

# **Shri Rawatpura Sarkar University, Raipur**



## **Examination Scheme & Syllabus**

**for**

**BACHELOR OF OPTOMETRY**

**SEMESTER-VI**

(Effective from the session: 2022-23)



**Faculty of Science**  
**Shri Rawatpura Sarkar University, Raipur**  
**Bachelor of Optometry**  
**Semester-VI**  
**Examination Scheme**

S. No.	Course Code	Course Title	Hours / Week			Credits	Maximum Marks			Sem End Exam Duration (Hrs)
			L	T	P		Continuous Evaluation	Sem End Exam	Total	
1.	SBS07601T	Public-health, Community optometry & Occupational optometry		4		4	30	70	100	3
2.	SBS07602T	Pediatric Optometry & Geriatric Optometry		4		4	30	70	100	3
3.	SBSO7603T	Medical Law and Ethics		4		4	30	70	100	3
4.	SBS07604T	Research Methodology & Biostatistics		4		2	15	35	100	3
5.	SBS07691P	Assignment Based Presentation			12	6	30	70	100	5
6.	SBS07692P	Lab Course XV: Glaucoma			4	2	15	35	50	5
<b>TOTAL</b>				12	16	22			550	



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<b>Course Title</b>	<b>PUBLIC-HEALTH, COMMUNITY OPTOMETRY &amp; OCCUPATIONAL OPTOMETRY</b>				
<b>Course Code</b>	SBS07601T				
<b>Course Credits</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>TC</b>	
	<b>4</b>			<b>4</b>	
<b>Prerequisites</b>	<b>Basic knowledge about Community optometry.</b>				
<b>Course Objectives</b>	Details about Public-health, Community optometry & Occupational Optometry, how to spread awareness among people.				
<b>Course Contents</b>	<p><b>UNIT I</b></p> <p>Philosophy of Public Health: History of public health History of public health optometry (including epidemiology, man power, projections,community reimbursement mechanisms.</p> <p><b>UNIT II</b></p> <p>Health care systems: Organizations of health services (principles of primary, secondary and tertiary care) Health Care Delivery systems in India and determinants of health Detriments of health care delivery system Planning of health services (including relevant legislation and implications to optometric practice) Health economics Health manpower protection and in the practice of ophthalmology Third party involvement in financing healthcare services (including both governmental and non- governmental programs). (12 hours)</p> <p><b>UNIT III</b></p> <p>Modes of Health and Vision care delivery: Solo and group practice modes Multidisciplinary and institutional practice modes Optometry's role as a care primary care profession.</p> <p><b>UNIT IV</b></p> <p>Global medicine and evolution of Public Health in India Public Health optometry: concepts and implementation. Levels of prevention – optometrist's role in community Concepts of National Health Programs General principles of Epidemiology and methods Screening in populations.</p>				



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	<p><b>UNIT – V</b></p> <p>Epidemiology of blindness –cataract, Glaucoma deficiency disorders Scope of geriatric ophthalmology in preventive and rehabilitation care Ocular manifestation in systematic disorders Natural history of diseases, Transmission of disease Basics in research methodology in populations Demography and vital statistics, National and International Agencies in Health Care Training and Instructional services.</p>
<b>Course outcomes</b>	Details about Public-health, Community optometry & Occupational optometry, how to spread awareness among people.
<b>Text books</b>	<ol style="list-style-type: none"> <li>1. Handbook of Visual Optics, Two-Volume Set Kindle Edition by Pablo Artal (Editor)</li> <li>2. Clinical Procedures for Ocular Examination, Fourth Edition Paperback – 16 January 2016 by Nancy Carlson (Author), Daniel Kurtz (Author)</li> </ol>
<b>References books</b>	<ol style="list-style-type: none"> <li>1. Retinal Pigment Epithelium and Macular Diseases (Documenta Ophthalmologica Proceedings Series Book 62) Kindle Edition by Gabriel Coscas (Editor), Felice Cardillo Piccolino (Editor)</li> <li>2. Clinical Procedures for Ocular Examination, Third Edition Paperback – 16 October 2003 by Nancy Carlson (Author), Daniel Kurtz (Author)</li> <li>3. Instrumentation for Eyecare Paraprofessionals (The Basic Bookshelf for Eyecare Professionals) Paperback – 30 November 1998 by Michelle Herrin (Author)</li> </ol>

<b>Course Title</b>	<b>PEDIATRIC &amp; GERIATRIC OPTOMETRY</b>				
<b>Course Code</b>	SBS07602T				
<b>Course Credits</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>TC</b>	
	<b>4</b>			<b>4</b>	
<b>Prerequisites</b>	<b>Basic knowledge of Pediatric Optometry.</b>				
<b>Course objectives</b>	<b>PEDIATRIC OPTOMETRY-</b> The students will learn the Pediatric management of refractive errors and other visual problems. The students will also learn the dispensing aspects of glasses				



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	<p>in children and critical management of different refractive eye conditions in Pediatric eye care like Amblyopia, Anisometropia, etc. A detail of important ocular diseases affecting the pediatric age group will also be discussed.</p> <p><b>GERIATRIC OPTOMETRY-</b></p> <p>The students will learn the Geriatric management of refractive errors and other visual problems. The students will also learn the dispensing aspects of glasses in elderly and critical management of different refractive eye conditions in Geriatric eye care. A detail of important ocular diseases affecting the geriatric age group will also be discussed.</p>
<b>Course Contents</b>	<p><b>UNIT – I</b></p> <p><b>HISTORY:</b> Genetic factors Prenatal factors Postnatal factors, Normal prenatal development &amp; Prenatal systems, Embryology, Anomalies of prenatal &amp; postnatal development, Genetic origin, Albinism, Nystagmus, Buphthalmos, Macular disorders, Color Deficiencies, Retinitis pigmentosa, Ectopia Lentis, Acquired, Micro cornea, Macrocornea, Microphthalmos, Ptosis, Distichiasis, Coloboma, Cataract, Aniridia.</p> <p>Pupil displacement, Normal postnatal development, Visual Acuity Testing in Childrens – Objective &amp; Subjective.</p> <p><b>UNIT – II</b></p> <p>Normal appearance, pathology and structural anomalies of: Orbit Eyelids, Lacrimal system Conjunctiva Cornea, Sclera, Anterior chamber, uveal tract, pupil Lens, vitreous, fundus Oculomotor system, Measurement of the refractive system, Determining binocular status, tests for Strabismus, Heterophoria, Amblyopia, Fixation Disorders, ARC &amp; Fusional and accommodative anomalies, Determining sensory motor adaptability.</p> <p><b>UNIT – III</b></p> <p>Compensatory treatment and remedial therapy for: Myopia Pseudomyopia Hyperopia, Astigmatism, Anisometropia, Amblyopia, Remedial &amp; compensatory treatment for strabismus &amp; nystagmus, Vergence and accommodation.</p> <p><b>UNIT – IV</b></p> <p>Delayed development, Structural &amp; Anatomical changes of the eye. Physiological changes of the eye, Optical and refractive changes of the eye.</p> <p><b>UNIT – V</b></p> <p>Functional &amp; Neural changes with age, Aphakia, pseudophakia –its correction,</p>



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	Ocular diseases common in the old eye, with special reference to cataract, glaucoma, macular disorders, vascular diseases of the eye. Special considerations in the ophthalmic dispensing to the elderly. Management of visual problems of aging, How to carry on one's visual task overcoming the problems of aging? Contact lens in elderly, Optometric Examination of older adults.
<b>Course outcomes</b>	The students will learn the Pediatric management of refractive errors and other visual problems, The students will learn the Geriatric management of refractive errors and other visual problems.
<b>Text books</b>	<ol style="list-style-type: none"><li>1. Principles and Practice of Pediatric Optometry Hardcover – 1 August 1990 by David Rosen bloom (Editor)</li><li>2. Handbook of Pediatric Retinal OCT and the Eye-Brain Connection Paperback – 8 August 2019 by Cynthia A. Toth MD (Author)</li></ol>
<b>References books</b>	<ol style="list-style-type: none"><li>1. How to Improve Your Child's Eyesight Naturally: A Thoughtful Parent's Guide Paperback – 29 March 2004 by Janet Goodrich Ph.D. (Author)</li><li>2. Taylor and Hoyt's Pediatric Ophthalmology and Strabismus Hardcover – 23 December 2016 by Scott R. Lambert MD (Author), Christopher J. Lyons MB FRCS FRC FRCS (Author)</li></ol>



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<b>Course Title</b>	<b>MEDICAL LAW AND ETHICS</b>				
<b>Course Code</b>	SBS07603T				
<b>Course Credits</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>TC</b>	
	<b>4</b>			<b>4</b>	
<b>Prerequisites</b>	<b>Basic knowledge about Law and Accountancy.</b>				
<b>Course objectives</b>	This subject includes the discipline and the Law that is required to be followed as a practitioner. Public Relations that are required to be maintained and the setup management for private practice.				
<b>Course Contents</b>	<p><b>UNIT – I</b></p> <p>Legal environment and techniques- history law and equity. History and theory of licensure, Indications and contraindications Licensure as a means of internal, International Optometry – important foreign optometry law.</p> <p><b>UNIT – II</b></p> <p>The optometrist in court, Malpractice – theory of liability – damages – minimizing malpractice claims, Insurance, Negligence, Ethics – professional ethics.</p> <p><b>UNIT-III</b></p> <p>Laws governing practice of medical profession and paramedical profession in India, Registered medical practitioner – laws against practice of medicine of those unregistered. – Medical council of India –Dental council of India – Nursing council, Present rules and regulations – Laws regarding optical products, manufacturers – dispensing in India.</p> <p><b>UNIT – IV</b></p> <p>Accounts- Introduction: Terms used in accounts Principles of accountancy, Journals and journalizing, Ledger and ledger posting, Trial balance, subsidiary bookscash book, petty cash book, sales register, and purchase register, Bank reconciliation. Depreciation and other adjustments. Balance sheet and profit and loss account statements. Income tax and sales tax.</p> <p><b>UNIT – V</b></p> <p>Public Relations, Defining the Subject – Theory and Practice: Definitions, Public relations- its distinction from publicity, propaganda &amp; Advertising The</p>				



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	<p>universe of Public relations– internal and external support, aspects of PR. Phases of P.R: Analysis of the internal and external environment – formulating &amp; implementing PR policy- feedback, research and evaluation. The benefits of PR policy- Image building, promotion, of the product or services, better employee, government &amp; community relations, Methods of Public Relations. Press Relations: Writing and issuing a press release – press conference- facility visit &amp; open house – letters to the editor – assembling press activity.</p>
<b>Course Outcomes</b>	<p>This subject includes the discipline and the Law that is required to be followed as a practitioner. Public Relations that are required to be maintained and the setup management for private practice.</p>
<b>Text books</b>	<ol style="list-style-type: none"><li>1. Fiske, John – "Introduction to Communication Studies", Rotledge London, 1990.</li><li>2. Sharma RC &amp; Mohan K – "Business Corresponding and Report Writing", Tata McGraw Hill, New Delhi, 1994.</li><li>3. Alok Jain, P S Bhatia &amp; A M Shiekh – "Professional Communication Skills; S. Chand &amp; Company Ltd. 2005.</li></ol>
<b>References</b>	<ol style="list-style-type: none"><li>1. Rajendra Pal and JS Korlahalli – "Essentials of Business Communication", Sultan Chand &amp; Sons, 1997.</li><li>2. A guide to Correct English – Oxford University Press, Ely House, London W.I., Latest Edition. (For Unit III)</li><li>3. Fiske, John – "Introduction to Communication Studies", Rotledge London, 1990.</li><li>4. Geoffrey Leech &amp; Jan Svartvik – "A Communicative Grammar of English", ELBS Longman, England.</li></ol>





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<b>Course Title</b>	<b>PUBLIC-HEALTH, COMMUNITY OPTOMETRY &amp; OCCUPATIONAL OPTOMETRY</b>				
<b>Course Code</b>	SBS07604T				
<b>Course Credits</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>TC</b>	
	<b>4</b>			<b>4</b>	
<b>Prerequisites</b>	<b>Basic knowledge about Community optometry.</b>				
<b>Course Objectives</b>	Details about Public-health, Community optometry & Occupational Optometry, how to spread awareness among people.				
<b>Course Contents</b>	<p><b>UNIT I</b></p> <p>Philosophy of Public Health: History of public health History of public health optometry (including epidemiology, man power, projections,community reimbursement mechanisms.</p> <p><b>UNIT II</b></p> <p>Health care systems: Organizations of health services (principles of primary, secondary and tertiary care) Health Care Delivery systems in India and determinants of health Detriments of health care delivery system Planning of health services (including relevant legislation and implications to optometric practice) Health economics Health manpower protection and in the practice of ophthalmology Third party involvement in financing healthcare services (including both governmental and non- governmental programs). (12 hours)</p> <p><b>UNIT III</b></p> <p>Modes of Health and Vision care delivery: Solo and group practice modes Multidisciplinary and institutional practice modes Optometry's role as a care primary care profession.</p> <p><b>UNIT IV</b></p> <p>Global medicine and evolution of Public Health in India Public Health optometry: concepts and implementation. Levels of prevention – optometrist's role in community Concepts of National Health Programs General principles of Epidemiology and methods Screening in populations.</p>				



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	<p><b>UNIT – V</b></p> <p>Epidemiology of blindness –cataract, Glaucoma deficiency disorders Scope of geriatric ophthalmology in preventive and rehabilitation care Ocular manifestation in systematic disorders Natural history of diseases, Transmission of disease Basics in research methodology in populations Demography and vital statistics, National and International Agencies in Health Care Training and Instructional services.</p>
<b>Course outcomes</b>	Details about Public-health, Community optometry & Occupational optometry, how to spread awareness among people.
<b>Text books</b>	<ol style="list-style-type: none"><li>3. Handbook of Visual Optics, Two-Volume Set Kindle Edition by Pablo Artal (Editor)</li><li>4. Clinical Procedures for Ocular Examination, Fourth Edition Paperback – 16 January 2016 by Nancy Carlson (Author), Daniel Kurtz (Author)</li></ol>
<b>References books</b>	<ol style="list-style-type: none"><li>4. Retinal Pigment Epithelium and Macular Diseases (Documenta Ophthalmologica Proceedings Series Book 62) Kindle Edition by Gabriel Coscas (Editor), Felice Cardillo Piccolino (Editor)</li><li>5. Clinical Procedures for Ocular Examination, Third Edition Paperback – 16 October 2003 by Nancy Carlson (Author), Daniel Kurtz (Author)</li><li>6. Instrumentation for Eyecare Paraprofessionals (The Basic Bookshelf for Eyecare Professionals) Paperback – 30 November 1998 by Michelle Herrin (Author)</li></ol>



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<b>Course Title</b>	<b>RESEARCH METHODOLOGY &amp; BIOSTATISTICS</b>
<b>Course Code</b>	<b>BSCOP606</b>
<b>Prerequisites</b>	<b>Basic knowledge about Research .</b>
<b>Course objectives</b>	This course is designed to provide the students the basic knowledge in, Bio-statistics. At the conclusion of the course, the students will have the knowledge of data collection, statistical application and finally, presentation of the statistical data.
<b>Course Contents</b>	<p><b>UNIT – I</b></p> <p>Introduction to Biostatistics and Research methods in Vision science &amp; optometry, Introduction and method of collecting and presenting of statistical data, Calculation and interpretation of various measures like mean, median, standard deviations.</p> <p><b>UNIT – II</b></p> <p>Probability distribution, Correlation and regression, Significance tests and confidence interval. ANOVA:- One way, Two way, Parametric tests – Test for single proportion, Test for Equality of proportions, Test for single mean, Test for equality of means.</p> <p><b>UNIT – III</b></p> <p>Non parametric tests –Chi-square tests, Fisher’s exact test, Median test, Sign test, Wilcoxon test, Introduction to grant writing and Proposal development in research.</p> <p><b>UNIT- IV</b></p> <p>Research manuscript writing and Thesis, Dissertation tools, in research. Conducting and consideration of research ethical approvals.</p> <p><b>UNIT- V</b></p> <p>Research Design: Concept and Importance in Research – Features of a good research design – Exploratory Research Design – concept, types and uses, Descriptive Research Designs – concept, types and uses. Experimental Design: Concept of Independent &amp; Dependent variables.</p>
<b>Course outcomes</b>	At the conclusion of the course, the students will have the knowledge of data collection, statistical application and finally, presentation of the statistical data.
<b>Text books</b>	<ol style="list-style-type: none"><li>1. Fundamentals of Research Methodology and Statistics Paperback – 1 January 2006 by Y.K. Singh (Author)</li><li>2. Research and Statistics Paperback – 9 June 2018 by Sharma Suresh (Author)</li><li>3. Research Methodology Paperback – 1 January 2013 by Panneerselvam R (Author)</li></ol>



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<b>References books</b>	<ol style="list-style-type: none"> <li>1. Textbook on Legal Methods, Legal Systems &amp; Research Paperback – 1 January 2015 by Saha Tushar Kanti (Author)</li> <li>2. Biomedical Research Methodology :Including Biostatistical Applications Paperback – 1 January 2011 by Ranjan Das (Author)</li> <li>3. How to Write a Research Proposal and Thesis: A Manual for Students and Researchers (How to Write a Research Proposal and a Thesis) Paperback – 8 March 2013 by Mohamed E. Hamid (Author)</li> </ol>
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<b>Course Title</b>	<b>Assignment Based Presentation</b>				
<b>Course Code</b>	SBS07691P				
<b>Course Credits</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Total</b>	
	2			2	
<b>Prerequisites</b>	<b>Qualified B.Sc Optometry Semester-III</b>				
<b>Course Objective</b>	The following is an example of an individual presentation assignment and a group presentation. The individual presentation assignment explains that students will give two presentations over the semester on a topic of the student's choice.				
<b>Course Contents</b>	<ul style="list-style-type: none"> <li>- You will each be responsible for giving two presentations this semester. The presentations should be between five and ten minutes long, and the topics will be of your own choosing. Along with each presentation, please submit a 1-2 page paper that summarizes your topic.</li> <li>- Each team member should contribute equally. Teams will compile a list of major topics to be covered in their presentation, and assign one to each member to research and present.</li> <li>- Each member should speak for approximately three to Ten minutes. The presentation can reflect the diversity of viewpoints of the presenters. Designate one team member as the team leader. This person will be responsible for introducing the presentation as a whole, and each presenter.</li> <li>- Since grading is based on the presentation as a whole, team members should notify the professor before the date of the presentation if any member does not do their share. Shyness or stumbling do not negatively affect the grade.</li> <li>- Students select to use PowerPoint. This is absolutely required.</li> </ul>				
<b>Course Outcomes</b>	Deal with nerves and think more positively about public speaking. Consider ways of grabbing the listener's attention, holding their interest, and concluding strongly. Use body language and tone of voice to enhance their presentations. Use slides and visual aids effectively.				
<b>Text books</b>	Text books- <ul style="list-style-type: none"> <li>• OCI guidelines for ethical practice .</li> </ul>				



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	<ul style="list-style-type: none"> <li>• Research Methodology by CR Kothari.</li> </ul>
<b>Reference books</b>	<p>Reference books-</p> <ul style="list-style-type: none"> <li>• Research Methodology by CR Kothari.</li> <li>• Primary care in Optometry by T. Rosvenor 5th edition.</li> </ul>

<b>Course Title</b>	<b>Practical Glaucoma</b>				
<b>Course Code</b>	SBS07692P				
<b>Course Credits</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Details</b>	
			<b>4</b>	<b>2</b>	
<b>Course objective</b>	This course is an introduction to the way ophthalmologists approach and think about eye disease. Basic anatomy and simple descriptions of common eye disorders are presented. This course is designed to aid the beginning optometrist.				
<b>Course Contents</b>	<ul style="list-style-type: none"> <li>- Intraocular tension</li> <li>- Gonioscopy</li> <li>- Indirect ophthalmoscopy</li> <li>- Use of vital dyes / Anesthetics</li> <li>- Evaluation of cornea</li> <li>- Visual field analysis</li> <li>- F.F.A, HRT, OCT analysis.</li> </ul>				
<b>Course outcomes</b>	Identify the components of the visual system and functions. Identify the site and nature of action of simple pathological conditions. Basic anatomy and simple descriptions of common eye disorders are presented.				
<b>Text books</b>	<ul style="list-style-type: none"> <li>• Robbins, Kumar and Cotran</li> <li>• Elsevier Publications, latest editions</li> </ul>				
<b>Reference books</b>	<ul style="list-style-type: none"> <li>• Ananthnaraya, Orient Longman, latest editions</li> <li>• Robbins, Kumar and Cotran, Elsevier Publications latest editions</li> </ul>				



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