निर्धारित पुस्तकें–

Books Prescribed

1. हिंदी भाषा की शब्द–संरचना – भोलानाथ तिवारी
2. अर्थविज्ञान – बाबूराम सक्सेना
3. हिन्दी मुहावरा कोश – भोलानाथ तिवारी
4. Hindi Semantics - Hardeo Bahri (Bharati Press Publications : Darbhanga Road Allahabad.

साहित्य एवं भाषा अध्ययनशाला

च्वॉइस बेस्ड क्रेडिट पाठ्यक्रम

विषय– हिंदी (द्वितीय सेमेस्टर)

प्रथम प्रश्न पत्र– हिंदी भाषा और उसके विविध रूप

कुल क्रेडिट–03 **कुल अंक–100(80+20)**

यूनिट–1

1. हिंदी भाषा का उद्‌भव विकास और स्वरूप
2. मानक हिंदी भाषा : स्वरूप और लक्षण, हिंदी की बोलियाँ
3. देवनागरी लिपि : अर्थ, परिभाषा और विशेषताएँ

यूनिट–2

1. हिंदी भाषा संबंधी अशुद्धियाँ
2. पर्यायवाची, विलोम, अनेकार्थी शब्द, समश्रुत, अनेक शब्दों के लिए एक शब्द
3. तत्सम, तद्‌भव, देशज, विदेशी, उपसर्ग, प्रत्यय, मुहावरे, लोकोक्तियाँ (अर्थ एवं प्रयोग)
4. पल्लवन, संक्षेपण, सारलेखन

यूनिट–3

1. संज्ञा, सर्वनाम, विशेषण, क्रिया–विशेषण, अव्यय
2. संधि, संधि–विच्छेद
3. सामासिक पद रचना एवं समास विग्रह
4. शैली की परिभाषा एवं प्रकार– विवरणात्मक शैली, मूल्यांकन शैली, व्याख्यात्मक शैली, विचारात्मक शैली
5. अनुवाद : अर्थ, परिभाषा, प्रकार, विशेषताएँ

संदर्भित पुस्तकें–

1. हिन्दी साहित्य का इतिहास– आचार्य रामचन्द्र शुक्ल
2. हिंदी व्याकरण – कामता प्रसाद गुरू
3. आधुनिक हिंदी व्याकरण और रचना – डॉ0 वासुदेव नंदन प्रसाद

साहित्य एवं भाषा अध्ययनशाला

च्वॉइस बेस्ड क्रेडिट पाठ्यक्रम

विषय– हिंदी (तृतीय सेमेस्टर)

द्वितीय प्रश्न पत्र– हिंदी साहित्य का इतिहास एवं छत्तीसगढ़ के हिंदी साहित्यकार

कुल क्रेडिट –03 **कुल अंक–100 (80+20)**

यूनिट–1

हिंदी साहित्य का इतिहास–

1. काल विभाजन, नामकरण
2. विद्यापति, अमीर खुसरो का सामान्य परिचय

यूनिट–2

1. कबीर, जायसी, सूरदास, तुलसीदास का सामान्य परिचय
2. केशव, बिहारी, घनानंद का सामान्य परिचय
3. भारतेन्दु युग से द्विवेदी युग तक का साहित्य, छायावाद के आधार स्तम्भ का सामान्य परिचय

यूनिट–3

छत्तीसगढ़ के प्रमुख हिंदी साहित्यकारों का सामान्य परिचय

1. पदुमलाल पुन्नालाल बख्शी
2. मुकुटधर पाण्डेय
3. माधव राव सप्रे
4. गजानन माधव मुक्तिबोध
5. हबीब तनवीर
6. विनोद कुमार शुक्ल
7. श्रीकांत वर्मा
8. लतीफ़ घोंघी
9. परदेशी राम वर्मा

संदर्भित पुस्तकें–

1. हिन्दी साहित्य का इतिहास– आचार्य रामचन्द्र शुक्ल
2. हिन्दी साहित्य का इतिहास (सं.)– डॉ. नगेन्द्र एवं डॉ. हरदयाल
3. हिन्दी साहित्य का उद्‌भव एवं विकास – आचार्य हजारी प्रसाद द्विवेदी
4. हिन्दी साहित्य एवं संवेदना का विकास – रामस्वरूप चतुर्वेदी

CHOICE-BAED SYLLABUS

SUBJECT- ENGLISH

School of Studies Literature & Language

II Sem-Paper -1

Functional English Language

Total Max-100(80+20)

Credit-3

I – Grammar

1. Parts of Speech.
2. Types of Sentences. (Compound, Simple, (Structure) Complex)
3. Types of Sentences.
4. Tenses. (Application)
5. Active and Passive Voice.
6. Direct and Indirect Speech .

II- Comprehension

1. Formal and Informal Letter Writing.
2. Message Writing.
3. Paragraph Writing.

III Communicative English

1. Sentence Making. (Simple, Compound, Complex)
2. Salutations, Meeting and Parting Communication.
3. Self Introduction Introducing others.
4. Asking Questions and Answering them.

Vocabulary :- Synonyms, Antonyms.

Books Recommended

1. **A Remedial English Grammar- F.T. Wood**
2. **An Intermediate Grammar and Composition- M.L. Tikkoo and Subramanyam.**
3. **Living English Structure- S. Allen**
4. **English Pronouncing Dictionary – D. Jones**

CHOICE-BAED SYLLABUS

SUBJECT- ENGLISH

School of Studies Literature & Language

III Sem

Paper -2

Communication Skills

Credit-3 **Total Max-100(80+20)**

I – Grammar

7. Clauses
8. Analysis of Sentences
9. Ideoms & Proverbs.
10. Figures of Speech

II Comprehension

4. Article Writing
5. Application
6. Report Writing
7. Dialogue Writing

Vocabulary : 1 Phrases 2 One word for many words.

III Communicative English

5. Public Speaking
6. Role Play
7. Group Discussion

Books Recommended

1. **A Remedial English Grammar- F.T. Wood**
2. **An Intermediate Grammar and Composition- M.L. Tikkoo and Subramanyam.**
3. **Living English Structure- S. Allen**
4. **English Pronouncing Dictionary – D. Jones**

CHOICE-BASED SYLLABUS

SUBJECT- CHHATTISGARHI

साहित्य एवं भाषा–अध्ययनशाला

विषय– छत्तीसगढ़ी

द्वितीय सेमेस्टर

प्रथम प्रश्न पत्र– छत्तीसगढ़ी भाषा और व्याकरण

कुल क्रेडिट–03 कुल अंक–100

(80+20)

यूनिट–1

1. छत्तीसगढ़ी भाषा के मानक रूप
2. छत्तीसगढ़ी भाषा के उद्‌भव विकास और स्वरूप
3. मानक का अर्थ, मानक भाषा : स्वरूप, मानक भाषा के लक्षण, छत्तीसगढ़ी की बोलियाँ
4. देवनागरी लिपि अर्थ, परिभाषा, विशेषताएँ

यूनिट–2

1. छत्तीसगढ़ी भाषा के ध्वनि संरचना
2. छत्तीसगढ़ी में शब्दभेद
3. छत्तीसगढ़ी के व्याकरणिक कोटियाँ

यूनिट–3

1. छत्तीसगढ़ी मुहावरे एवं लोकोक्तियाँ
2. उपसर्ग, प्रत्यय, समास, ध्वन्यात्मकता
3. पर्यायवाची, विलोम, अनेकार्थी शब्द, अनेक शब्दों के लिए एक शब्द, पल्लवन, संक्षेपण, सारलेखन

संदर्भित ग्रंथ–

1. छत्तीसगढ़ी भाषा का उद्‌विकास – नरेन्द्र देव वर्मा
2. छत्तीसगढ़ी जनभाषा – डॉ. व्यास नारायण दुबे
3. सुघढ़ छत्तीसगढ़ी भाषा– डॉ. कौस्तुभ मणि द्विवेदी

CHOICE-BASED SYLLABUS

SUBJECT- CHHATTISGARHI

साहित्य एवं भाषा –अध्ययनशाला

विषय– छत्तीसगढ़ी

तृतीय सेमेस्टर

द्वितीय प्रश्न पत्र– छत्तीसगढ़ी भाषा और साहित्य

कुल क्रेडिट–03 कुल अंक–100

(80+20)

यूनिट– 1

1. छत्तीसगढ़ी साहित्य का इतिहास
2. कालविभाजन
3. नामकरण
4. आदिकाल के प्रमुख रचनाकार एवं रचनाएँ

यूनिट–2

1. छत्तीसगढ़ी साहित्य और साहित्यकार का सामान्य परिचय
2. मध्यकाल की परिस्थितियाँ एवं प्रवृत्तियाँ
3. आधुनिक काल की परिस्थितियाँ एवं प्रवृत्तियाँ

यूनिट–3

1. छत्तीसगढ़ी के प्रमुख साहित्यकार एवं उनकी रचनाएँ

संदर्भित ग्रंथ–

4. छत्तीसगढ़ी भाषा का उद्विकास – नरेन्द्र देव वर्मा
5. छत्तीसगढ़ी लोक साहित्य का अध्ययन – डॉ. सत्यभामा आडिल

अध्ययनशाला का नाम : Institute of Management
पाठ्यक्रम: च्वॉयस बेस्ट पाठ्यक्रम: द्वितीय सेमेस्टर

प्रश्नपत्र का नाम : **MANAGEMENT CONCEPTS AND PROCESS**

कुल क्रेडिट : 3 कुल अंक: 100
पाठयक्रम विवरण:

- Concepts, principles of management ,historical evolutions of management thoughts Management Process. Planning, steps involved in planning process.
- Individual and Group Decision Making, Organizing- principles, centralization, decentralizations, delegation, Different types of organization structures.
- Directing and Coordinating, Controlling, steps and control techniques.

Suggested Readings:

1. Stoner and Freeman, Management, Prentice Hall, N. Delhi.
2. Koontz. O' Donnell Wechrich, Principles of Management, McGraw Hill, New York.
3. Terry and Franklin,Principles of Management, AITBS, New Delhi.
4. Agrwal. R.D.Organisation and Management- TMH. New Delhi

अध्ययनशाला का नाम : Institute of Management
पाठ्यक्रम: च्वॉयस बेस्ट पाठ्यक्रम: तृतीय सेमेस्टर

प्रश्नपत्र का नाम : **MANAGERIAL COMMUNICATION**

कुल क्रेडिट : 3 कुल अंक: 100
पाठयक्रम विवरण:

- Business Communication, Channels and Media of Communication, Effectiveness of Communication : Process of Communication
- Barriers to Communication; Writing Business Reports, Oral Communication, Resume preparations, public speaking
- Listening Skills, Presentation Skills, Feedback Skills, Interview skills, Group Discussion.

Suggested Readings :

1. Murphy, Herta A and Peck, Charrles E. Effective Business Communications, Tata Mc Graw Hill. New Delhi.
2. Pearce, C Glenn etc. Business Communications : Principles and Applications, John Wiley, New York.
3. Treece, Maira. Sucessful Business Communications, Allyn and Bacon Boston.
4. Bahal, Sushil. Business Communication, Sage Publication
5. Rao, N. and Das R. P., Communication Skills, Himalaya Publishing House

Elementary Mathematics for Finance and Economics

Unit I

1. Mathematical Models in Economics-
   Introduction, A model of the market, Market equilibrium, Excise Tax.
2. The elements of Finance-
   Interest and capital growth, Income generation, The interval of compounding.
3. The Cobweb Model-
   Stability of market equilibrium, The general linear case, Economic interpretation
4. Mathematical terms and notations-
   Sets, functions, Graphs, Equations, Supply and demand sets for a market.

Unit II

1. Introduction to Calculus-
   Rate of change of a function, rules for finding the derivative, Marginal cost as a derivative, derivative of composite and inverse functions.
2. Introduction to Optimization-
   Profit maximization, critical points, optimization in an interval, infinite interval.
3. The derivative in Economics-
   Nonlinear economic models, Elasticity of demand, profit maximization, competition versus monopoly, The efficient small firm, startup and breakeven points.

Unit III

1. Matrix Algebra-
   Matrix, multiplication of matrix, inverse of matrix, Determinant, Cramer's rule.
2. Linear equations-
   Linear equations in matrix form, solutions of linear equations by row operations, Echelon form, consistent and inconsistent systems, Rank, A two-industry 'economy', Arbitrage portfolios and state prices, Income determination model.
3. Input-Output model-
   An economy with many industries, Technology matrix, Existence of solution.

Unit IV

1. Linear Programming-

Graphical approach- production, diet problem
Simplex algorithm, Dual problem.

2. General Equilibrium and Game Theory-
   Utility maximization and demand function, Profit maximization and supply function, abstract economy and a competitive equilibrium

Unit V

1. First order differential equations-
   Continuous time models, types of differential equations, separable differential equations, continuous time model of price adjustment.
2. Second order differential equations-
   Market trends and consumer demand, Linear equations with constant coefficients, Solution of homogeneous equations, behavior of solutions.

Book Name:
Mathematics for Economics and Finance- by M. Anthony and N.Biggs
Cambridge University Press

Elementary Mathematics for Social Sciences

Unit-I: Algebra and Equations

The Real Numbers, Polynomials, Factoring ,Rational Expressions, Exponents and Radicals, First-Degree Equations, Quadratic Equations.

Unit-II: Graphs, Lines, and Inequalities

Graphs, Equations of Lines, Linear Models, Linear Inequalities, Polynomial and Rational Inequalities,

Unit-III: Functions and Graphs

Functions, Graphs of Functions, Applications of Linear Functions, Quadratic Functions and Applications, Polynomial Functions, Rational Functions

Unit-IV: Exponential and Logarithmic Functions

Exponential Functions, Applications of Exponential Functions, Logarithmic Functions, Logarithmic and Exponential Equations

Unit-V: Systems of Linear Equations and Matrices

Systems of Two Linear Equations in Two Variables, Larger Systems of Linear Equations, Applications of Systems of Linear Equations, Basic Matrix Operations, Matrix Products and Inverses, Applications of Matrices

Recommended Book:

M.L.Lial,. T.W.Hungerford, J.P.Holcomb, B.Mullins: *Mathematics with Applications in the Management, Natural and Social Sciences*, 7th ed. Pearson.

अध्ययन शाला का नाम – वि. वि. फार्मेसी संस्थान, पं. र. शु. वि. वि. रायपुर (छ.ग.)
पाठ्यक्रम – च्वॉयस बेस्ड पाठ्यक्रम द्वितीय सेमेस्टर
प्रश्नपत्र का नाम – द्वितीय सेमेस्टर
कुल क्रेडिट – 03, कुल अंक – 100
पाठ्यक्रम विवरण –

Optional Subject : **Intellectual Property Rights**

1. **Intellectual Property Rights** : Concept of Property vis-à-vis Intellectual Property; An Overview on concept of Property and Theories of Property; Theories of Intellectual Property Rights ; Intellectual Property as an Instrument of Development; Need for Protecting Intellectual Property-Policy Consideration- National Perspectives and International demands; An Overview on types of Intellectual Property- Origin and Development; Intellectual Property Rights as Human Right.

2. Indian Patent Act, 1970 : Amendments to the Patents Act; Patentable Subject Matter, Patentability Criteria; Procedure for Filling Patent Applications, Patent Granting Procedure; Revocation, patent Infringement and Remedies; Relevant Provisions of the Biological Diversity Act, 2002; Access and Benefit Sharing Issues.

3. Copyright, Neighbouring Rights and Industrial Designs:

a. Introduction to Copyright with respect to its Conceptual Basis and An Overview of International Protection of Copyright and Related rights
(International Convention/Treaties on Copyright).

b. Indian Copyright Act, 1957 with its amendments; Copyright works; Ownership, transfer and duration of Copyright; Renewal and Termination of Copyright; Neighbouring Rights; Infringement of copyright and remedies.

c. Industrial Designs and its need for Protection; Subject Matter of Protection and Requirements; The Designs Act, 2000; Procedure for obtaining Design Protection; Revocation, Infringement and Remedies.

4. Trademarks: Need for Protection of Trademarks; kinds of Trademarks; International Legal Instruments on Trademarks; Indian Trademarks Law; The Trade and Merchandise Marks Act, 1958; Trademarks Act, 1999; Procedural Requirements of Protection of Trademarks; Content of Rights, Exhaustion of Rights; Assignment under Licensing; Infringement, Right of Goodwill, Passing Off; Domain Names and Effects of New Technology (Internet).

5. General Agreement on Tarff and Trade (GATT): Impact on Pharmaceuticalindustry. History of GATT, its impact on pharmaceutical industry. Pharmaceuticalmarket in India.

6. world Intellectual property Organization (WIPO): Function of WIPO; Membership of WIPO; Agreement between the WIPO and the WTO; Dispute Settlement- New Treaties.

7. Trade related intellectual property rights (TRIPS): TRIPS Agreement - basic principles and minimum standards – limits of one-size-fit for all – flexibilities under TRIPS.

8. Geographical Indications: Concept of Appellations of Origin, Indication of Source and Geographical Indication; International Conventions/Agreements; The Geographical Indications of Goods (Registration and protection) Act, 2000; Procedure for Registration, Duration of Protection and Renewal; Infringement, penalties and Remedies

अध्ययन शाला का नाम – वि. वि. फार्मेसी संस्थान, पं. र. शु. वि. वि. रायपुर (छ.ग.)

Name of SoS- University Institute of Pharmacy
Course Name- Choice Based III Semester
Paper Name- Drug Standardization of Natural Origin
Total Credit 03 Total Marks 100
Syllabus

- Introduction to natural /herbal drug Industries their scope and applications. Study of infra structure for different types of industries involved in making standardized extracts and various dosage forms including traditional Ayurvedic and modern dosage forms. WHO guidelines on herbal drug standardization.

- Methods of drug and extract standardization: Standardization of natural/herbal raw materials including Pharmacognostical, physical, chemical and biological methods with examples.

- Principles of qualitative and quantitative estimation of active principles from standardized, extracts by HPLC, HPTLC and MS-MS.
- Biological standardization -Pharmacological screening of herbal extracts and Microbiological evaluation of herbal extracts.
- Toxicity studies of herbal drug/extracts.

- Drug Regulatory Aspects– Indian drug regulatory authorities, Central and State regulatory bodies. General regulatory requirements under USFDA
- Drugs and Cosmetics Act and Rules with latest Amendments. Special emphasis – Schedule M and Y and various licenses.
- Role of marker compounds for analysis of drugs finger printing, phyto-equivalence studies in herbal drug standardization
- Importance of monographs of medicinal plants, their comparative study as per-Indian Pharmacopoeia, Indian Herbal Pharmacopoeia, API, Ayurvedic formulary of India, Chinese Pharmacopoeia, United States Pharmacopoeia, British Herbal Pharmacopoeia, European Pharmacopoeia, American Herbal Pharmacopoeia.
- Indian and international patents laws and procedures. Latest Indian patent guidelines for herbal drugs. Patent processing and application, copyright and trademarks

- Regulating authorities in India. Biological diversity act 2002, rules 2004, geographical indications, bio-prospecting and bio-piracy.

- Study of traditional formulations as per Ayurvedic formulary of India.

- Shelf life study- protocols to study stabilization of herbal based products. Assessment of physical, physico-chemical and chemical parameters at different stages.
- Novel drug delivery systems for plant actives and extracts and their applications. Nanotechnology in natural product research-Introduction to nanotechnology, applications, types of nano formulations. Preparation and characterization of nano formulations for plant secondary metabolites.

पाठ्यक्रम – च्वॉयस बेस्ड पाठ्यक्रम द्वितीय सेमेस्टर
प्रश्नपत्र का नाम – द्वितीय सेमेस्टर
कुल क्रेडिट – 03, कुल अंक – 100
पाठ्यक्रम विवरण –

Optional Subject : **Cosmetic Technology**

Fundamental of cosmetic science, Introduction to cosmetics, classification of cosmetics, Structure and function of skin and hair.

Formulation considerations, preparation, packaging and evaluation of Face Preparation, Skin Preparation, Shaving preparation, Shampoo and Bath preparations, Hair Preparations, Dentifrice, Manicure Preparation, Herbal Cosmetics.

Safety evaluation of finished cosmetic product: Stability, physical and chemical characteristics, microbial quality. Toxicity studies on cosmetic products; corrosiveness, skin irritation, repeated dose toxicity, carcinogenicity, Photo-induced toxicity.

Cosmetic vehicles: Functions, classification, Preparation methods, characterization. Encapsulation techniques for topical delivery: Vector identification, design and properties of vector, dermatological application, porous microsphere techniques. Liposomal and aquasome as potential delivery techniques. Cosmetic patches and difference with pharmaceutical patches.

Intellectual Property Right Act, it significance and importance with reference to cosmetics. Compliance of Drug & Cosmetic Act 1940 with reference to provisions for packaging and labeling (Rule 150 A, schedule S), permitted colours, flavours etc. Microorganisms in manufacturing environment, current GMP, concept of HACCP, Microbiological evaluation, skin testing, hair testing.

School of Studies in Physical Education
Pt. Ravishankar Shukla University, Raipur (C.G.)

Syllabus for Choice Based Credit System

Name of the Subject: Physical Education, Health and Fitness

Unit	Contents	Lecture	Tutorial	Practical	Credits
I.	1. Structure and Function of Skeleton system, joints and effect of exercises on skeleton system. 2. Structure and Function of Circulatory system and effects of exercises on circulatory system. 3. Structure and Function of Muscular system and effects of exercises on circulatory system. 4. Structure and Function of Endocrine system and effects of exercises on circulatory system.	5	2		6
II.	5. Concept of Physical Fitness, Motor fitness and motor educability 6. Components of physical Fitness 7. Health related fitness 8. Different Training Methods 9. Training Load, Super compensation and Principles of Training Load	5	2		6
III.	10. Balanced Diet 11. Hydration Status: Needs and Functions of Water, Regulation of Water Balance, Fluid Balance, Dehydration and Performance, Hydration Guidelines for Pre, During and after Exercise. 12. Obesity and its Control 13. Aerobic and Anaerobic Activities	5	2		6
IV.	14. Personality Development 15. Motivation 16. Mental health development 17. Emotional Control 18. Psychomotor development 19. Emotional Control 20. Social skills development in sports (Team Building, Group Dynamics, Group cohesion)	5	2		6

V.	21. Meaning, Concept and Art of Yoga. 22. Parts of Yoga: Yama Niyama, Asana, Pranayama, Pratyhara, Dharana, Dhyan and Samadhi. 23. Surya Namaskar: Meaning, Contents, Benefits and Steps. 24. Meditation: Origin, Meaning, Types, Benefits, Research based findings. 25. Concept of Nadis (System of Channels) and Chakras (Energy Centers), Expansion of Consciousness. 26. Essence of Raj Yoga: Chitta, Vratties, States of Mind, Causes of repeated Births Development of Eight Spiritual Powers to enhance quality of life, re-orientation or redirection of sixteen basic instincts. 27. Mudras and Bandhas.	3	2	4	6

School of Studies in Physical Education
Pt. Ravishankar Shukla University, Raipur (C.G.)

Syllabus for Choice Based Credit System
M. P. Ed. Major Elective
Semester - I

Name of the Subject: Yoga Education

Unit	Contents	Lecture	Tutorial	Practical	Credits
I.	1. Meaning, Concept and Art of Yoga. 2. Parts of Yoga: Yama Niyama, Asana, Pranayama, Pratyhara, Dharana, Dhyan and Samadhi.	1			3
II.	3. Shuddhi Kriyas: Dhauti, Neti, Kapalbhati, Tratak, Nauli and Basti. 4. Surya Namaskar: Meaning, Contents, Benefits and Steps.	3	2	4	
III.	5. Asanas (Five from each category) I. Meditative II. Cultural a) From Standing Position b) From Long Sitting Position c) From Prone Lying Position d) From Supine Lying Position e) From Full Squat Position III. Relaxative 6. Pranayama I. Anuloma Viloma II. Ujjai III. Bhastrika IV. Surya Bhedan V. Shitali VI. Sitkari VII. Bharmari VIII. Murcha IX. Plavani	2	2	6	
IV.	7. Meditation: Origin, Meaning, Types, Benefits, Research based findings. 8. Concept of Nadis (System of Channels) and Chakras (Energy Centers), Expansion of Consciousness.	4	2	2	6

V.	9. Essence of Raj Yoga: Chitta, Vrattles, States of Mind, Causes of repeated Births Development of Eight Spiritual Powers to enhance quality of life, re-orientation or redirection of sixteen basic instincts. 10. Mudras and Bandhas.	3	2	4	6

SCHEME OF EXAMINATION
&
SYLLABUS
of

CHOICE BASED CREDIT SYSTEM (CBCS)
UNDER
FACULTY OF SCIENCE

Approved by Board of Studies in Physics
EFFECTIVE FROM SESSION 2019-2020

School of Studies in Physics & Astrophysics
Pt. Ravishankar Shukla University
Raipur (C.G.) 492010
PH: - 0771-2262864
WEBSITE: -www.prsu.ac.in

Approved by Board of Studies in Physics on 18, January 2019
PT. RAVISHANKAR SHUKLA UNIVERSITY, RAIPUR

Choice Based Credit System (CBCS)

Under the CBCS scheme all the courses offered at P.G. level are under semester system. Semester system is applicable to regular students of affiliated colleges and Autonomous colleges of this University and different SoS of Pt. Ravishankar Shukla University, Raipur. Course structure along with distribution of marks is given below:

Name of the Paper	Marks					Credits
	Theory		Internal		Total	
	Max	Min	Max	Min		
Semester-I Paper-I: Basic Concepts of Physics and Astrophysics	80	16	20	04	100	03
Semester-II Paper-II: Basic Concepts of Optics	80	16	20	04	100	03

Note: Any one of the paper chosen by the students for CBCS will have 03 credits.

अध्ययनशाला का नाम – भौतिकी एवं खगोल भौतिकी अध्ययनशाला

पाठय्क्रम – च्वायस बेस्ड पाठ्यक्रम द्वितीय सेमेस्टर

प्रश्नपत्र का नाम – **Paper-I: Basic Concepts of Physics and Astrophysics**

कुल केडिटः 03 कुल अंकः 100

Choice Based Credit Course
Semester –I
Paper I- Basic Concepts of Physics and Astrophysics
Total Credit- 03, Total Marks: 100 [80+20]

Mechanical Properties of Matter: Newton laws of motion; Kepler's laws of planetary motion; Friction; Conservative & non-conservative forces; Work and Energy: kinetic and potential energy; Law of conservation of Energy, power; Elasticity; Surface tension, Viscosity, Equation of continuity, Bernoulli's theorem and its application.

Thermal Properties of Matter: Heat and temperature; Thermal expansion; Specific heat capacity; Latent heat; Calorimetry; Transfer of heat; Thermal conductivity; Thermal radiation; Black body radiation; Kirchhoff's law; Stefan's law; Newton's law of cooling; Perfect gas; Boyle's law, Charles's law, Kinetic theory of gases.

Electricity and Magnetism: Coulomb's law; Electrostatic force; Electric field; Electric Potential; Work done on a charge in an electrostatic field; Lines of force & Electric Flux; Gauss law; Dielectrics; Electric Susceptibility; Permittivity and Dielectric constant; Biot-Savart Law; Lorentz force; Ampere law; Time varying fields; Magnetization; Electromagnetic induction; Faraday law; Maxwell Equations.

Digital Electronics: Number systems; decimal, binary, octal, hexadecimal and their conversion; Logic gates: AND, OR, NOT, NAND, NOR, EX-OR gates and their logic symbols/ equivalent simplified switching circuits/ truth tables; Boolean algebra; De- Morgan theorems; Half and Full Adder circuits.

Astronomy & Astrophysics: Time and Coordinate system; Celestial Sphere; Solar Time; Sidereal Time; Julian Date; Right Ascension and Declination; Azimuth and Elevation; Optical telescopes; Apparent Magnitude; Absolute magnitude; Colour Index; UBVRI photometric systems; Luminosity; Stellar Distances; Spectral classification; The H-R diagram of stars; Physical Characteristics of Sun; Morphological classification of galaxies; Milky way galaxy.

REFERENCE BOOKS:

1. Fundamental of Physics, Halliday, Resnick & Walker, Wiley publication.
2. University Physics, Shears & Zimanski.
3. Basic electronics, V.K.Mehta.
4. Classical Electrodynamics, J. D. Jackson, J. Wiley & Sons.
5. Astrophysics for Physicists, Arnab Rai Choudhuri, Cambridge University Press.
6. Modern Astrophysics, B.W. Carroll and D.A. Ostlie, Addison-Wiley Publishing Co.
7. Introductory Astronomy and Astrophysics, M. Zeilik and S.A. Gregory, Saunders College Publishing.
8. The Physical Universe: An introduction to astronomy, F. Shu, Mill Valley University Sciences books.

अध्ययनशाला का नाम – भौतिकी एवं खगोल भौतिकी अध्ययनशाला

पाठय्क्रम – च्वायस बेस्ड पाठ्यक्रम तृतीय सेमेस्टर

प्रश्नपत्र का नाम – **Paper-II: Basic Concepts of Optics**

कुल केडिटः 03 कुल अंकः 100

Choice Based Credit Course
Semester –II
Paper II- Basic Concepts of Optics
Total Credit- 03, Total Marks: 100 [80+20]

Light and Optics: Nature of light; Optical Path; Reflection, Refraction, Refractive index, Dispersion and dispersive power; Achromatic prisms: Deviation without dispersion; Dispersion with no deviation in prismatic combination; Introduction to Optical instrument; Eyepieces: Ramsden and Huygens eyepiece; Huygens principle of wave front propagation; Reflection and Refraction of light from wave theory.

Interference: Interference of light; Young's experiment; Analytical treatment of Interference (wave theory); Condition for interference; Interference and conservation of energy; Fringe-width and shape of fringes in double slit; White light fringes: Colour effect; Newton's rings: Applications of Newton's rings, Michelson's interferometer, Applications of Michelson's interferometer.

Diffraction: Diffraction, Distinction between Interference and diffraction; Classes of diffraction; Fresnel's half-period zones: Plane wave-front; Diffraction at a straight edge; Diffraction at a single slit; Diffraction at a double slit; Resolving power of grating; Resolving power of a prism(spectrograph); Resolving power of telescope; Resolving power of microscope.

Polarisation: Polarisation of light; Experiment to show transverse nature of light waves; Polarisation by reflection: Brewster's law; Double refraction; Ordinary and extra-ordinary rays; Uniaxial and Biaxial Crystal and their refractive indices.

Luminescence: Source of light; Incandescence, Luminescence, Fluorescence, Phosphorescence; Broad classification of luminescence.

Laser & Fibre Optics: Ordinary and Laser light; Einstein theory: Interaction of radiation with matter; Einstein's coefficients; Conditions for Laser Production: Population inversion, Pumping, Resonance Cavity; Laser system: Solid, Liquid, Gas; Applications of Laser; Introduction to Fibre Optics: Basic principle, Structure, Classification and Applications in modern communication systems.

REFERENCE BOOKS:

1. Physics part-I by R. Resnick and D. Halliday, Wiley Eastern Ltd, New Delhi.
2. Physics part-II by R. Resnick and D. Halliday, Wiley Eastern Ltd, New Delhi.
3. Laser Physics and Applications by L Tarasov, NIR Publisher Moscow.
4. Principle of Optics Eigth Edition by B. K. Mathur and T.P. Pandya, Gopal Printing Press Kanpur.
5. Optical Electronics by Ajoy Ghatak and K. Thyagarajan, Cambridge University Press.
6. A Text Book of Optics Eigth Edition N. Subramanyam and Brij Lal, S Chand Company Pvt. Ltd New Delhi.
7. Laser Systems and Applications by N. Choudhary and R. Verma, PHI Learning Pvt. Ltd New Delhi.
8. Fundamentals of Optics by Devraj Singh, PHI Learning Pvt. Ltd New Delhi.
9. Fiber Optic Communication Second Edition by D. C. Agrawal, Wheeler Publishing.

SCHEME OF EXAMINATION

&

SYLLABUS OF

Choice Based Credit System

(PHYSICS)

UNDER

FACULTY OF SCIENCE

Approved by Board of Studies in Physics

EFFECTIVE FROM JULY 2020

School of Studies in Physics & Astrophysics
Pt. Ravishankar Shukla University
Raipur (C.G.) 492010
PH: - 0771-2262864
WEBSITE: -www.prsu.ac.in

Approved by Board of Studies in Physics on 07, January 2020
PT. RAVISHANKAR SHUKLA UNIVERSITY, RAIPUR

Choice Based Credit System (CBCS)

Under the CBCS scheme all the courses offered at P.G. level are under semester system. Semester system is applicable to regular students of affiliated colleges and Autonomous colleges of this University and different SoS of Pt. Ravishankar Shukla University, Raipur. Course structure along with distribution of marks is given below:

Name of the Paper	Marks					Credits
	Theory		Internal		Total	
	Max	Min	Max	Min		
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Semester-II Paper-II: Basic Concepts of Optics	80	16	20	04	100	03

Note: Any one of the paper chosen by the students for CBCS will have 03 credits.

अध्ययनशाला का नाम	–	भौतिकी एवं खगोल भौतिकी अध्ययनशाला
पाठ्यक्रम	–	च्वायस बेस्ड पाठ्यक्रम द्वितीय सेमेस्टर
प्रश्नपत्र का नाम	–	**Paper-I: Basic Concepts of Physics and Astrophysics**
कुल केडिट: 03		कुल अंक: 100

Choice Based Credit Course
Semester –I
Paper I- Basic Concepts of Physics and Astrophysics
Total Credit- 03, Total Marks: 100 [80+20]

Mechanical Properties of Matter: Newton laws of motion; Kepler's laws of planetary motion; Friction; Conservative & non-conservative forces; Work and Energy: kinetic and potential energy; Law of conservation of Energy, power; Elasticity; Surface tension, Viscosity, Equation of continuity, Bernoulli's theorem and its application.

Thermal Properties of Matter: Heat and temperature; Thermal expansion; Specific heat capacity; Latent heat; Calorimetry; Transfer of heat; Thermal conductivity; Thermal radiation; Black body radiation; Kirchhoff's law; Stefan's law; Newton's law of cooling; Perfect gas; Boyle's law, Charles's law, Kinetic theory of gases.

Electricity and Magnetism: Coulomb's law; Electrostatic force; Electric field; Electric Potential; Work done on a charge in an electrostatic field; Lines of force & Electric Flux; Gauss law; Dielectrics; Electric Susceptibility; Permittivity and Dielectric constant; Biot-Savart Law; Lorentz force; Ampere law; Time varying fields; Magnetization; Electromagnetic induction; Faraday law; Maxwell Equations.

Digital Electronics: Number systems; decimal, binary, octal, hexadecimal and their conversion; Logic gates: AND, OR, NOT, NAND, NOR, EX-OR gates and their logic symbols/ equivalent simplified switching circuits/ truth tables; Boolean algebra; De- Morgan theorems; Half and Full Adder circuits.

Astronomy & Astrophysics: Time and Coordinate system; Celestial Sphere; Solar Time; Sidereal Time; Julian Date; Right Ascension and Declination; Azimuth and Elevation; Optical telescopes; Apparent Magnitude; Absolute magnitude; Colour Index; UBVRI photometric systems; Luminosity; Stellar Distances; Spectral classification; The H-R diagram of stars; Physical Characteristics of Sun; Morphological classification of galaxies; Milky way galaxy.

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2. University Physics, Shears & Zimanski.
3. Basic electronics, V.K.Mehta.
4. Classical Electrodynamics, J. D. Jackson, J. Wiley & Sons.
5. Astrophysics for Physicists, Arnab Rai Choudhuri, Cambridge University Press.
6. Modern Astrophysics, B.W. Carroll and D.A. Ostlie, Addison-Wiley Publishing Co.
7. Introductory Astronomy and Astrophysics, M. Zeilik and S.A. Gregory, Saunders College Publishing.
8. The Physical Universe: An introduction to astronomy, F. Shu, Mill Valley University Sciences books.

Vaneet 07/01/2020

7/1/2020

5.1.2020

अध्ययनशाला का नाम	–	भौतिकी एवं खगोल भौतिकी अध्ययनशाला
पाठ्यक्रम	–	च्वायस बेस्ड पाठ्यक्रम तृतीय सेमेस्टर
प्रश्नपत्र का नाम	–	**Paper-II: Basic Concepts of Optics**
कुल क्रेडिट: 03		कुल अंक: 100

Choice Based Credit Course
Semester –II
Paper II- Basic Concepts of Optics
Total Credit- 03, Total Marks: 100 [80+20]

Light and Optics: Nature of light; Optical Path; Reflection, Refraction, Refractive index, Dispersion and dispersive power; Achromatic prisms: Deviation without dispersion; Dispersion with no deviation in prismatic combination; Introduction to Optical instrument; Eyepieces: Ramsden and Huygens eyepiece; Huygens principle of wave front propagation; Reflection and Refraction of light from wave theory.

Interference: Interference of light; Young's experiment; Analytical treatment of Interference (wave theory); Condition for interference; Interference and conservation of energy; Fringe-width and shape of fringes in double slit; White light fringes: Colour effect; Newton's rings: Applications of Newton's rings, Michelson's interferometer, Applications of Michelson's interferometer.

Diffraction: Diffraction, Distinction between Interference and diffraction; Classes of diffraction; Fresnel's half-period zones: Plane wave-front; Diffraction at a straight edge; Diffraction at a single slit; Diffraction at a double slit; Resolving power of grating; Resolving power of a prism(spectrograph); Resolving power of telescope; Resolving power of microscope.

Polarisation: Polarisation of light; Experiment to show transverse nature of light waves; Polarisation by reflection: Brewster's law; Double refraction; Ordinary and extra-ordinary rays; Uniaxial and Biaxial Crystal and their refractive indices.

Luminescence: Source of light; Incandescence, Luminescence, Fluorescence, Phosphorescence; Broad classification of luminescence.

Laser & Fibre Optics: Ordinary and Laser light; Einstein theory: Interaction of radiation with matter; Einstein's coefficients; Conditions for Laser Production: Population inversion, Pumping, Resonance Cavity; Laser system: Solid, Liquid, Gas; Applications of Laser; Introduction to Fibre Optics: Basic principle, Structure, Classification and Applications in modern communication systems.

REFERENCE BOOKS:

1. Physics part-I by R. Resnick and D. Halliday, Wiley Eastern Ltd, New Delhi.
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9. Fiber Optic Communication Second Edition by D. C. Agrawal, Wheeler Publishing.

07/01/2020 5.12.20 9/11/2020

SCHOOL OF STUDIES IN PSYCHOLOGY

Pt.Ravishankar Shukla University, Raipur

CHOICE BASED SYLLABUS – 3rd SEMESTER

Credit : 03 **Marks : 100**

Programme for Choice Based Course - II

Mental Health: Prevention and Promotion

Unit - 1 : Behavioral deficits, excessive.

Unit - 2 : Health, stress and coping, gender sensitization.

Unit - 3 : The art and science of helping,

(a) Meanings, purpose and goal, goals of counseling, and Counselors relationship

(b) Professional issues, ethics, educational training of the counselor.

Text Book Reference :

1. Carson & Bucher - Abnormal Psychology and modern life.
2. Gorey, G. (1986) - Theory and practice of counseling and psychotherapy.

Paper	Course Coordinator	Marks	Credit
Psychology of Everyday Lives	Dr. Promila Singh	100	3
Mental Health: Prevention and Promotion	Dr. Prabhavati Shukla	100	3



Professor
School of Studies in Psychology,
Pt. Ravishankar Shukla University
RAIPUR (C.G.)

School of Regional Studies and Research
Pt. Ravishankar Shukla University, Raipur (C.G.)

Choice Based Credit System for students of other department

Session: 2020-21

Course Code: CBCS101 **Title: Applied Research Methodology**

Credit: 03

Learning Objectives:

At the end of the course the students are expected to:

1. explain the meaning, importance and purpose of research
2. describe the nature of research andidentify the areas of rural development in which research is being increasinglyundertaken
3.describe the steps in the sampling process and the various methods of sampling and define a probability sample and describe the various types of probability sample
4. The course will helpful to provide field training write a research report

Unit-I

Social Research: Concept, Objectives, Types, Importance, Scope, Selection of Research problem, Hypothesis. Social Survey Method, Role of Social Scientist in Rural development, (participate observation, field work, cultural relativism) and holistic study.

Unit-II

Tools and Techniques of data Collection-Observation, Interview, Questionnaire and Schedule, and Content Analysis, PRA & RRA, Sample and Sampling techniques. Measures of Central Tendency.

Unit-III

Qualitative and Quantitative research, Research Design and its types, Preparation of a research design. Sampling method and its types, Writing a research proposal, Research report writing: Structure, Clarity and consistency; Chapter-scheme, Preparation of bibliography and reference. Methods of presentation, Appendices, Review of literature, Computer application in research.

Recommended Readings:

1. Crabtres & Miller (ed.). **Doing Qualitative Research,** Sage Publications, New Delhi, 2000.
2. Denzin & Lincoln (eds.). **Handbook of Qualitative Research,** Sage Publications, New Delhi, 2000.
3. Herekar, P.M. **Research Methodology and Project Work,** Phadke Prakashan, Kolhapur, 2004.
4. Kumar, P.S.G. **Research Methods and Statistical Techniques**. Delhi: B.R. Publishing Co., 2004.
5. Marshall & Rosaman, **Designing Qualitative Research,** Sage Publications, New Delhi, 1999.



School of Regional Studies and Research
Pt. Ravishankar Shukla University, Raipur (C.G.)

Choice Based Credit System for students of other department

Course Code:CBCS 102
Title: Corporate Social Responsibility

Credit: 03

Indian entrepreneurs and business enterprises have a long tradition of working within the values that have defined our nation's character for millennia. India's ancient wisdom, which is still relevant today, inspires people to work for the larger objective of the well-being of all stakeholders. These sound and all-encompassing values are even more relevant in current times, as organizations grapple with them challenges of modern-day enterprise, the aspirations of stakeholders.

Learning Objectives:

At the end of the course the students are expected to:

1. understand the meaning and definition of corporate social responsibility
2. know the implementation and impact of CSR practices on development
3. understand the act, policies and laws of corporate social responsibility

Unit-I

Corporate Social Responsibility: Meaning and Definition, Concept, Historical Evolution of CSR, Developmental Phases of CSR, Benefits and Criticisms, CSR and Strategic Branding in Rural India, CSR Practices in India,Impact of CSR Practices on Sustainable development, Generation of Employment.

Unit-II

Corporate and Rural Development, Public Private Partnerships, Stakeholder Engagement, Social Marketing, Environmental responsibility, National voluntary Guidelines on Social, Environmental and Economic Responsibilities of Business,Impact of CSR Practices on Promotion of Education, Gender Equality and women empowerment, Improvement of Health services.

Unit-III

SEBI Guidelines for Corporate Social Responsibility Reporting, Provisions for CSR in Companies Act 2013: Definition, CSR Activities, CSR Committees, CSR Policy, CSR Expenditure, CSR Reporting, Display of CSR activities on its website.

Recommended Readings:

1. Jeremy, M. **Corporate Social Responsibility: A Very Short Introduction**, 2014
2. Waddock, S. **Making a difference. Corporate responsibility as a social movement. Journal of Corporate Citizenship**, 33, 35-46, 2009.
3. Agarwal, S. **Corporate Social Responsibility in India**, 2008
4. Mishra and Puri, **Growth and Development, Himalaya publishing house**, 2004.
5. Nancy Lee and Philip Kotler -**Corporate Social Responsibility: Doing the Most Good for Your Company and Your Cause**, 2004



CHOICE BASED CREDIT SYSTEM

For Academic Year 2020-2021

Paper – I: Basic concept of sociology

1.Objectives:-

Sociology is to explain the students how sociology –a science to study society is linked to day-to -day life.

To understand society and solve out various social issues.

To inculcate social science students for better understanding of society.

2. Course Structure:-3 Credits involving theory.

3.Caveat: Enrolment of minimum 10 students is required to run the course for a particular semester with maximum intake of 15 students.

4.Brief outline of the course material

Unit I Sociology- Meaning, Definition ,Nature and Scope of Sociology

Unit II Primary Concept – Society, Community, Association, Institution

Unit III Social Group, Social Stratification,

Unit IV Socialization, Family, Marriage , Kinship

Paper –II: Indian Village

1.Objectives:-

The study of Indian Village to explain the students how due to industrialization the existence of village has changed.

To understand village culture and solve out various social issues.

To inculcate social science students for better understanding of rural society

2. Course Structure:-3 Credits involving theory.

3.Caveat: Enrolment of minimum 10 students is required to run the course for a particular semester with maximum intake of 15 students.

4.Brief outline of the course material

UNIT-I: Concept of Village:- Meaning, Characteristics, Concept of rural culture

UNIT-II: Village Social Structure : Caste, Family, Marriage , Kinship

UNIT- III: Village Economy:- land Ownership, agriculture, Occupation, Jajmani System

UNIT- IV : Village Leadership:- Meaning and Characteristics of leadership, , Panchayati Raj System

SCHOOL OF STUDIES IN STATISTICS, PT. R.S.U., Raipur

Syllabus
M.A./M.Sc.- Choice Based Credit System, 2021-22
Subject: Statistics

Scheme of Examination

Semester	Paper	Subject	Total Marks	Total Credits
Semester II	I	Basic Statistics-I	100	03
Semester III	I	Basic Statistics-II	**100**	**03**

M.A./M.Sc. II Semester: Choice Based Credit System
Subject: Statistics
Paper- I
BASIC STATISTICS-I

Unit-I

Methods of Data Collection, types of data, construction of questionnaire, Processing and analysis of data. Presentation of data. Measure of central tendency and dispersion. Karl Pearson's coefficient of correlation, Rank correlation. Lines of Regression.

Unit-II

Mathematical and statistical definitions of probability. Idea of Probability distribution. Normal distribution. Test of Hypothesis, level of significance, p –value, Applications of chi square, t and F distribution. Chi square test for goodness of fit.

Unit-III

Sampling techniques: Simple random sampling, Stratified random sampling, Cluster Sampling, Systematic sampling, non sampling error.

Unit-IV

One way and two way analysis of variance, Use of Statistical Software packages for data analysis – SPSS and Excel.

References:

1. Goon A.M., Gupta M.K., Dass Gupta B. (1991): Fundamentals of statistics, Vol.I & II, World Press, Calcutta.
2. Gupta V. K. and Kapoor S. C.(2005): Fundamentals of Mathematical Statistics S. Chand and Sons.
3. Mood A. M. Graybill F.A. and Boes D.C. (1974): Introduction to the Theory of Statistics, MegrawHill.
4. Bhatt B. R., Srivenkatramana T and Rao Madhava K.S. (1977): Statistics : A Beginner's text, Vol.II, New Age International (P) Ltd.
5. C.R.Kothari,"Research Methodology", Second Edition, Wishwa Publication, New Delhi.
6. Shukla S. M. & Sahay S. P. (): Business Statistics, Sahitya Bhawan Publications, Agra.

M.A./M.Sc. III Semester: Choice Based Credit System
Subject: Statistics
Paper- I
BASIC STATISTICS-II

UNIT-I

Sources of demographic data –census, register, adhoc survey, hospital records, measurement of mortality, crude death rate, age specific death rates, standardized death rate infant mortality rates, Complete life table and its applications. Laws of mortality and Makeham's law.

UNIT-II

Measurement of fertility-crude birth rate, general fertility rate ,age-specific birth rate, total fertility rate, gross reproduction rate. The Stable and Stationary populations, Logistic curve for population growth, Population Projection.

Unit III

Different Component of time series, Measurement of secular trend: Fitting of trend, method of moving average, effect of elimination of trend, Yule-Slustky effect, merits and demerits of different methods of trend estimation. seasonal components and its estimation.

Unit IV

Index number :meaning and construction of index number, different formulae for constructing index numbers, Laysperes and Paasche's index number, tests of a good index number, Fisher's Ideal index number. Chain base index numbers, Cost of living index numbers, Whole sale price index numbers. Demand Analysis: Demand and supply curves, Price elasticity of demand and supply, Engel' Law.

References:

1. O. S. Srivastava (1983) – A text book of demography ,Vikas Publishing House.
2. Parimal Mukhopadhaya (1999) – Applied Statistics, Books and Allied (P) Ltd.
3. V. K. Kapoor and S. C. Gupta: Applied Statistics, Sultan Chand and Sons.

Centre for Women's Studies,
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CHOICE BASED CREDIT SYSTEM (CBCS)

Syllabus

Course Title: Community-Based Participatory Research (CBPR)

Semester – II

Unit	Topics	Learning Objectives	Assignment	Field visit description[1]	Time
1	-History of CBPR - Overview of steps involved in CBPR - Field visit with focus on community interaction	-Explain history, principles & steps of CBPR - Discuss the concept of partnership in research & appreciate local/indigenous knowledge	In discussion with the elderly of the community, elicit their knowledge on any given topic and critically evaluate it.	2 field visits in total: 1. Rapport building with the community 2. Conducting the discussion	4 hours of theoretical learning & 9 hours of field practice
2	-Developing research partnership with the community - Understanding Gender Framework in development - Introduction to methods for conducting participatory research	-Understand diversity in CBPR	-Use Daily Routine Analysis tool to assess workload of a specific group of people in the community (farmers, SHG members, mothers, etc.) - Use Resource mapping tool to understand the nature of access to resources for people in the community.	**Daily Routine Analysis Task** (3 field visits in total) 1. Identifying the sample size and category of persons you want to engage with and to take their consent and time. 2.Using the tool for data collection 3.Presenting analysis of data back to the community **Resource Mapping Task** (3 field visits in total): 1. Identifying different stakeholder groups (men, women, children, elderly, etc.	4 hours of theoretical learning & 18 hours of field practice

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				2. Conducting resource mapping with the different stakeholder groups[2] (men, women, children, elderly, etc.) 3. Discussing in the mixed group of stakeholders and finalising the resource mapping	
3	-Introduction to research methods (*arts-based method, survey, etc.*) using case studies - Designing a research proposal	-Know how to use the different methods of data collection with the community - Define how to design a research proposal	Design a collaborative research study using the experience from previous field visits and collect the data for the study using PR methods	3 field visits in total: 1. Prioritising the problems emerging from the earlier Daily Routine Analysis & Resource Mapping tasks and to jointly decide the research question 2. & 3. Identifying the co-researcher & collecting data	4 hours of theoretical learning & 9 hours of field practice
4	-Methods for participatory analysis of data and debriefing - Methods for Knowledge sharing	-Learn how to analyse the data with the community - Know different ways of sharing research findings with the community	Design knowledge sharing strategy with the community and implement it	2 field visits in total: 1. Undertaking data analysis with the community 2. Sharing the knowledge with the community	3 hours of theoretical learning & 6 hours of field practice

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CHOICE BASED CREDIT SYSTEM (CBCS)

Course Title: Gender Sensitization

Semester -III

SYLLABUS

Unit – I - Sex, Gender and Sexuality

1.1 Concept, Meaning of sex & gender biological social construction.

1.2 Cultural construction of masculinity and femininity.

1.3 Sexual preference as a right.

Unit – II - Gender Discrimination

2.1 Concept, Meaning Gender discrimination

2.2 Role of family community and state in gender discrimination and change in attitude.

Unit -III – Violence Against Women

3.1 Domestic violence

3.2 Sexual harassment at workplace

3.3 Rape

Unit – IV – Gender Sensitization

4.1 Concept, meaning in understanding intersections of Gender, Caste, Class, Region, Religion, and Disability.

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