



**SYLLABUS**  
**Choice Based Programme for Second**  
**Semester Student**  
**2016-2017**



**PT. RAVISHANKAR SHUKLA UNIVERSITY**  
**RAIPUR**  
**CHHATTISGARH**



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

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

## द्वितीय सेमेस्टर के लिए उपलब्ध चॉयस बेस्ड पाठ्यक्रम

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.	Library Information Service-I	10 to 20	All Student	16 to 17	Dr. Maya Verma
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	Basic Statistics - I	5 to 25	All Student	16 to 17	Dr Prabha Rohatgi-9406009403
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.	Computer Networking & Introduction to HTML	10 to 20	Science	16 to 17	Dr V K Patle -9993908607



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

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18	Bio Sc.	Economic Zoology	10 to 30	All Student	16 to 17	Prof A K Gupta - 9826236706 & Prof A Poddar - 9826643763
		Plant Cosmetics	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
25	Chhattisgarhi	छत्तीसगढ़ी भाषा और व्याकरण	10 to 20	All Student	9 to 10	
26	Hindi	हिंदी भाषा और उसके विविध रूप	10 to 20	All Student	9 to 10	
27	Englissh	General English&-I	10 to 20	All Student	9 to 10	

**अध्ययनशाला का नाम – साहित्य एवं भाषा—अध्ययनशाला**  
**पाठ्यक्रम – च्वाँयस 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.

अध्ययन शाला का नाम	—	ग्रंथालय एवं सूचना विज्ञान.
पाठ्यक्रम	—	चॉइस बेस्ड पाठ्यक्रम
सेमेस्टर	—	प्रथम द्वितीय
प्रश्नपत्र का नाम	—	Library Information Service -I
कुल क्रेडिट — 3		कुल अंक—100

पाठ्यक्रम का विवरण.....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, NESCAR, DESIDOC,
- National & International Funding Agencies : ICSSR, CSIR, DRDO, UGC, World Bank, DAE, INSA

#### Recommend Books:

1. प्रलेखन एवं सूचना सेवाएं तथा नेटवर्क : खण्ड1 प्रलेखन 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

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



# 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 क्रेडिट -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, Sarvadharm Sambhav of Mahatma  
Gandhi, Integral humanism of Pt. Deen Dayal Upadhyaya  
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 क्रेडिट का है।

  
14.12.15  
अध्यक्ष  
स्वामी विवेकानन्द स्मृति  
तुलनात्मक धर्म, दर्शन एवं योग अध्ययन शाला  
पं. रविशंकर शुक्ल विश्वविद्यालय, रायपुर

**समाजशास्त्र अध्ययनशाला**  
**पं. रविशंकर शुक्ल विश्वविद्यालय, रायपुर (छ.ग.)**

क्रमांक 543 / समाज. / च्चौयस बेस्ड / 2015

रायपुर, दिनांक 01.12.2015

अध्ययनशाला का नाम – समाजशास्त्र अध्ययनशाला  
पाठ्यक्रम का नाम – च्चौयस बेस्ड पाठ्यक्रम द्वितीय सेमेस्टर  
प्रश्नपत्र का नाम – **Basic Concept of Sociology**  
कुल क्रेडिट – 03 कुल अंक – 100  
पाठ्यक्रम विवरण :-

**Basic Concept of Sociology**

- 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.

*DRS*  
*14/12*

**Department- School of Studies in Economics**  
**Syllabus - Choice Based Syllabus Second Semester**  
**Name of Subject- Economics**  
**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) 31<sup>ST</sup> 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.



# **SCHOOL OF STUDIES IN PSYCHOLOGY**

*Pt. Ravishankar Shukla University, Raipur*

## **CHOICE BASED SYLLABUS – 2<sup>nd</sup> SEMESTER**

**Credit : 03**

**Marks : 100**

### **Psychology of Everyday Lives**

- Unit - 1:** Psychological development – adolescence period, physiological and psychological changes, personal, adjust and career selection.
- Unit - 2:** Adulthood period – physiological and psychological changes, personal and career adjustment.
- Unit - 3:** Personality development – characteristics of mature personality.

#### **References :**

1. Baron, R. A. - Introduction to Psychology.
2. Hurlock, E. B. – Developmental psychology.

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 क्रेडिट – 03 कुल अंक – 80–20

पाठ्यक्रम विवरण–

### PAPER - I

#### Elements of Ancient Indian History & Archaeology

##### Credit: - 1

Meaning & scope of History & Archaeology  
Survey of pre historic to Indus Valley civilization  
Characteristics & features of Paleolithic, Mesolithic & Neolithic cultures  
General survey of Harappa culture  
Development from 6<sup>th</sup> Cen. B.C. to 12<sup>th</sup> Cen. A.D  
Mahajanpad period  
Rise of Mauryan dynasty  
Gupta dynasty  
Political condition of Southern & Northern India (6<sup>th</sup> – 12<sup>th</sup> Century A.D.)

##### Credit: - 2

Elements of Epigraphy & Numismatics  
Importance of Epigraphy & Numismatics  
Various types of 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

सिद्धि 30/12/15  
अध्यक्ष

प्राचीन भारतीय इतिहास  
संस्कृति एवं पुरातत्व अध्ययनशाला  
पं.र.शु.वि.वि., रायपुर (C.G.)

**इतिहास अध्ययन शाला**  
**पाठ्यक्रम— च्वाइस बेस्ड क्रेडिट सिस्टम**  
**(सत्र 2015–16) द्वितीय सेमेस्टर**  
**प्रश्न पत्र का नाम— भारतीय स्वाधीनता आंदोलन की प्रमुख धाराएँ**  
**कुल क्रेडिट— 3, कुल अंक— 100**

**क्रेडिट 1**

- 01 1857 की क्रांति ,कारण, स्वरूप एवं परिणाम
- 02 राष्ट्रवाद का उद्भव
- 03 भारतीय राष्ट्रीय कांग्रेस की स्थापना
- 04 उदावादी युग

**क्रेडिट 2**

- 5 उग्रवाद एवं बंगाल में स्वदेशी आंदोलन
- 6 भारत में क्रांतिकारी आंदोलन प्रथम चरण
- 7 विदेशों 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. डॉ. आभा सक्सेना – इंडियन नेशनल मूवमेंट्स लिबरलस
- 3. ए. आर. देसाई – भारतीय राष्ट्रवाद की सामाजिक पृष्ठभूमि
- 4. कौलेश्वर राय – क्रीडम स्ट्रगल
- 5. विपिन चंद्र – भारतीय स्वतंत्रता संग्राम का इतिहास
- 6. यशपाल एवं ग्रोवर – आधुनिक भारत का इतिहास

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

**Choice Based Credit Program for students of Other Department**

**Session: 2015-16**

**Course Code: CBCP 101**

**Title: Regional Demography and Development - *Second Semester***

Maximum Marks: 100 (80+20)

**Credit: 03**

**Regional Composition of Population:**

Age Composition- Sex Composition- Ethnic Composition- Educational Composition- Religious Composition- Economic Composition etc.

**Regional Birth Rate and Death Rate:**

Conception- early childhood- toilet teaching- late childhood (all sub- topics with reference to urban and rural and tribal and non-tribal).

**Regional Migration:**

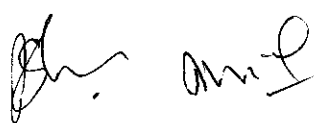
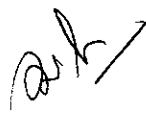
Immigration and Emigration - push and pull factors-economic, religious, social etc.

**Regional Development:**

Concept- Natural and Human Resource – Sustainable development and Inclusive growth. Programme for and Evaluation on urban, rural and tribal development

**Books Recommended**

1. Baudisch, Annette (2008), Inevitable Ageing: Contributions to Evolutionary-Demographic Theory, Demographic Research Monograph, Max Planck, Institute for Demographic Research
2. Becker (1960), An Economic Analysis in Fertility in Demographic and Economic Change in Developed Countries, NBER Committee for Economic Research, Princeton University Press, Princeton
3. Benfro, Kofi and Schultz, T. Paul (1996), Fertility and Child Mortality in Cote d'Ivoire and Ghana, World Bank Economic Review, Vol.10, No.1, PP.123-158 Chanana and



P.P.Talwar (1987) Aging in India: its socio-economic and health implications, Asia-Pacific Population Journal, Vol.2, no.3 pp.23-35

4.Coale, Ansley.J. (1986), Demographic Effect of Below Replacement Level Fertility and their Social Implications,

5.Population and Development Review, Supplement to Below Replacement Level Fertility in Industrial Societies: Causes, Consequences and Policies, Vol.12, pp.203-216

6.Malthus (1798), An Essay on the Principles of Population, Macmillian &co Ltd, London.

7.Mc Donald (2001), Theories Pertaining to Low Fertility, Demography Programme, International Union for Scientific Study of Population, International Perspectives on Low Fertility: Trends, Theories and Policies, Tokyo.\

8.Murthi, Mamta Guio, Anne-Catherine and Jean Dreze (1995) Mortality, Fertility, and Gender Bias in India: A District-Level Analysis Population and Development Review, Vol. 21, No. 4, pp. 745-782



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

**Choice Based Credit Program for students of other department**

**Course Code: CBCP 102**

**Title: Applied Research Methodology  
(For Semester II & ~~Semester III~~)**

Maximum Marks: 100 (80+20)

**Credit: 03**

The course will be helpful to provide field training

Basic techniques of data collection: observation, interview, questionnaire, schedule and genealogical table method.

Anthropological Techniques and Rural development- Chief Characteristic of anthropology (participate observation, field work, cultural relativism) and holistic study.


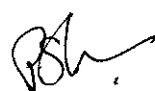
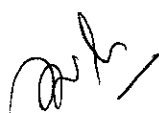
Qualitative and Quantitative research

Research Design and its type. Preparation of a research design.

Sampling method and its types. Report Writing.

**Books Recommended**

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



# **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, eclipse. 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
3. Lal, D. S. : Physical Geography, Sharda Pustak Bhawan, Allahabad.
4. दयाल परमेश्वर : भौतिक भूगोल
5. लाल डी. एस. भौतिक भूगोल, शारदा पुस्तक भवन इलाहाबाद
6. सिंह सवीन्द्र भौतिक भूगोल, प्रयाग प्रकाशन इलाहाबाद



अध्ययनशाला का नाम	—	भौतिकी एवं खगोल भौतिकी अध्ययनशाला
पाठ्यक्रम	—	च्चायस बेस्ड पाठ्यक्रम द्वितीय सेमेस्टर
प्रश्नपत्र का नाम	—	Paper-I: Basic Concepts of Physics and Astrophysics
कुल क्रेडिट: 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.

#### **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.

# **ANALYTICAL TECHNIQUES AND DATA ANALYSIS**

## **Syllabus**

### **Elective Course**

#### **Choice Based Credit System in Master Course in Chemistry**

## *II Semester*

### **UNIT –I**

#### **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 acid 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 Linear least square, Significant figures, Statistical aid to hypothesis testing-t-test, F-test, Correlation coefficient, Rejection of data.

### **UNIT –II**

#### **SEPARATION TECHNIQUES**

- A. Efficiency of extraction, Selectivity of extraction, Extraction system, Method of Extraction, applications.
- B. Principles, classification of chromatographic techniques, Technique and applications of paper chromatographic, Thin-layer chromatographic, HPTLC, Column chromatography.

### **UNIT –III**

#### **THERMAL AND AUTOMATED METHODS**

- A. Principles, Instrumentation, Application of TGA, DTA and DSC methods.
- B. Automated methods, Principle, instrumentation and application of flow injection analysis.

### **UNIT –IV**

#### **ELECTROCHEMISTRY**

- A. Principles and instrumentation of pH potentiometry, coulometry and conductometry.
- B. Basic principles, Diffusion current, polarized electrode, Micro electrode, Dropping mercury Electrode Ilkovic equation, Polarographic wave, Qualitative analysis 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.

# INSTRUMENTAL METHODS OF ANALYSIS

Syllabus

Elective Course

Choice Based Credit System in Master Course in Chemistry

*II Semester*

## UNIT –I

### 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 variable comparison with other types of chromatography, applications.
- D. Capillary Electrophoresis and capillary electro chromatography : overviews and applications

## UNIT –II

### 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.

## UNIT –III

### ATOMIC EMISSION SPECTROSCOPY

- A. Selectivity, sensitivity and interferences of atomic spectroscopy.
- B. Theory, instrumentation and application of flame photometer, AES, ICP-AES and AFS.

## UNIT –IV

### 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.
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अध्ययन शाला का नाम	—	सांख्यिकी अध्ययन शाला
पाठ्यक्रम	—	चॉयस बेस्ड पाठ्यक्रम द्वितीय समेस्टर
प्रश्नपत्र का नाम	—	BASIC STATISTICS-I
कुल क्रेडिट	—	कुल अंक — 100
पाठ्यक्रम विवरण	—	विवरण संलग्न

Pt. RAVISHANKAR SHUKLA UNIVERSITY: RAIPUR  
SCHOOL OF STUDIES IN STATISTICS  
Choice Based Credit System

#### SECOND SEMESTER

S. No.	Paper	Subject	Credit points	Total Marks
1	I	Basic Statistics-I	03	100
		Total	03	100

Choice Based Credit System  
Syllabus for IInd Semester

#### **Paper I** **BASIC STATISTICS-I**

Methods of Data Collection: Collection of Primary data, construction of questionnaire, Collection of data through questionnaire, Difference between questionnaires and schedules, Method of data collections. Collection of Secondary data, Processing and analysis of data.

Classification and Tabulation of Data, Tally marking, Discrete and continuous type of data, graphical presentation of data, Bar Diagram, Histogram, Pie Char, Line Chart, Pictogram.

Descriptive Statistics: Measure of central tendency, dispersion, skewness and kurtosis to study of nature of data.

Simple correlation Coefficient- Meaning of correlation, Scatter Diagram Karl pearsons coefficient of correlation , Limits for correlation Coefficient Assumptions Underlying Karl Pearson's correlation Coefficient. Multiple and Partial Correlation.

Regression Analysis two variables; Expression for Regression Coefficient. Application of Regression line. Why to lines of regression ?

#### **Reference:**

1. Goon A.M., Gupta M.K., Dass Gupta B. (1991): Fundamentals of statistics, Vol.I, World Press, Calcutta.
2. Gupta & Kapoor: Fundamentals of Mathematical Statistics S. Chand and Sons.
3. Hodges, J.L. and Lehman, E.L. (1964): Basic Concepts of Probability and statistics, Holden day.
4. Mood A. M. Graybill F.A. and Boes D.C. (1974): Introduction to the Theory of Statistics, MegrawHill.
5. Bhatt B. R., Srivenkatramana T and Rao Madhava K.S. (1977): Statistics : A Beginner's text, Vol.II, New Age International (P) Ltd.

Name of the Department - **SOS in Electronics and Photonics, PRSU, Raipur**  
Course - **Choice Based Course EL-1, Second Semester**  
Name of Question Paper - **EL1 Basics of Electronics**  
Total Credit - **03** ; Total Marks - **100**

Course Details-

## **EL1 Basics of Electronics**

**Basic electronics-** Introduction, Applications, Concepts of charge, potential, voltage, current, power and their units, Active and passive components, Resistor and its color codes, Capacitors and its units, Transformer.

**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.

**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**

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

Electronic Devices and Circuit Theory, 9th ed. Boylestad & Nashelsky , PHI  
Digital Principal and Application - Malvino Leach, Tata Macgraw Hill

Modern Digital Electronics - R.P. Jain, Tata Mcgraw

### **References**

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

Electronic Devices & Circuit Analysis – K Lal Kishore, BS Publications

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11/2/2015

अध्ययनशाला का नाम : भूविज्ञान एवं जल प्रबंधन अध्ययनशाला

पाठ्यक्रम : चौंस बेसड पाठ्यक्रम द्वितीय सेमेस्टर

प्रश्न पत्र का नाम : Fundamentals of Geology GMnE - I

कुल क्रेडिट : तीन (०३)

कुल अंक : १०० ( ८० सैधांतिक + २० आंतरिक मूल्याकन)

पाठ्यक्रम विवरण:

### GMnE - I FUNDAMENTALS OF GEOLOGY

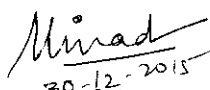
- I**
- 1.1 Geology and its perspective. Earth in the Solar System
  - 1.2 Age of the earth.
  - 1.3 Interior of the earth and its manifestation.
  - 1.4 Brief introduction of hydrosphere and atmosphere. Hydrologic Cycle.
- II**
- 2.1 Earthquakes and Volcanoes.
  - 2.2 Continental Drift
  - 2.3 Fundamentals of Plate Tectonics and Plate boundaries
  - 2.4 Distribution of Oceans and Continents. Tectonic divisions of India
- 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
- IV**
- 4.1 Geomorphic agents, Weathering.
  - 4.2 Salient geomorphic features.
  - 4.3 Types mountains and plains
  - 4.4 Fossils and their applications
- 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

  
30-12-2015  
HEAD  
School of Studies in Geology  
Dr. Ravishanker Shukla University  
B-10, H-430-010 (C. U.)

<b>Name of SoS</b>	<b>School of Studies in Mathematics</b>
<b>Syllabus</b>	<b>Choice Based Syllabus II Semester</b>
<b>Name of the paper</b>	<b>Elementary Mathematics for Finance and Economics</b>
<b>Total Credit: 3</b>	<b>Total Marks: 100</b>
<p>Mathematical Models in Economics: Introduction, A model of the market, Market equilibrium, Excise Tax. The elements of Finance: Interest and capital growth, Income generation, The interval of compounding. The Cobweb Model: Stability of market equilibrium, The general linear case, Economic interpretation. Mathematical terms and notations: Sets, functions, Graphs, Equations, Supply and demand sets for a market.</p>	
<p>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. Introduction to Optimization: Profit maximization, critical points, optimization in an interval, infinite interval. The derivative in Economics: Nonlinear economic models, Elasticity of demand, profit maximization, competition versus monopoly, The efficient small firm, startup and breakeven points.</p>	
<p>Matrix Algebra: Matrix, multiplication of matrix, inverse of matrix, Determinant, Cramer's rule. 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. Input-Output model: An economy with many industries, Technology matrix, Existence of solution.</p>	
<p>Linear Programming: Graphical approach- production, diet problem Simplex algorithm, Dual problem. General Equilibrium and Game Theory: Utility maximization and demand function, Profit maximization and supply function, abstract economy and a competitive equilibrium.</p>	
<p>First order differential equations: Continuous time models, types of differential equations, separable differential equations, continuous time model of price adjustment. Second order differential equations: Market trends and consumer demand, linear equations with constant coefficients, Solution of homogeneous equations, behavior of solutions.</p>	
<p><b>Recommended Book:</b> M. Anthony, N. Biggs : Mathematics for Economics and Finance, Cambridge University Press.</p>	



**Department Name** : S.o.S in Computer science and IT  
**Course** : MCA Choice Based Course II 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

*Senar*  
15-12-2015

## **SCHOOL OF STUDIES LIFE SCIENCES**

अध्ययनशाला का नाम : जैविकी अध्ययनशाला (School of Life Sciences)

पाठ्यक्रम: चॉयस बेस्ड पाठ्यक्रम....द्वितीय सेमेस्टर....(Second Semester)

प्रश्न पत्र का नाम: प्लान्ट कोसमेटिक्स (Plant Cosmetics)

कुल क्रेडिट...तीन....

कुल अंक.....100.....

पाठ्यक्रम विवरण

### **Plant Cosmetics [Elective paper]**

[Credit: 3]

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 bioregulators 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 Salisbury & CW Ross	Plant Physiology
Hans-Walter Heldt	Plant biochemistry & Molecular Biology

## **SCHOOL OF STUDIES LIFE SCIENCES**

अध्ययन शाला का नाम : जैविकी अध्ययनशाला (School of Life Sciences)

पाठ्यक्रम: चॉयस बेस्ड पाठ्यक्रम...द्वितीय सेमेस्टर...(Second Semester)

प्रश्नपत्र का नाम: ईकॉनॉमिक जुलॉजी (Economic Zoology)

कुल क्रेडिट...तीन.... कुल अंक.....100.....

पाठ्यक्रम विवरण

### **Economic Zoology (Credits: 03)**

#### **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.

#### **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).

#### **Insect Pest Management**

Insecticides, fumigants, insect attractants and repellents, antifeedants or feeding deterrents, biological, hormonal and pheromonal control.

#### **Books Recommended**

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

**S.O.S. In Anthropology**  
**Choice Based Syllabus 2<sup>nd</sup> Semester**  
**Basics in Anthropology**

Credit: 03

MAX. Marks- 100

1. Anthropology: Definition, Branches  
Primate: Definition, Evolutionary Trends  
Blood Groups: Types, Distribution, Inheritance.
2. Archaeology: Definition, Branches, Objectives  
Outline of Indian Archaeological Cultures  
Exploration & Excavation Techniques
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 Offset, 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.

Mr. M. S.  
Chakravarty  
S. K. S.  
M. S.

**Name of School of Studies: SoS in Biotechnology****Course: Choice Based Course,****Second : Semester****Name of Paper: Paper-I (Basic Biotechnology)****Total Credit: 03 (Three)****Total Mark: 100**

1. General account and Chemical nature of living cell, discovery of cell.
2. Function of cell organelles-Nucleus, Mitochondria, Golgi-complex, Endoplasmic reticulum etc.
3. Structure and function of Prokaryotic and Eukaryotic cell, Comparison between plant and animal cell.
4. Macromolecules in Biological systems-Nucleic Acid: Structure of purine and pyrimidine bases, nucleoside and nucleotide; DNA- structure; RNA - Structure, types and functions.
5. Carbohydrates: Structure, classification, properties and function; derivatives of monosaccharides, homo polysaccharides and hetero-polysaccharides.
6. Lipids: Classification, structure and function.
7. Proteins- Primary, secondary, tertiary and quaternary structure of proteins. And their importance.
8. Plant Tissue Culture: Techniques and applications: tissue culture as a technique to produce novel plants and applications.
9. General concept and application of Genetic Engineering: Scope of Genetic Engineering, Milestones in Genetic Engineering and cloning.
10. Introduction and scope of Microbiology: General account of Microorganisms. Salient features and classification of Virus, Bacteria, Fungi and Bacteriophage.
11. Environmental pollution Air, Water and Soil pollution

**Note:** There will be 5 questions of equal marks.

### List of Practical's:-

1. To prepare the temporary stained slide of onion bulb peel to study the structure of plant cell.
2. To prepare the temporary stained slide of cheek squamous epithelial cells of mouth of Human Beings.
3. Microscopic examination of bacteria, and study of organisms by Gram stain.
4. Qualitative test for Carbohydrate.
5. Qualitative test for amino acid and protein.
6. Determination of biochemical oxygen demand (BOD) for given water sample.
7. Determination of chemical oxygen demand (COD) for given water sample.

### Books Recommended:

1. Gerald Karp - Cell and Molecular Biology 5<sup>th</sup> Edition (2007)
2. Geoffrey M. Cooper; Robert E. Hausman - The Cell: A Molecular Approach (2009)
3. C.B. Powar – Cell Biology Third Edition, reprint (2005), Himalaya Publishing House.
4. Nelson and Cox – Principles of Biochemistry, 5<sup>th</sup> Edition (2009)
5. Lewis J. Klein smith and Valerie M. Kish - Principles of cell and molecular biology – Third Edition (2002)
6. Benjamin Lewin, Gene IX, 9<sup>th</sup> Edition, Jones and Barlett Publishers, 2007.
7. J.D. Watson, N.H. Hopkins, J.W Roberts, J. A. Seitz & A.M. Weiner; Molecular Biology of the Gene, 6<sup>th</sup> Edition, Benjamin Cummings Publishing Company Inc, 2007.
8. Razdan MK – Introduction to Plant Tissue Culture 2<sup>nd</sup> Edition; Oxford & Ibh Publishing Co. Pvt Ltd 2010
9. Vasil IK – Plant Cell and Tissue Culture; Springer 1994
10. H.S. Chawla: Introduction to plant biotechnology. Oxford & IBH Publishing Co. (P) Ltd.
11. Michael J. Waites - Industrial microbiology: an introduction 7<sup>th</sup> Edition; Wiley-Blackwell 2008
12. Damien and Devies – Microbial Technology Edition (1994).
13. LE Casida – Industrial Microbiology Edition (1994)
14. Gareth G. Evans, Judy Furlong - Environmental Biotechnology: Theory and Application 2<sup>nd</sup> Edition; John Wiley and Sons 2011
15. Indu Shekhar Thakur – Environmental Biotechnology: Basic concepts and Applications. First Edition (2006). I. K. International Pvt. Ltd.



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

पाठ्यक्रम – चॉयस 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 Filing 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 Tariff and Trade (GATT):** Impact on Pharmaceutical industry. History of GATT, its impact on pharmaceutical industry. Pharmaceutical market 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. फार्मसी संस्थान, पं. र. शु. वि. वि. रायपुर (छ.ग.)

पाठ्यक्रम	- चॉयस 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, its 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.

अध्ययनशाला का नाम : Institute of Management

पाठ्यक्रम: चौथस बेस्ट पाठ्यक्रम: द्वितीय सेमेस्टर

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

कुल क्रेडिट : 3 कुल अंक: 100

पाठ्यक्रम 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 Wehrich, 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

**Name of School:** School of Studies in Physical Education  
**Course:** Choice Based Course ~~XXXX~~ Semester - ~~II~~ (Second)  
**Name of question Paper:** Physical Education, Health and Fitness  
**Total Credits:** 3 **Total Marks:** 100

**Course Details**

Contents	T	P	Credits
1. Basic introduction of Cardio-respiratory and Muscular System 2. Effect of exercise on Cardio-respiratory and Muscular System 3. Concept of Health 4. Dimensions of Health	2 (2 Hour/Week)	1 (2 Hour/Week)	3
5. Concept of Physical Fitness and Health related fitness 6. Components of physical Fitness 7. Different Training Methods 8. Principles of Training Load			
9. Diet, Proximate Principles, Micro Nutrients 10. Malnutrition 11. Obesity and its Control 12. Exercise prescription 13. Exercise and Hyperkinetic Problems			
14. Personality Development 15. Motivation 16. Mental health development 17. Psychomotor development 18. Emotional Control 19. Social skills development in sports (Team Building, Group Dynamics, Group cohesion)			
20. Meaning, Concept and Art of Yoga. 21. Parts of Yoga: Yama Niyama, Asana, Pranayama, Pratyahara, Dharana, Dhyan and Samadhi. 22. Surya Namaskar: Meaning, Contents, Benefits and Steps. 23. Meditation: Origin, Meaning, Types, Benefits, Research based findings. 24. Mudras and Bandhas.			

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

**3 Cedit**

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 Offenses 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 Unenforceable Contract, Breach of Contract, Quasi Contract, Indemnity, Guarantee, Bailment and Agency. Sales of Goods, Partnership.

**List of Recommended Books**

- 1- Kane's Dharmashastra- 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.

# 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. सुघड़ छत्तीसगढ़ी भाषा— डॉ. कौस्तुभ मणि द्विवेदी

# CHOICE-BASED SYLLABUS

## SUBJECT- HINDI

साहित्य एवं भाषा अध्ययनशाला

विषय— हिंदी

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 : मानक का अर्थ, मानक भाषा : स्वरूप मानक, भाषा के लक्षण, हिंदी की बोलियाँ
3. देवनागरी लिपि अर्थ, परिभाषा और विशेषताएँ

### यूनिट—2

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

### यूनिट—3

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

### संदर्भित पुस्तकें—

1. हिन्दी साहित्य का इतिहास— आचार्य रामचन्द्र शुक्ल
2. हिंदी व्याकरण — कामता प्रसाद गुरु



# **CHOICE-BASED SYLLABUS**

## **SUBJECT- ENGLISH**

**School of Studies Literature & Language**

**II Sem-Paper -1**

**Functional English Language**

**Credit-3**

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

### **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