

# **Shri Rawatpura Sarkar University, Raipur**



## **Examination Scheme & Syllabus**

**for**

**BACHELOR OF OPTOMETRY**

**SEMESTER-V**

(Effective from the session: 2022-23)



**Faculty of Science**  
**Shri Rawatpura Sarkar University, Raipur**  
**Bachelor of Optometry**  
**Semester-V**  
**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.	SBS07501T	Low Vision Aids		4		4	30	70	100	3
2.	SBS07502T	Visual Rehabilitation & Vision training Sports vision		4		4	30	70	100	3
3.	SBSO7503T	Contact Lenses		4		4	30	70	100	3
4.	SBS07504T	Major eye diseases		4		2	30	70	100	3
5.	SBS07591P	Lab Course XIII: Low Vision Aids			12	6	30	70	100	5
6.	SBS07592P	Lab Course XIV: Contact lenses			4	2	15	35	50	5
<b>TOTAL</b>				12	16	22			550	



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<b>Course Title</b>	<b>LOW VISION AIDS</b>				
<b>Course Code</b>	SBS07501T				
<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 Low vision.</b>				
<b>Course objective</b>	The vast majority of patients with low vision can be helped to function at a higher level with the use of low vision devices. Management of a Low-vision patient does not end with prescribing Low vision device alone. It involves a coordinated effort on the part of the practitioner, patient and his / her family members to recognize the patient's limitations, and help him / her choose devices that will satisfy the patient's visual needs.				
<b>Course Contents</b>	<p><b>UNIT-I</b></p> <p>Low Vision - Legal Blindness – Impairment – Disability – Handicap, Impact of vision loss and its psychological aspects, Optics of low vision aids, Optics of low vision aids, Assesment of low vision in adults.</p> <p><b>UNIT-II</b></p> <p>Assesment of low vision in children–Multiple disabilities, Introduction Observation – Posture –Appearance, Mobility The Record Card Visual History – Diagnosis –Etiology Onset – Management –Family History - Vocation – Visual Demands – LeisureActivities Aids in use if any, Examination Retinoscopy – Refraction – Keratometry – Slit lamp Subjective at distance and near, Binocular testing - Motor alignment–Fusion Measurement of visual acuity Different systems of measuring acuity Optotypes in decimal steps – Logarithmic steps – Gratings.</p> <p><b>UNIT-III</b></p> <p>Tested to be performed: Contrast Sensitivity, Definition of Contrast – Spatial Frequency – Contrast sensitivity Curve Adaptation to different levels of illumination – Glare – Scattered light, Measuring contrast sensitivity – Charts: Bailey, Pelli Robson, and Cambridge Lea Symbols Visual Fields: Confrontation – Amsler grid - Tangent Screen – Perimetry,Color Vision: Defects - Tests Ophthalmoscopy Magnification:-Magnification by approach, Angular Magnification, Projection Magnification, Relative Size Magnification, Relative Distance Magnification.</p>				



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	<p><b>UNIT-IV</b></p> <p>Telescope: Telescope – Galilean – Keplerian Calculation of magnification Considerations of prescribing Types of telescopes – Hand held Clip on – Spectacle mounted, Use of telescope – handling – training, Relative Distance Magnification Principle &amp; Calculation, Hand and Stand Magnifiers Optics – Range of magnification- Specifications Spectacle magnifiers – Magnifications – Advantages – Disadvantages – Trial sets.</p> <p><b>UNIT-V</b></p> <p>Hand and Stand Magnifiers Optics – Range of magnification- Specifications Spectacle magnifiers – Magnifications – Advantages – Disadvantage Field Loss Devices – Trial sets, Hospital statistics: Collection of hospital statistical data – presentation – analysis of daily hospital service – monthly and annual reports. Computation of percentages in patient census, bed occupancy rate.</p>
<p>Course outcomes</p>	<p>Management of a Low-vision patient does not end with prescribing Low vision device alone. It involves a coordinated effort on the part of the practitioner, patient and his / her family members to recognize the patient’s limitations.</p>
<p>Text books</p>	<ol style="list-style-type: none"> <li>1. Low Vision Aids Paperback – 1 January 2010 by Chaudhry (Author)</li> <li>2. Low Vision Aids Practice Paperback – 1 January 2007 by Bhootra (Author)</li> </ol>
<p>Reference books</p>	<ol style="list-style-type: none"> <li>1. Management Of Vision Impairment(Low Vision, Vision Enhancement And Vision Rehabilitation) Paperback – 1 January 2010 by Ms Raju (Author)</li> <li>2. The Routledge Handbook of Visual Impairment (Routledge International Handbooks) Hardcover – 21 March 2019 by John Ravenscroft (Editor)</li> <li>3. International Ophthalmic Lens Year Book 1995: Spectacle Lenses and Low Vision Aids Paperback – 1 June 1995 by Christine Dickinson (Author), etc. (Author), Deike Grit (Author), Mo Jalie (Author)</li> </ol>



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<b>Course Title</b>	<b>VISUAL REHABILITATION &amp; VISION TRAINING &amp; SPORTS VISION</b>				
<b>Course Code</b>	SBS07502T				
<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 Rehabilitation and sports vision.</b>				
<b>Course objective</b>	Vision sports training program can help athletes of all ages and skill sets to hone their abilities and break through their barriers. The program is particularly successful for improving hand-eye coordination, reaction time and peripheral awareness. It has also been shown to reduce injuries and decrease the risk of concussions, keeping you on your feet and on the field.				
<b>Course Contents</b>	<p><b>UNIT-I</b></p> <p>Introduction to Optometric Rehabilitation, History of Rehabilitation Optometry, Definition and Principles of Rehabilitation, Symptomatology of Visual Disorders E.g. Poor Balance, Visual Hallucinations, Poor Depth Perception Poor Tracking Ability, Poor Visual memory, Poor Hand – Eye coordination, Approach to Optometric Rehabilitation, Therapeutic Approach to Optometric Rehabilitation.</p> <p><b>UNIT-II</b></p> <p>Neoplasia Therapeutic Approach to Optometric Rehabilitation, Visual Therapy Training, Orthoptics, Peripheral Nerve Regeneration, The Physiologic / Aspects and Clinical Application of Functional Electrical Stimulation in Rehabilitation, Optometric Rehabilitation Assessments: Actual Case Exposure &amp; Observation, Low Vision, Visual Field Defect Central Visual Field Defect Peripheral Visual Field Defect, Neurology Cerebral Palsy, Cerebrovascular Accidents Head Injury, Motor Neuron Diseases Multiple Sclerosis Muscular Dystrophy Parkinson’s Disease Peripheral Nerve Lesion Spinal Cord Lesion Brain Tumor Post – concussion, Syndrome Others, Special Concerns: Visual Agnosia, Alexia, Dyslexia, Dementia, Legally Blind, Down’s Syndrome.</p> <p><b>UNIT-III</b></p> <p>Optometric Rehabilitation Management, Preliminary Rehabilitative Assessment and Screening, Medical, Orthoptics / Low Vision / Surgical management, Case History, Symptomatology and Expectations</p>				



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	<p>Psychological and Behavioral Assessment, Rehabilitative Evaluation and Diagnosis, Activity analysis and Interest Comprehensive Evaluation of Visual Skills, Diagnosis of Visual Skill Dysfunction, Prescribing of Appropriate Therapy and Enhancement of, Remaining Skills: Visual Skills, Motility, Life Skills Adaptation / Orientation / Environmental Manifestation Counseling and Recommendation Referral System and or Co- Management, Psychiatrist, physical therapist, occupational therapist, cognitive therapist, psychologist, neurologist, others.</p> <p><b>UNIT-IV</b></p> <p>Principles of Vision Training , Introduction to Sports Vision History of Sports Vision Definitions of Terms, Vision and Sports: Vision Performance and Athletics, Equipment List, Sports Terminologies, Sports Vision Examination, Visual Acuity &amp; Contrast Refraction, Color Vision, Stereopsis.</p> <p><b>UNIT-V</b></p> <p>Dominant Eye / Hand , Eye Health, Ocular Motility, Cover Test, Visual Field, Visual Field, Glare Sensitivity, Accommodation – Vergence Facility, Dynamic Visual Acuity, Eye–Hand &amp; Eye-Foot Co- ordination, Response Speed, Peripheral Awareness Visual Skills in Sports and Development.</p>
<p><b>Course outcomes</b></p>	<p>The program is particularly successful for improving hand-eye coordination, reaction time and peripheral awareness. An important goal for Duke Sports Vision Center is to study outcomes of vision rehabilitation or vision training interventions to see whether they can be validated by the standards of evidence-based medicine.</p>
<p><b>Text books</b></p>	<ol style="list-style-type: none"> <li>1. Textbook of Rehabilitation Paperback – 1 January 2010 by Sunder (Author)</li> <li>2. Textbook of Rehabilitation Paperback – 1 January 2019 by S Sunder (Author)</li> <li>3. Physical Rehabilitation 6e (O'Sullivan, Physical Rehabilitation) (Old Edition) Hardcover – 1 July 2013</li> </ol>
<p><b>Reference books</b></p>	<ol style="list-style-type: none"> <li>1. Physical Rehabilitation Paperback – 1 January 2014 by O'SULLIVAN (Author)</li> <li>2. Physical Rehabilitation 6e (O'Sullivan, Physical Rehabilitation) (Old Edition) Hardcover – 1 July 2013</li> </ol>



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	3. Physical Medicine and Rehabilitation Q&A Review, Second Edition (Book + Free App) Paperback – 1 January 2017 by MD Weiss Lyn D. Weiss Harry J. Lenaburg Jay M. (Author)
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<b>Course Title</b>	<b>CONTACT LENSES</b>			
<b>Course Code</b>	SBS07503T			
<b>Course Credits</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>TC</b>
	4			4
<b>Prerequisites</b>	<b>Basic knowledge about Contact lenses.</b>			
<b>Course objectives</b>	The students will learn the basic knowledge of RGP contact lenses and basic concepts in fitting of contact lenses and its use. The course will cover the major area of contact lens management and practice. It will cover methods of contact lens fitting its after care and the complications of contact lens usage.			
<b>Course Contents</b>	<p><b>UNIT I</b>            History of contact lenses , Corneal anatomy and physiology, Contact lens materials – RGP, Optics of contact lenses, Indications and contraindications.</p> <p><b>UNIT II</b>            Patient’s initial visit , Preliminary measurements, Keratometry &amp; Corneal Topography, Slit Lamp Techniques, Fitting philosophies, Handling instructions.</p> <p><b>UNIT III</b>            Follow-up, post fitting problems, Fitting in astigmatism, Fitting in Keratoconus, RGP Bifocals &amp; fitting in Presbyopes, Verification of RGP, Contact Lens Solution for RGP, Complications due to RGP CL.</p> <p><b>UNIT IV</b>            Handling instructions &amp; insertion – removal techniques, Follow-up, post fitting problems, Fitting in aphakia, Fitting of contact lenses in children, Cosmetic contact lenses, low DK and high DK, Continuous and extended wear lenses, Disposable lenses.</p>			



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	<p><b>UNIT V</b></p> <p>Contact lens –toric SCL, Contact lens –bifocals, Multifocals, Therapeutic lenses/ bandage contact lenses, Contact lens solutions, Manufacturing semi finished lenses, Contact lens modifications of finished lenses, Instruments used in contact lens practice, Checking the parameters.</p>
<b>Course outcomes</b>	The students will learn the basic knowledge of RGP contact lenses and basic concepts in fitting of contactlenses and its use.
<b>Text books</b>	<ol style="list-style-type: none"> <li>1. Textbook Of Contact Lenses Paperback – 31 January 2017 by Sinha Rajesh (Author)</li> <li>2. Contact Lens Primer Paperback – 1 January 2007 by Chaudhry (Author)</li> <li>3. Contact Lenses Hardcover – 25 September 2006 by Anthony J.</li> </ol>
<b>Reference books</b>	<ol style="list-style-type: none"> <li>1. Clinical Manual of Contact Lenses Paperback – 1 December 1999 by Edward S. Bennett (Author), Vinita Allee Henry (Author)</li> <li>2. Contact Lens Fitting Guide Paperback – 1 January 2020 by Ajay Kumar Bhootra (Author)</li> <li>3. Contact Lens Complications: Expert Consult - Online and Print Hardcover – 6 August 2012 by Nathan Efron</li> </ol>

<b>Course Title</b>	<b>MAJOR EYE DISEASES</b>			
<b>Course Code</b>	SBS07504T			
<b>Course Credits</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Total</b>
	<b>4</b>			<b>4</b>
<b>Prerequisites</b>	<b>Qualified B.Sc Optometry Semester-III</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>	<p><b>UNIT-I</b> GLAUCOMA: An over view of glaucoma, Aqueous humor dynamics, Intraocular pressure.</p> <p><b>UNIT-II</b> Evaluation of the optic nerve head, Visual fields, Glaucoma screening.</p> <p><b>UNIT-III</b> Classification of glaucoma, Primary open angle glaucoma, Primary angle closure glaucoma, Primary congenital glaucoma, Secondary glaucoma.</p> <p><b>UNIT-IV</b> Principles of medical therapy, Other modalities of glaucoma treatment, HRT, OCT, GDx.</p>			





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	<b>UNIT-V</b> Refractive Surgeries, LASERS.
<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>

<b>Course Title</b>	<b>LAB COURSE XIII: LOW VISION AIDS</b>			
<b>Course Code</b>	SBS07591P			
<b>Course Credits</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>TC</b>
	2			2
<b>Course Contents</b>	<ul style="list-style-type: none"> <li>- Assesment of low vision in children–Multiple disabilities, Introduction Observation – Posture –Appearance, Mobility.</li> <li>- The Record Card Visual History – Diagnosis –Etiology Onset – Management –Family History - Vocation – Visual Demands – Leisure Activities Aids.</li> <li>- Examination Retinoscopy – Refraction.</li> <li>- Keratometry.</li> <li>- Binocular testing - Motor alignment–Fusion Measurement of visual acuity Different systems of measuring acuity Optotypes in decimal steps - Logarithmic steps – Gratings.</li> <li>- Contrast Sensitivity, Measuring contrast sensitivity – Charts: Bailey, Pelli Robson, and Cambridge Lea Symbols.</li> <li>- Visual Fields: Confrontation – Amsler grid - Tangent Screen – Perimetry, Color Vision: Defects – Tests.</li> <li>- Ophthalmoscopy Magnification: -Magnification by approach, Angular Magnification, Projection Magnification, Relative Size Magnification, Relative Distance Magnification.</li> <li>- Telescope: Telescope – Galilean – Keplerian Calculation of magnification Considerations of prescribing Types of telescopes – Hand held Clip on – Spectacle mounted.</li> </ul>			



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	- Hand and Stand Magnifiers Optics – Range of magnification- Specifications Spectacle magnifiers.
<b>Text books</b>	1. Low Vision Aids Paperback – 1 January 2010 by Chaudhry (Author) 2. Low Vision Aids Practice Paperback – 1 January 2007 by Bhootra (Author)
<b>Reference books</b>	1. Management Of Vision Impairment( Low Vision, Vision Enhancement And Vision Rehabilitation) Paperback – 1 January 2010 by Ms Raju (Author) 2. Physical Rehabilitation Paperback – 1 January 2014 by O'SULLIVAN (Author) 3. Physical Rehabilitation 6e (O'Sullivan, Physical Rehabilitation) (Old Edition) Hardcover – 1 July 2013

<b>Course Title</b>	<b>LAB COURSE XIV: CONTACT LENSES</b>				
<b>Course Code</b>	SBS07592P				
<b>Course Credits</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>TC</b>	
			<b>2</b>	<b>2</b>	
<b>Course Contents</b>	<ul style="list-style-type: none"> <li>- Contact lens materials – RGP and Soft.</li> <li>- Keratometry.</li> <li>- Corneal Topography.</li> <li>- Slit Lamp Techniques.</li> <li>- Fitting in astigmatism.</li> <li>- Fitting in Keratoconus.</li> <li>- RGP Bifocals &amp; fitting in Presbyopes.</li> <li>- Insertion – removal techniques of CL.</li> <li>- Fitting of contact lenses in children.</li> <li>- Cosmetic contact lenses.</li> <li>- Contact lens –Toric SCL.</li> <li>- Contact lens –bifocals, Multifocals.</li> <li>- Therapeutic lenses/ bandage contact lenses.</li> </ul>				
<b>Text books</b>	1. Textbook Of Contact Lenses Paperback – 31 January 2017 by Sinha Rajesh (Author)				



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	<ol style="list-style-type: none"><li>2. Contact Lens Primer Paperback – 1 January 2007 by Chaudhry (Author)</li><li>3. Contact Lenses Hardcover – 25 September 2006 by Anthony J.</li></ol>
<b>Reference books</b>	<ol style="list-style-type: none"><li>1. Clinical Manual of Contact Lenses Paperback – 1 December 1999 by Edward S. Bennett (Author), Vinita Allee Henry (Author)</li><li>2. Contact Lens Fitting Guide Paperback – 1 January 2020 by Ajay Kumar Bhootra (Author)</li><li>3. Contact Lens Complications: Expert Consult - Online and Print Hardcover – 6 August 2012 by Nathan Efron</li></ol>