



**SYLLABUS**  
**Choice Based Programme for Third**  
**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)

## तृतीय 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	संप्रेषणपरक - हिंदी	20 to 30	All Student	9 to 10	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	Basic Statistics - II	5 to 25	All Student	16 to 17	Dr Prabha Rohatgi-9406009403
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.	Essential of Invormation Technology	10 to 20	Science	16 to 17	Dr V K Patle - 9993908607



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

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

18	Bio Sc.	Vector Borne Diseases	10 to 30	All Student	16 to 17	Dr. S C Naithani - 07712263038
		Rythms in Life	10 to 30	All Student	16 to 17	Prof S K Prasad - 9425078327
19	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
25	Chhattisgarhi	छत्तीसगढ़ी भाषा और साहित्य	10 to 20	All Student	9 to 10	
26	Hindi	हिंदी साहित्य का इतिहास एवं छत्तीसगढ़ी के हिंदी साहित्यकार	10 to 20	All Student	9 to 10	
27	Englissh	General English&-II	10 to 20	All Student	9 to 10	

अध्ययनशाला का नाम – साहित्य एवं भाषा-अध्ययनशाला  
पाठ्यक्रम – च्वॉयस बेस्ड पाठ्यक्रम 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 Language, 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<br>Publications : Darbhanga Road<br>Allahabad. |

*ShailShams*

3/2/2016

अध्यक्ष,

साहित्य एवं भाषा-अध्ययन शाला,  
पं. रविशंकर शुक्ल विश्वविद्यालय,  
रायपुर. (छत्तीसगढ़)

अध्ययन शाला का नाम	—	ग्रंथालय एवं सूचना विज्ञान.
पाठ्यक्रम	—	चॉइस बेस्ड पाठ्यक्रम
सेमेस्टर	—	द्वितीय तृतीय
प्रश्नपत्र का नाम	—	Library Information Sources
कुल क्रेडिट — 3		कुल अंक—100

### पाठ्यक्रम का विवरण—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 : Genesis 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

*Mema*  
 IN CHARGE  
 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-II / Part-II (For Third Semester)

कुल क्रेडिट -03

कुल - 80

खण्ड-1 - योग की परिभाषा, उद्देश्य, आसनों का वर्गीकरण, आसन और व्यायाम में अंतर, बंधों का वैज्ञानिक विवेचन, प्राणायाम की परिभाषा, प्राणायाम के लाभ, प्राणायाम की प्रक्रिया का वैज्ञानिक विवेचन, श्वसन तंत्र की क्रिया विधि प्राणायाम के संदर्भ में, दीर्घ श्वसन एवं प्राणायाम में 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 पाँच 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-सावधानियाँ 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. स्वस्थवृत्ति विज्ञान          | — डॉ. रामहर्ष सिंह  |
| 2. योगिक चिकित्सा                | — स्वामी कुवल्यानंद |
| 3. प्राण शक्ति : एक द्विच 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 क्रेडिट का है।



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

पाठ्यक्रम का नाम — चॉयस बेस्ड पाठ्यक्रम तृतीय सेमेस्टर  
प्रश्नपत्र का नाम — Indian Village  
कुल क्रेडिट — 03 कुल अंक — 100  
पाठ्यक्रम विवरण :-

**Indian Village**

- 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.

(R) 8/11/12/2015  
Head

School of Studies in Sociology  
P. Ravishankar Shukla University  
Raipur - 492 019 (C. G.)

14/11/15

**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. Little (Eds.) 1999), India's Economic Reforms and Development (Essay honor of Manohar Singh), Oxford University Press, New Delhi.
2. Bardhan, P. K. (9<sup>th</sup> 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 (9<sup>th</sup> 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, 71<sup>st</sup> Edition.
8. Mishra, S. K. and V. K. Puri, (2014) Indian Economy, Himalaya Publishing House Pvt. Ltd., New Delhi, 32<sup>nd</sup> Edition.



# **SCHOOL OF STUDIES IN PSYCHOLOGY**

*Pt. Ravishankar Shukla University, Raipur*

## **CHOICE BASED SYLLABUS – 3<sup>rd</sup> 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.

<b>Paper</b>	<b>Course Coordinator</b>	<b>Marks</b>	<b>Credit</b>
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.)

अध्ययन शाला का नाम – प्राचीन भारतीय इतिहास संस्कृति एवं पुरातत्व अध्ययनशाला

पाठ्यक्रम – चॉइस बेस्ड पाठ्यक्रम तृतीय सेमेस्टर

प्रश्न पत्र का नाम – Elements of Ancient Indian Culture & Religion

कुल क्रेडिट – 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

प्रिमेरा निश  
अध्यक्ष 30/12/15  
प्राचीन भारतीय इतिहास  
संस्कृति एवं पुरातत्व अध्ययनशाला  
पं.र.शु.वि.वि., रायपुर (छ.ग.)

**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**

- 01 बस्तर की जनजातियां
- 02 बस्तर की कलाएँ —ढोकरा, काष्ठ शिल्प, बांस शिल्प एवं मृदा शिला
- 03 बस्तर के लोकनृत्य एवं लोकगीत
- 04 बस्तर का दशहरा

**क्रेडिट 2**

- 05 छत्तीसगढ़ में विभिन्न पर्व ,त्योहार एवं मेले
- 06 छत्तीसगढ़ में प्रमुख लोकगीत
- 07 छत्तीसगढ़ में प्रमुख लोकनृत्य
- 08 छत्तीसगढ़ के प्रमुख लोककलाकार

**क्रेडिट 3**

- 09 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. जे.आर.वर्ल्थानी एवं वासुदेव साहसी — बस्तर का राजनीतिक एवं संस्कृतिक इतिहास
- 6. वीरबाला भावसार — आदिवासी कला
- 7. रामकुमार बेहार एवं नर्मदा प्रसाद श्रीवास्तव — आदिवासी बस्तर

**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 ~~Course Code~~ 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.

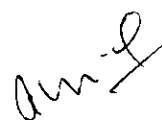

Qualitative and Quantitative research

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



**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 103**

**Title: Corporate Social Responsibility - Third Semester**

Maximum Marks: 100 (80+20)

**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 the challenges of modern-day enterprise, the aspirations of stakeholders.

The proposed course will help the student's better understanding.


Meaning and Definition of Corporate Social Responsibility (CSR), CSR and Strategic Branding in Rural India, CSR Practices in India.

Corporate and Rural Development, Public Private Partnerships, Stakeholder Engagement, Cause and Social Marketing, Environmental responsibility, socially Responsible investing

Corporate Social Responsibility in view of Ministry of Corporate Affairs, India, Companies ACT, 2013, Section 135, 149, 182, 198, 380, 381, 08.

**Books Recommended**

1. Corporate Social Responsibility. Philip Kotler, Nancy Lee, John Wiley & Sons Inc. 2005 ISBN 0-471-47611-0.
2. Changing Business from the Inside Out. Tim Mohin, Greenleaf Publishing (2012) ISBN Pending.
3. Green to Gold. Daniel Esty, Andrew Winston, John Wiley & Sons Inc. 2006 ISBN 978-0-470-39374-1.
4. Waddock, S. (2009). Making a difference? Corporate responsibility as a social movement. *Journal of Corporate Citizenship*, 33, 35-46.



5. Just good business: A special report on corporate social responsibility. (January 19, 2008). *The Economist*
6. Growth and Development Mishra and Puri (2004). (Himalya publishing house).
7. The capitalist's Bible. Morgenson, G. (2009). (Harper Collins)
8. Only Business india's Corporate Social responsiveness in a globalising word. Mitra, M. (2007) (Oxford)
9. Making sustainability Work Epstein, M. J. (2008). (Beret-Koehler Publishers)
10. Corporate Social Responsibility and globalisation. Cramer, J. (2006) (Greenleaf Publishing).

A handwritten signature in black ink, appearing to be 'ah' followed by a long horizontal stroke.Two handwritten signatures in black ink. The top one is 'ah' with a horizontal stroke, and the bottom one is 'am-l' with a horizontal stroke.



## **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.सी: भारत का भौतिक भूगोल, एशिया प्रकाशन रायपुर 2003
8. बंसल सुरेशचन्द्र, भारत का भूगोल, मिनाक्षी प्रकाशन, मेरठ.
9. कुमार, प्रमिला : छत्तीसगढ़ का भूगोल
10. चन्द्राकर, पी. एल : छत्तीसगढ़ का भूगोल

अध्ययनशाला का नाम	–	भौतिकी एवं खगोल भौतिकी अध्ययनशाला
पाठ्यक्रम	–	च्चायस 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.
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 Eighth 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 Eighth 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.

# RESONANCE SPECTROSCOPY, PHOTOCHEMISTRY AND ORGANOCATALYSIS

## Syllabus

### Elective Course

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

## III Semester

#### UNIT –I

- 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.

#### UNIT –II

- A. **PHOTOELECTRON SPECTROSCOPY** : Basic principle both for atoms and molecules; Photo-electric effect, ionization process, extraKoopman's simple molecules, 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.

#### UNIT –III

- 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 constants 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.

#### UNIT –IV

##### 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: Hydrogenation of alkenes, Hydroformylation, Monsanto acetic acid synthesis, Wacker oxidation of alkenes, Alkenes metathesis, Palladium-Catalysed C-C bond forming reactions, asymmetric oxidation. Heterogeneous catalysis: The nature of heterogeneous catalysts, Fischer-Tropsch synthesis, alkene polymerization.

#### BOOK SUGGESTED:

1. Infrared and Raman Spectra: Inorganic and Coordination Compounds, K. Nakamoto, Wiley.
2. Fundamentals of Photochemistry, K.K. Rohtagi-Mukherji, Wiley-Eastern.
3. Essentials of Molecular Photochemistry, A. Gilbert and J. Baggott, Blackwell Scientific Publications.
4. Molecular Photochemistry, N.J. Turro, W.A. Benjamin.
5. Introductory Photochemistry, 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. Overton, J. Rourke, M. Weller, F. Armstrong, Oxford University Press.
11. Inorganic Chemistry: C.E. Housecroft, 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.

## CHEMISTRY OF BIOMOLECULES

### Syllabus

#### Elective Course

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

### III Semester

#### UNIT –I

- 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 iron-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.

#### UNIT –II

- A. **METALLOENZYMES:** Zinc enzymes –carboxypeptidase and carbonic anhydrase. Iron enzymes – catalase, peroxidase and cytochrome P-450. copper enzymes- superoxide dismutase. Molybdenum oxotransferase 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.

#### UNIT –III

- A. **ENZYMES:** Nomenclature and classification of induced Enzyme. 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<sup>+</sup>, NADP<sup>+</sup>, FMN, FAD, lipoic acid, vitamin B<sub>12</sub>.
- C. **BIOTECHNOLOGICAL APPLICATIONS OF ENZYMES:** Techniques 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.

#### UNIT –IV

- 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 mechanochemical 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, Elsevier.
4. Principles of Bioinorganic Chemistry, S.J. Lippard and J.M. Berg, University Science Books.
5. Bioinorganic Chemistry, I. Bertini, 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. Immobilized Enzymes: An Introduction and Applications in Biotechnology, Michael D. Trevan, and John Wiley.

अध्ययन शाला का नाम – सांख्यिकी अध्ययन शाला  
पाठ्यक्रम – च्वॉयस बेस्ड पाठ्यक्रम तृतीय समेस्टर

प्रश्नपत्र का नाम – BASIC STATISTICS-II

कुल क्रेडिट – कुल अंक – 100  
पाठ्यक्रम विवरण – विवरण संलग्न

### THIRD SEMESTER

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

### Choice Based Credit System Syllabus for IIIrd Semester

#### Paper II BASIC STATISTICS-II

Mathematical and statistical definitions of probability, laws of probability, Random variable and sampling techniques.

Simple random sampling, Stratified random sampling, Cluster Sampling, Systematic sampling.

Parameter and Statistic, Null and alternative hypothesis, level of significance, p-value, degree of freedom, Test of Hypothesis, Application of Chi square test, t and F.

Normal distribution, its properties and applications in different statistical test. Analysis of variance, One way ANOVA and Two way ANOVA.

Use of Statistical Software packages for data analysis – SPSS and Excel.

#### References:

1. **Gupta & Kapoor:** Fundamentals of Mathematical Statistics, S. Chand and Sons.
2. **Goon A.M., Gupta M.K., Dass Gupta B. (1991):** Fundamentals of Statistics, Vol.I, World Press, Calcutta.
3. **Rohatgi V. K. (1967):** An Introduction to Probability Theory and Mathematical Statistics, John Wiley and Sons.

Name of the Department - SOS in Electronics and Photonics, PRSU, Raipur  
Course - Choice Based Course EL-2, Third Semester  
Name of Question Paper - EL2 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.Bakshi U.A.Bakshi, Technical publication, Pune
- Biomedical Instrumentation and Measurment- R. Anandanatarajan, PHI

*Lotus*  
11/12/2015



अध्ययनशाला का नाम :	भूविज्ञान एवं जल प्रबंधन अध्ययनशाला
पाठ्यक्रम :	चॉइस बेस्ड पाठ्यक्रम तृतीय सेमेस्टर
प्रश्न पत्र का नाम :	Disaster Management आपदा प्रबंधन GMnE - II
कुल क्रेडिट :	तीन (०३)
कुल अंक :	१०० ( ८० सैधांतिक + २० आंतरिक मूल्यांकन)

#### पाठ्यक्रम विवरण:

### GMnE- II DISASTER MANAGEMENT

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

*Minad*  
 20-12-2015

HEAD  
 School of Studies in Geology  
 Pt. Ravishankar Shukla University  
 RAIPUR-492 010 (C. G.)

<b>Name of SoS</b>	<b>School of Studies in Mathematics</b>
<b>Syllabus</b>	<b>Choice Based Syllabus III Semester</b>
<b>Name of the paper</b>	<b>Elementary Mathematics for Social Sciences</b>
<b>Total Credit: 3</b>	<b>Total Marks: 100</b>
<b>Algebra and Equations:</b> The Real Numbers, Polynomials, Factoring ,Rational Expressions, Exponents and Radicals, First-Degree Equations, Quadratic Equations.	
<b>Graphs, Lines, and Inequalities:</b> Graphs, Equations of Lines, Linear Models, Linear Inequalities, Polynomial and Rational Inequalities.	
<b>Functions and Graphs:</b> Functions, Graphs of Functions, Applications of Linear Functions, Quadratic Functions and Applications, Polynomial Functions, Rational Functions.	
<b>Exponential and Logarithmic Functions:</b> Exponential Functions, Applications of Exponential Functions, Logarithmic Functions, Logarithmic and Exponential Equations.	
<b>Systems of Linear Equations and Matrices:</b> 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.	
<b>Recommended Book:</b> <b>M.L.Lial, T.W.Hungerford, J.P.Holcomb, B.Mullins:</b> <i>Mathematics with Applications in the Management, Natural and Social Sciences</i> , 7 <sup>th</sup> ed. Pearson.	

Department Name : S.o.S in Computer science and IT  
Course : M.Sc.(IT)Choice Based Course III Semester  
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 Publications            |

  
15-12-2018

# **SCHOOL OF STUDIES LIFE SCIENCES**

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

पाठ्यक्रम: चॉयस बेस्ड पाठ्यक्रम...तृतीय सेमेस्टर...(Third Semester)

प्रश्नपत्र का नाम: वेक्टर बॉर्न डिजीसेस (Vector Born Diseases)

कुल क्रेडिट...तीन....

कुल अंक.....100.....

पाठ्यक्रम विवरण

## **Vector Born Diseases**

**(Credits: 03)**

### **Vectors**

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

### **Vector born diseases**

An overview; Brief introduction of important vector borne diseases including Malaria, Chickungunia, Japanese encephalitis, Trypanosomiasis (HAT and Chaga's disease), Leishmaniasis, Lymphatic filariasis, Oncocerciasis, Tick borne diseases, Schistosomiasis.

### **Prevention and control of vectors**

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. Park JE and Park K: Preventive and Social Medicine
2. Chatterjee KD: A Text Book of Medical Parasitology

**PT. RAVISHANKAR SHUKLA UNIVERSITY, RAIPUR – 492010 (C.G.)**

# SCHOOL OF STUDIES LIFE SCIENCES

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

पाठ्यक्रम: चौथस बेस्ड पाठ्यक्रम...तृतीय सेमेस्टर....(Third Semester)

प्रश्न पत्र का नाम: रीदम्स ईन लाईफ (Rhythms in Life)

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

पाठ्यक्रम विवरण

## Rhythms in Life

[Credit: 3]

### 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. Quantification of biological rhythms - Average, amplitude, phase, and period.

### 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). Rhythm in plants, cyanobacteria, fungi, *Drosophila*, fish, mammals, and humans.

### Application of principles of chronobiology to augment human welfare

Application in treatment of different types of diseases: cancer, cardiovascular, allergies & asthma, and sleep disorders.

### Shift work and Jet Lag

Circadian rhythms in occupational and travel stresses: Shift work; Types of shift system, Shift work and human health: Effect on circadian rhythm, Consequences on sleep, Psychosocial problems, Clinical and non-clinical problems. Jet Lag.

### Lab Course/ Field Work:

Measurement of own body temperature and heart rate over a period of 168 hours.

Measurement of sleepiness, fatigue and attention over a period of 168 hours.

Measurement of sleep-wake rhythm using wake-up to-sleep timings over a period of one week.

Study of rhythm in flowering in locally available model species.

Study of prevalence of chronotype in local human population using Horne-Ostberg morningness eveningness scale & MCTQ.

Study of foraging activity rhythm in a locally available avian species.

Study of any other rhythms of interest.

**PT. RAVISHANKAR SHUKLA UNIVERSITY, RAIPUR - 492010 (C.G.)**

## **SCHOOL OF STUDIES LIFE SCIENCES**

### **Recommended Books/Reading Materials:**

S Binkley	Biological Clocks – Your Owner's Manual
MK Chandrashekar	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, December 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

**S.O.S. In Anthropology**  
**Choice Based Syllabus 3<sup>rd</sup> Semester**  
**Applications of Anthropology**

**Credit: 03**

**MAX. Marks- 100**

1. Applied Biological Anthropology,

Application of Human Genetics

2. Nutritional Anthropology,

Anthropology of Sports,

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

*Prabhakar  
Chakraverty*

*Shree* *M. J. ad*



- Amulika  
Sahawant  
Zayed

**Name of School of Studies: SoS in Biotechnology****Course: Choice Based Course,****Third : Semester****Name of Paper: Paper-II (Bioprocess Engineering)****Total Credit: 03 (Three)****Total Mark: 100**

1. Introduction to Bioprocess Engineering.
2. Microbial Physiology in relation to Bioprocess Engineering: Batch culture, Continuous culture and Fed-batch culture
3. Isolation, Preservation and Maintenance of industrial Microorganisms: Isolation of Industrially important micro-organisms, Enrichment Media, Screening methods, the preservation of industrially important micro-organisms.
4. Fermentation processes: The development of inocula for industrial bioreactor, General Introduction of bioreactor, Basic Function of a bioreactor.
5. General concept of downstream processing: Introduction, Removal of microbial cells and other solid matter, Foam separation , Precipitation, Filtration, Centrifugation, Cell disruption, Drying, Crystallization and whole broth processing.
6. Industrial production of chemicals: Alcohol (ethanol), Acids (citric acetic and gluconic), and Antibiotics (penicillin, streptomycin & tetracycline).
7. Introduction to food technology: Elementary idea of canning and packing.
8. Food preservation.

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

### List of Practical's:-

1. Isolation and identification of microorganisms from industrial waste water.
2. Isolation and maintenance of organisms by plating, streaking and serial dilution methods. Slants and stab cultures. Storage of microorganisms.
3. Growth; Growth curve; Measurement of bacterial population by turbidity and serial dilution methods. Effect of temperature, pH and carbon nitrogen sources on growth.
4. To study the fungal growth curve.
5. Determination of thermal death point (TDP) and thermal death time (TDT) of microorganism (Bacteria and Fungi).
6. To study the production of citric acid by *Aspergillus niger* and also qualitative and quantitative test.
7. Bio-ethanol production

### Books Recommended:

1. General Microbiology, Stainer, R.Y., Ingraham, J.L., Wheelis, M.L. and Painter, P.R. The Macmillan Press Ltd.
2. Brock Biology of Microorganisms, Madigan, M.T. Martinko, J.M. and Parker, J. Prentice-Hall.
3. Microbiology, Pelczar, M.J. Jr., Chan, E.C.S. and Kreig, N.R. Tata McGraw Hill (2009)
4. Microbiology: Lansing Prescott, John Harley, and Donald Klein; McGraw Hill 5<sup>th</sup> Edition (2001)
5. Shuler ML and Kargi F, Bioprocess Engineering: Basic concepts, 2nd Edition, Prentice Hall, Engelwood Cliffs, 2002.
6. Stanbury and Whittaker – Principles of Sterilization techniques, First Indian reprint Edition (1997). Aditya Book (P) Ltd. New Delhi
7. Michael J. Waites - Industrial microbiology: an Introduction 7<sup>th</sup> Edition; Wiley-Blackwell 2008
8. LE Casida – Industrial Microbiology Edition (1994)
9. U Satayanarayan – Biotechnology, First Edition (2005) Books and Allied (P) Ltd. Kolkata.
10. Mansi EMTEL, Bryle CFA. Fermentation Microbiology and Biotechnology, 2nd Edition, Taylor & Francis Ltd, UK, 2007

**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.

अध्ययनशाला का नाम : Institute of Management

पाठ्यक्रम: चॉयस बेस्ट पाठ्यक्रम: तृतीय सेमेस्टर

---

प्रश्नपत्र का नाम : **MANAGERIAL COMMUNICATION**

कुल क्रेडिट : 3      कुल अंक: 100

पाठ्यक्रम 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, Charries 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

**Name of School:** School of Studies in Physical Education  
**Course:** Choice Based Course ~~XXXX~~ Semester - III (Third)  
**Name of question Paper:** Yoga Education  
**Total Credits:** 3 **Total Marks:** 100

**Course Details**

Contents	T	P	Credits
1. Meaning, Concept and Art of Yoga.	2 (2 Hours/Week)	1 (2 Hours/ Week)	3
2. Parts of Yoga: Yama Niyama, Asana, Pranayama, Pratyhara, Dharana, Dhyan and Samadhi.			
3. Shuddhi Kriyas: Dhauti, Neti, Kapalbhathi, Tratak, Nauli and Basti.			
4. Surya Namaskar: Meaning, Contents, Benefits and Steps.			
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			
7. Meditation: Origin, Meaning, Types, Benefits, Research based findings.			
8. Concept of Nadis (System of Channels) and Chakras (Energy Centers), Expansion of Consciousness.			
9. Essence of Raj Yoga: Chitta, Vraties, 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.			

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 Privilege of and immunities 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   |                               |



## 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

*Sheel Sharma*

3/2/2016

अध्यक्ष,

साहित्य एवं भाषा-अध्ययन शाला,  
पं. रविशंकर शुक्ल विश्वविद्यालय,  
रायपुर. (छत्तीसगढ़)

साहित्य एवं भाषा अध्ययनशाला

विषय— हिंदी

पाठ्यक्रम— चॉइस बेस्ट पाठ्यक्रम 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
2. नामकरण
3. आदिकाल के प्रमुख रचनाकार एवं रचनाएँ

यूनिट—2 काल परिचय

1. पूर्वमध्यकाल की परिस्थितियाँ एवं प्रवृत्तियाँ
2. उत्तर मध्यकाल की परिस्थितियाँ एवं प्रवृत्तियाँ
3. आधुनिक काल की परिस्थितियाँ एवं प्रवृत्तियाँ

यूनिट—3 छत्तीसगढ़ के प्रमुख हिंदी साहित्यकार एवं उनकी रचनाएँ

1. पदुमलाल पुन्नालाल बख्शी
2. मुकुटधर पाण्डेय
3. विनोद कुमार शुक्ल
4. श्रीकांत वर्मा
5. प्रमोद वर्मा
6. मुक्तिबोध
7. माधव राव सप्रे
8. हबीब तनवीर
9. शानी

संदर्भित पुस्तकें—

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

*Shail Shrivastava*

3/2/2016

अध्यक्ष,

साहित्य एवं भाषा-अध्ययन शाला,  
पं. रविशंकर शुक्ल विश्वविद्यालय,  
रायपुर. (छत्तीसगढ़)

**CHOICE-BASED SYLLABUS**  
**SUBJECT- ENGLISH**

School of Studies Literature & Language

III Sem

Paper -2

Communicative Skills

**Credit-3**

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

**I – Grammar**

7. Clauses
8. Analysis of Sentences
9. Idioms & 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

*Shail Shetty*  
3/2/20/6  
अध्यक्ष,

साहित्य एवं भाषा-अध्ययन शाला,  
पं. रविशंकर शुक्ल विश्वविद्यालय,  
रायपुर. (छत्तीसगढ़)