



**INTEGRAL UNIVERSITY, LUCKNOW**  
**INTEGRAL INSTITUTE OF ALLIED HEALTH SCIENCES & RESEARCH**

**DEPARTMENT OF PARAMEDICAL SCIENCES**

**BACHELOR OF OPTOMETRY  
(B.OPTOM)**

**SYLLABUS**

**YEAR/ SEMESTER: III/V**



Integral University, Lucknow  
Department of Paramedical Sciences  
Study and Evaluation Scheme

Program: BOPT

Semester-V

S. N.	Course code	Course Title	Type of Paper	Period Per hr/week/sem			Evaluation Scheme				Sub. Total	Credit	Total Credits
				L	T	P	CT	TA	Total	ESE			
<b>THEORIES</b>													
1	BO301	Contact Lens - I	Core	3	1	0	40	20	60	40	100	3:1:0	4
2	BO302	Geriatric Optometry & Pediatric Optometry	Core	3	1	0	40	20	60	40	100	3:1:0	4
3	BO303	Binocular Vision - I	Core	3	1	0	40	20	60	40	100	3:1:0	4
4	BO304	Systemic Disease & the Eye	Core	3	1	0	40	20	60	40	100	3:1:0	4
5	BO305	Occupational & Community Optometry	Core	3	1	0	40	20	60	40	100	3:1:0	4
<b>PRACTICAL</b>													
1	BO306	Contact Lens -Lab	Core	0	0	2	40	20	60	40	100	0:0:1	1
2	BO307	Geriatric Optometry & Pediatric Optometry-Lab	Core	0	0	2	40	20	60	40	100	0:0:1	1
3	BO308	Hospital Posting	Core	0	0	6	40	20	60	40	100	0:0:3	3
<b>Total</b>				<b>15</b>	<b>05</b>	<b>10</b>	<b>320</b>	<b>160</b>	<b>480</b>	<b>320</b>	<b>800</b>	<b>25</b>	<b>25</b>

S. N.	Course code	Course Title	Type of Paper	Attributes						United Nation Sustainable Development Goal (SDGs)	
				Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value		Professional Ethics
<b>THEORIES</b>											
1	BO301	Contact Lens - I	Core	√	√	√	√		√	√	3,4
2	BO302	Geriatric Optometry & Pediatric Optometry	Core	√	√	√	√		√	√	3,4
3	BO303	Binocular Vision - I	Core	√	√	√	√		√	√	3,4
4	BO304	Systemic Disease & the Eye	Core	√	√	√	√		√	√	3,4
5	BO305	Occupational & Community Optometry	Core	√	√	√	√		√	√	3,4
<b>PRACTICAL</b>											
1	BO306	Contact Lens -Lab	Core	√	√	√	√		√	√	3,4
2	BO307	Geriatric Optometry & Pediatric Optometry-Lab	Core	√	√	√	√		√	√	3,4
3	BO308	Hospital Posting	Core	√	√	√	√		√	√	3,4

**L:** Lecture      **T:** Tutorials      **P:** Practical      **CT:** Class Test      **TA:** Teacher Assessment      **ESE:** End Semester Examination,  
**AE=** Ability enhancement, **DSE-** Discipline Specific Elective, **Sessional Total:** Class Test + Teacher Assessment      **Subject Total:** Sessional Total + End Semester Examination (ESE)



## Integral University, Lucknow

<b>Effective from Session: 2021-22</b>							
<b>Course Code</b>	BO301	<b>Title of the Course</b>	CONTACT LENS-I	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Year</b>	III	<b>Semester</b>	V	3	1	0	4
<b>Pre-Requisite</b>	Nil	<b>Co-requisite</b>	Nil				
<b>Course Objectives</b>	To enable the students to have knowledge in both theoretical and practical aspects of Contact Lenses.						

Course Outcomes	
<b>CO1</b>	Understanding about contact lens history, introduction, design & relation with structure of eye.
<b>CO2</b>	Understanding about RGP contact lens material & their property their parameter.
<b>CO3</b>	Understanding about RGP contact lens manufacturing techniques & fitting of RGP lenses.
<b>CO4</b>	Understanding and know about care maintenance and do's & don't of RG P contact lens.
<b>CO5</b>	Learn about complication and their management of RGP contact Lenses.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	<b>INTRODUCTION TO CONTACT LENSES</b>	Review of Anatomy & Physiology of Tear film, cornea, Definition of Contact lens & various Classification, Optics & design of RGP Contact Lenses, Vertex distance calculation.	8	CO1
2	<b>OPTICS OF CONTACT LENSES</b>	Introduction & types of RGP materials, Properties of various RGP materials- Physiological, Physical, Optical, Manufacturing technique of CL, Indication & contraindication of RGP, Selection of parameters of RGP, Effect of change in parameters of RGP.	8	CO2
3	<b>CONTACT LENS FITTING</b>	Insertion & removable of RGP, Pre-fitting evaluation, Fitting assessments (dynamic & static), Properties of Types of fit (steep, optimal, flat), Tear lens calculation, Calculation (SAM, FAP) & finalization of RGP, Calculation & finalization of RGP.	8	CO3
4	<b>CARE AND MAINTENANCE OF RIGID LENSES</b>	Common handling instruction, Do's & Don't of RGP, Care & maintenance of RGP a. cleaning b. disinfecting (one step & two step) c. MPS d. rinsing e. Protein removers	8	CO4
5	<b>PROPERTIES OF CONTACT LENSES</b>	Types of contact lens deposit, Complications: Inflammation & staining related, Oedema & Hypoxia related, Mechanical & pressure related, Management of Complications.	8	CO5

<b>Reference Books:</b>	
1.	Contact lens primer by Monica Chaudhary, Jaypee Brothers medical publishers (P) Ltd
2.	IACLE Contact lens modules.
3.	Contact lens primer by Monica Chaudhary, Jaypee Brothers medical publishers (P) Ltd.
<b>e-Learning Source:</b>	
1.	<a href="https://www.youtube.com/watch?v=ey7kpRQYao">https://www.youtube.com/watch?v=ey7kpRQYao</a>
2.	<a href="https://www.youtube.com/watch?v=wIPyYkq3LnY">https://www.youtube.com/watch?v=wIPyYkq3LnY</a>
3.	<a href="https://www.youtube.com/watch?v=w7skd-AA1PQ">https://www.youtube.com/watch?v=w7skd-AA1PQ</a>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO4	PSO5	PSO6	PSO7
	<b>CO1</b>	1	3	1	2	-	-	-	1	2	1	-	2	2	1	2	-	1
<b>CO2</b>	2	3	2	2	-	-	-	1	3	1	-	3	2	2	1	-	2	3
<b>CO3</b>	1	3	1	2	-	-	-	1	2	-	-	2	2	1	2	-	1	3
<b>CO4</b>	2	3	1	2	-	-	-	1	3	-	-	3	2	2	3	-	2	3
<b>CO5</b>	1	3	1	2	-	-	-	1	2	1	-	2	2	1	2	-	1	3

**1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation**

Attributes & SDGs

Course Code	Course Title	Attributes							SDGs No.
		Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	
BO301	CONTACT LENS-I	√	√	√			√	√	3,4









## Integral University, Lucknow

<b>Effective from Session: 2021-22</b>							
<b>Course Code</b>	<b>BO305</b>	<b>Title of the Course</b>	<b>OCCUPATIONAL &amp; COMMUNITY OPTOMETRY</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Year</b>	<b>III</b>	<b>Semester</b>	<b>V</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>4</b>
<b>Pre-Requisite</b>	<b>Nil</b>	<b>Co-requisite</b>	<b>Nil</b>				
<b>Course Objectives</b>	The objective of this course is to provide knowledge of general aspects of occupational health, Visual demand in various jobs, task analyzing method, visual standards for various jobs, occupational hazards and remedial aspects.						

Course Outcomes	
<b>CO1</b>	Understanding the role of various national and international bodies in guiding and maintaining standards of Visual Hygiene and framing various Acts and rules.
<b>CO2</b>	Understanding the effects of various occupational hazards on the eye and applying Optometric expertise to provide protective measures and eye gears.
<b>CO3</b>	Analyzing and applying various eye screening methods for various task job sand providing necessary eye protections and guidelines to avoid eyes train and fatigue.
<b>CO4</b>	Understanding the role of optometrist in public health and in various communities and school eye screening.
<b>CO5</b>	Having acknowledged about various eye program and screening procedures and analyzing the importance of teleophthalmology in the field of optometry.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	<b>OCCUPATIONAL HEALTH</b>	Introduction to Occupational health, hygiene and safety, international bodies like ILO, WHO, Factories Act, WCA, ESI Act.	8	CO1
2	<b>COMMUNITY STANDARDS</b>	<b>Electromagnetic Radiation</b> and its effects on Eye. Occupational hazards and preventive/protective methods. <b>Industrial Vision Screening</b> – Modified clinical method and Industrial Vision test, <b>Vision Standards</b> – Railways, Roadways, and Airlines. Visual Display Units	8	CO2
3	<b>COMMUNITY EYE CARE PROGRAMS</b>	Eye in primary health care, Community Eye Care Programs, Community based rehabilitation programs. Nutritional Blindness with reference to Vitamin A deficiency, Vision 2020: The Right to Sight, Screening for eye diseases, National and International health agencies, NPCB.	8	CO3
4	<b>OPTOMETRIST'S ROLE IN EYE HEALTH PROGRAMMES</b>	Role of an optometrist in Public Health, Organization and Management of Eye Care Programs – Service Delivery models, Eye Health man power and planning.	8	CO4
5	<b>TELE OPTOMETRY</b>	Optometrist's role in school eye health programs, Basics of Tele Optometry and its application in Public Health, Information. Education and Communication for Eye Care programs.	8	CO5

<b>Reference Books:</b>	
1. C Haslett, E R Chilvers, N A boon, N R Coledge, J A A Hunter: Davidson's Principles and Practice of Medicine, Ed. John Macleod, 19th Ed., ELBS/Churchill Livingstone. (PPM),2002.	
<b>*Latest editions of all the suggested books are recommended</b>	
2. Environmental and occupational Optometry by Gordon Carson	
<b>e-Learning Source:</b>	
1. <a href="https://www.youtube.com/watch?v=DlpZBSjkJuM">https://www.youtube.com/watch?v=DlpZBSjkJuM</a>	
2. <a href="https://www.youtube.com/watch?v=GX7vACR3nDU">https://www.youtube.com/watch?v=GX7vACR3nDU</a>	
3. <a href="https://www.youtube.com/watch?v=jwwOXILYQ4Q">https://www.youtube.com/watch?v=jwwOXILYQ4Q</a>	

PO-PSO CO	Course Articulation Matrix: (Mapping of COs with POs and PSOs)																
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
<b>CO1</b>	1	3	2	2	-	-	-	1	2	-	-	2	3	1	2	3	-
<b>CO2</b>	1	3	1	3	-	-	-	2	3	-	-	3	3	-	1	2	-
<b>CO3</b>	1	3	1	2	-	-	-	1	2	-	-	2	2	2	1	2	2
<b>CO4</b>	1	3	1	2	-	-	-	1	3	1	-	3	2	3	1	3	2
<b>CO5</b>	1	3	1	2	-	-	-	1	2	2	-	2	3	1	2	2	2

**1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation**  
Attributes & SDGs

Course Code	Course Title	Attributes							SDGs No.
		Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	
BO305	OCCUPATIONAL & COMMUNITY OPTOMETRY	√	√	√	√		√	√	3,4







**Integral University, Lucknow**

<b>Effective from Session: 2021-22</b>							
<b>Course Code</b>	<b>BO307</b>	<b>Title of the Course</b>	<b>GERIATRIC &amp; PEDIATRIC OPTOMETRY- LAB</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Year</b>	<b>III</b>	<b>Semester</b>	<b>V</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>1</b>
<b>Pre-Requisite</b>	<b>Nil</b>	<b>Co-requisite</b>	<b>Nil</b>				
<b>Course Objectives</b>	The objective of the course is to provide the students with the knowledge of general and ocular physiological changes of ageing, common geriatric systemic and ocular diseases, clinical approach of geriatric patients and spectacle dispensing aspects in ageing patients as well as the development of the eye and vision, vision assessment and management of vision disorder in pediatric patients.						

<b>Course Outcomes</b>	
<b>CO1</b>	Understanding the concept of structural and functional changes in elderly eye.
<b>CO2</b>	Understanding the concept of systemic diseases of geriatric and pediatric patients.
<b>CO3</b>	Applying concept of optometric Evaluation procedure in children and elderly patients.
<b>CO4</b>	Understanding the concept of ocular drainage and other mechanical systems in children and elderly patients.
<b>CO5</b>	Utilizing the concept of various optical and primarily medicated intervention and the therapeutic procedure in children and elderly patients.

<b>Unit No.</b>	<b>Title of the Unit</b>	<b>Content of Unit</b>	<b>Contact Hrs.</b>	<b>Mapped CO</b>
1.	Clinical Observation	1. Deals with hand-on session the different geriatric and pediatric evaluation techniques.	30	CO1,CO2,C03,CO4,CO5

- Pediatric Optometry –William Harvey/Bernard Gilmartin, Butterworth –Heinemann, 2004.
- OP Sharma: Geriatric Care–A text book of geriatrics and Gerontology, Viv books, NewDelhi,2005.
- VS Natarajan: An update on Geriatrics, Sakthi Pathipagam, Chennai,1998
- DE Rosenblatt, VS Natarajan: Primer on geriatric Care A clinical approach to the older patient, Printers Castle, Cochin,2002
- Binocular Vision and Ocular Motility-VON NOORDEN G K Burien Von Noorden’s, 2nd Ed., C.V. Mosby Co. St. Louis,1980
- Assessing Children’s Vision. By Susan J Leat, Rosalyn H Shute, Carol AWestall.45 Oxford: Butterworth-Heinemann,1999.
- Clinical pediatric optometry. LJ Press, BD Moore, Butter worth-Heinemann,1993.
- V S Natarajan: An update on Geriatrics, Sakthi Pathipagam, Chennai,1998
- Clinical pediatric optometry. LJ Press, B D Moore, Butterworth-Heinemann,1993

<b>e-Learning Source:</b>			
1.	<a href="https://www.youtube.com/watch?v=X7zRRpiazwE">https://www.youtube.com/watch?v=X7zRRpiazwE</a>		
2.	<a href="https://www.youtube.com/watch?v=IGW_D7YkRGs">https://www.youtube.com/watch?v=IGW_D7YkRGs</a>		
3.	<a href="https://www.youtube.com/watch?v=IS4os7obS0s">https://www.youtube.com/watch?v=IS4os7obS0s</a>		

<b>Course Articulation Matrix: (Mapping of COs with POs and PSOs)</b>																	
<b>PO-PSO CO</b>	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
<b>CO1</b>	1	3	1	2	-	-	-	1	2	1	-	2	-	1	2	-	3
<b>CO2</b>	2	3	2	2	-	-	-	1	3	1	-	3	-	2	1	-	2
<b>CO3</b>	1	3	1	2	-	-	-	1	2	-	-	2	-	1	2	-	3
<b>CO4</b>	2	3	1	2	-	-	-	1	3	-	-	3	-	2	3	-	3
<b>CO5</b>	1	3	1	2	-	-	-	1	2	1	-	2	-	1	2	-	3

**1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation**

		<b>Attributes &amp; SDGs</b>							<b>SDGs No.</b>
<b>Course Code</b>	<b>Course Title</b>	<b>Attributes</b>							
BO307	GERIATRIC & PEDIATRIC OPTOMETRY- LAB	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	3,4
		√	√	√	√		√	√	





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**BACHELOR OF OPTOMETRY**  
**(B.OPTOM)**

**SYLLABUS**

**YEAR/ SEMESTER: III/VI**



Integral University, Lucknow  
Department of Paramedical Sciences  
Study and Evaluation Scheme

Program: BOPT

Semester-VI

S. N.	Course code	Course Title	Type of Paper	Period Per hr/week/sem			Evaluation Scheme				Sub. Total	Credit	Total Credits
				L	T	P	CT	TA	Total	ESE			
<b>THEORIES</b>													
1	BO309	Contact Lens –II	Core	3	1	0	40	20	60	40	100	31:0	4
2	BO310	Binocular Vision –II	Core	3	1	0	40	20	60	40	100	3:1:0	4
3	BO311	Practice Management	Core	3	1	0	40	20	60	40	100	3:1:0	4
4	BO312	Research Methodology & Biostatistics	Core	2	1	0	40	20	60	40	100	2:1:0	3
<b>PRACTICAL</b>													
1	BO313	Contact Lens –II Lab	Core	0	0	2	40	20	60	40	100	0:0:1	1
2	BO314	Binocular Vision – II Lab	Core	0	0	2	40	20	60	40	100	0:0:1	1
3	BO315	Research Project Proposal Lab	Core	0	0	2	40	20	60	40	100	0:0:1	1
4	BO316	Hospital Posting	Core	0	0	8	40	20	60	40	100	0:0:4	4
<b>Total</b>				<b>11</b>	<b>04</b>	<b>14</b>	<b>320</b>	<b>160</b>	<b>480</b>	<b>320</b>	<b>800</b>	<b>22</b>	<b>22</b>

S. N.	Course code	Course Title	Type of Paper	Attributes							United Nation Sustainable Development Goal (SDGs)
				Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	
<b>THEORIES</b>											
1	BO309	Contact Lens – II	Core	√	√	√	√		√	√	3,4
2	BO310	Binocular Vision – II	Core	√	√	√	√		√	√	3,4
3	BO311	Practice Management	Core	√	√	√	√		√	√	3,4
4	BO312	Research Methodology & Biostatistics	Core	√	√	√	√		√	√	3,4
<b>PRACTICAL</b>											
1	BO313	Contact Lens II–Lab	Core	√	√	√	√		√	√	3,4
2	BO314	Binocular Vision – II Lab	Core	√	√	√	√		√	√	3,4
3	BO315	Research Project Proposal-Lab	Core	√	√	√	√		√	√	3,4
4	BO316	Hospital Posting	Core	√	√	√	√		√	√	3,4

**L:** Lecture      **T:** Tutorials      **P:** Practical      **CT:** Class Test      **TA:** Teacher Assessment      **ESE:** End Semester Examination,  
E= Ability enhancement, DSE- Discipline Specific Elective, **Sessional Total:** Class Test + Teacher Assessment      **Subject Total:** Sessional Total + End Semester Examination (ESE)







## Integral University, Lucknow

<b>Effective from Session: 2021-22</b>							
<b>Course Code</b>	<b>BO311</b>	<b>Title of the Course</b>	<b>PRACTICE MANAGEMENT</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Year</b>	<b>III</b>	<b>Semester</b>	<b>VI</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>4</b>
<b>Pre-Requisite</b>	<b>Nil</b>	<b>Co-requisite</b>	<b>Nil</b>				
<b>Course Objectives</b>	The objective of this course is to provide knowledge regarding business, accounting, taxation, professional values, and quality and safety aspects of optometry practice management.						

Course Outcomes	
<b>CO1</b>	Understanding the concepts of Business Management and Practice Establishment.
<b>CO2</b>	Analyzing and Applying various aspects of Stocking, staffing and business Computerization in running an Optometry Clinic, Optical outlet or business.
<b>CO3</b>	Understanding, Analyzing and Applying various aspects of Taxation and Taxation Planning.
<b>CO4</b>	Applying professional values, ethics and Confidentiality in the workplace establishment.
<b>CO5</b>	Understanding, Analyzing and Applying various aspects of professionalism, integrity, objectivity, personal values, teamwork, etc in running a business efficiently.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	<b>BUSINESS MANAGEMENT</b>	Business Management: Practice establishment and development, Stock control and costing, Staffing and staff relations, Business computerization.	8	CO1
2	<b>ACCOUNTING</b>	Accounting Principles, Sources of finance, Bookkeeping, and cashflow.	8	CO2
3	<b>TAXATION</b>	Taxation and taxation planning.	8	CO3
4	<b>PROFESSIONAL VALUES</b>	Professionalism and Values, Professional values- Integrity, Objectivity, Professional competence and due care, Confidentiality.	8	CO4
5	<b>PERSONAL VALUES</b>	Personal values- ethical or moral values, Attitude and behavior- professional behavior, treating people equally, Code of conduct, professional accountability and responsibility, misconduct, Differences between professions and importance of team efforts, Cultural issues in the healthcare environment.	8	CO5

**Reference Books:**

Faculty to recommend

**\* Latest editions of all the suggested books are recommended**

**e-Learning Source:**

- <https://www.youtube.com/watch?v=V0GQsYeirb0>
- <https://www.youtube.com/watch?v=mKJDPkd6Z0o>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																	
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
<b>CO1</b>	2	3	-	2	1	-	-	-	1	1	-	1	2	1	3	2	1
<b>CO2</b>	1	3	-	2	-	-	-	-	1	-	-	1	2	1	3	2	1
<b>CO3</b>	2	3	-	2	-	-	-	-	1	1	-	1	2	1	3	2	1
<b>CO4</b>	1	3	-	1	-	-	-	-	1	-	-	1	2	1	3	2	1
<b>CO5</b>	2	3	-	1	-	-	-	-	1	-	-	1	2	1	3	2	1

**1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation**

**Attributes & SDGs**

Course Code	Course Title	Attributes						SDGs No.
		Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	
BO311	PRACTICE MANAGEMENT	√	√	√	√	√	√	3,4



## Integral University, Lucknow

<b>Effective from Session: 2021-22</b>							
<b>Course Code</b>	<b>BO312</b>	<b>Title of the Course</b>	<b>RESEARCH METHODOLOGY &amp; BIostatISTICS</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Year</b>	<b>III</b>	<b>Semester</b>	<b>VI</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>3</b>
<b>Pre-Requisite</b>	<b>Nil</b>	<b>Co-requisite</b>	<b>Nil</b>				
<b>Course Objectives</b>	The objective of this module is to help the students understand the basic principles of research and methods applied to draw inferences from the research findings. The students will also be made aware of the need of biostatistics and understanding of data, sampling methods, in addition to being given information about the relation between data and variables.						

Course Outcomes	
<b>CO1</b>	Apply the principles of research and biostatistics to health practice including the design and implementation of health-related research studies.
<b>CO2</b>	Plan and execute a research study, including clinical trials.
<b>CO3</b>	Use / organize bio-statistical analysis using computers and software's and prepare reports.
<b>CO4</b>	Critically evaluate research activities.
<b>CO5</b>	Make recommendations on policy and procedures. Plan and conduct an educational session.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	<b>RESEARCH METHODOLOGY &amp; DESIGN</b>	Research Methodology: Introduction to research methods, identifying research problem. Ethical issues in research- Research design, Basic Concepts of Biostatistics.	6	CO1
2	<b>DATA TYPES</b>	Types of Data- Research tools and Data collection methods, sampling methods, Developing a research proposal.	6	CO2
3	<b>BIostatISTICS</b>	1. Biostatistics: Need of biostatistics, what is biostatistics: beyond definition, understanding of data in biostatistics, how & where to get relevant data, Relation between data & variables. 2. Type of variables: defining data set, Collection of relevant data: sampling methods.	6	CO3
4	<b>INTERPRETATION</b>	Normal Distribution, Standard deviation, Standard errors. Coefficient of Variation, t-test, Chi square test.	6	CO4
5	<b>STATISTICAL ANALYSIS</b>	1. Construction of study: population, sample, normality and its beyond (not design of study, perhaps), Summarizing data on the pretext of underlined study. 2. Understanding of statistical analysis (not methods)	6	CO5

- Reference Books:**
1. Statistical Methods by S.P. Gupta.
  2. Methods in biostatistics for medical students by B.K.Mahajan.
  3. RPG Biostatistics by Himanshu Tyagi.

- e-Learning Source:**
1. [https://www.youtube.com/watch?v=UtiVXLO7c9A&list=PLR3kIPR1Qzzky45nZ4\\_1HIUCbjVNU0iZx](https://www.youtube.com/watch?v=UtiVXLO7c9A&list=PLR3kIPR1Qzzky45nZ4_1HIUCbjVNU0iZx)
  2. [https://www.youtube.com/watch?v=txIS0N019xU&list=PLEIbY8S8u\\_DK7i4Fj6Hggq8sn\\_142k9H1L](https://www.youtube.com/watch?v=txIS0N019xU&list=PLEIbY8S8u_DK7i4Fj6Hggq8sn_142k9H1L)
  3. <https://www.youtube.com/watch?v=tr8M7jSIYm4>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																	
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
<b>CO1</b>	2	-	-	1	-	3	3	2	2	-	2	2	-	-	-	-	1
<b>CO2</b>	2	-	-	2	-	3	2	2	1	-	2	3	-	-	-	-	2
<b>CO3</b>	2	-	-	1	-	3	3	1	2	-	1	2	-	-	-	-	1
<b>CO4</b>	2	-	-	1	-	3	3	2	1	-	2	3	-	-	-	-	1
<b>CO5</b>	2	-	-	2	-	3	2	2	1	-	2	2	-	-	-	-	1

**1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation**

**Attributes & SDGs**

Course Code	Course Title	Attributes							SDGs No.
		Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	
BO313	RESEARCH METHODOLOGY & BIostatISTICS	√	√	√	√		√	√	3,4





## Integral University, Lucknow

**Effective from Session: 2021-22**

<b>Course Code</b>	<b>BO313</b>	<b>Title of the Course</b>	<b>CONTACT LENS- II LAB</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Year</b>	<b>III</b>	<b>Semester</b>	<b>VI</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>1</b>
<b>Pre-Requisite</b>	<b>Nil</b>	<b>Co-requisite</b>	<b>Nil</b>				
<b>Course Objectives</b>	To enable the students to have knowledge in both theoretical and practical aspects of Contact Lenses.						

### Course Outcomes

<b>CO1</b>	Understanding about soft contact lens material & their property, selection of parameter
<b>CO2</b>	Understanding about soft contact lens fitting characteristics and evaluation of fitting
<b>CO3</b>	Understanding about toric soft contact lens, stabilization techniques and application
<b>CO4</b>	Learn about complication and their management of soft contact lenses
<b>CO5</b>	Understanding about specialty contact lenses

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	<b>EXAMINATION</b>	1. Examination of old soft Lens	6	CO1
2	<b>RGP CL FITTING</b>	2. RGP Lens fitting 3. RGP Lens Fit Assessment and fluorescein pattern 4. Special RGP fitting (Aphakia, pseudo phakia Keratoconus)	6	CO2
3	<b>RGP ASSESSMENT</b>	5. RGP over refraction and Lens flexure 6. Examination of old RGP Lens 7. RGP Lens parameters 8. Fitting Cosmetic Contact Lens 9. Slit lamp examination of Contact Lens wearers	6	CO3
4	<b>TORIC CL</b>	10. Fitting Toric Contact Lens	6	CO4
5	<b>SPECIAL CL</b>	11. Bandage Contact Lens 12. SPM & Pachymetry at SN During Clinics • Specialty Contact Lens fitting (at SN during clinics)	6	CO5

#### Reference Books:

1. Contact lens primer by Monica Chaudhary, Jaypee Brothers medical publishers (P) Ltd
2. IACLE Contact lens modules.
3. Contact lens primer by Monica Chaudhary, Jaypee Brothers medical publishers (P) Ltd.

#### e-Learning Source:

1. <https://www.youtube.com/watch?v=ey7kpRQYao>
2. <https://www.youtube.com/watch?v=wIPyYkq3LnY>
3. <https://www.youtube.com/watch?v=w7skd-AA1PQ>

### Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
	<b>CO1</b>	-	-	-	-	-	2	-	2	-	-	-	2	-	-	-	-
<b>CO2</b>	-	-	-	-	-	2	-	-	-	-	-	2	-	-	-	-	-
<b>CO3</b>	-	-	-	-	-	2	-	1	-	1	-	2	-	-	-	-	-
<b>CO4</b>	-	-	-	-	-	2	2	-	-	-	-	2	-	-	-	-	-
<b>CO5</b>	-	-	-	-	-	2	1	1	-	-	1	2	-	-	-	1	1

**1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation**

#### Attributes & SDGs

Course Code	Course Title	Attributes							SDGs No.
		Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	
BO313	CONTACT LENS- II LAB			√					<b>3,4, 11</b>





## Integral University, Lucknow

<b>Effective from Session: 2021-22</b>							
<b>Course Code</b>	<b>BO315</b>	<b>Title of the Course</b>	<b>RESEARCH PROJECT PROPOSAL- LAB</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Year</b>	<b>III</b>	<b>Semester</b>	<b>VI</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>1</b>
<b>Pre-Requisite</b>	<b>Nil</b>	<b>Co-requisite</b>	<b>Nil</b>				
<b>Course Objectives</b>	The objective of this module is to help the students understand the basic principles of research and methods applied to draw inferences from the research findings. The students will also be made aware of the need of biostatistics and understanding of data, sampling methods, in addition to being given information about the relation between data and variables.						

<b>Course Outcomes</b>	
<b>CO1</b>	Apply the principles of research and biostatistics to health practice including the design and implementation of health-related research studies.
<b>CO2</b>	Plan and execute a research study, including clinical trials.
<b>CO3</b>	Use / organize bio-statistical analysis using computers and software's and prepare reports.
<b>CO4</b>	Critically evaluate research activities.
<b>CO5</b>	Make recommendations on policy and procedures. Plan and conduct an educational session.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	<b>Data</b>	1. Team of students will be doing a research project under the guidance of a supervisor (who could be optometrists/vision scientists/ ophthalmologist). Student will get the experience of doing research in systematic approach – identifying the primary question, literature search, identifying the gaps in the literature, identifying the research question, writing up the research proposal, data collection, data analysis, thesis writing and presentation.	15	CO1, CO2, CO3
2	<b>Project</b>	2. Project is spread through sixth to eighth semester.	15	CO4, CO5

<b>Reference Books:</b>	
1.	Statistical Methods by S.P. Gupta.
2.	Methods in biostatistics for medical students by B.K.Mahajan.
3.	RPG Biostatistics by Himanshu Tyagi.
<b>e-Learning Source:</b>	
4.	<a href="https://www.youtube.com/watch?v=UtiVXLO7c9A&amp;list=PLR3kiPR1Qzzky45nZ4_1HIUCbjVNU0iZx">https://www.youtube.com/watch?v=UtiVXLO7c9A&amp;list=PLR3kiPR1Qzzky45nZ4_1HIUCbjVNU0iZx</a>
5.	<a href="https://www.youtube.com/watch?v=txIS0N019xU&amp;list=PLEIbY8S8u_DK7i4Fj6Hgg8sn_J42k9H1L">https://www.youtube.com/watch?v=txIS0N019xU&amp;list=PLEIbY8S8u_DK7i4Fj6Hgg8sn_J42k9H1L</a>
6.	<a href="https://www.youtube.com/watch?v=tr8M7jSIYm4">https://www.youtube.com/watch?v=tr8M7jSIYm4</a>

<b>Course Articulation Matrix: (Mapping of COs with POs and PSOs)</b>																	
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
<b>CO1</b>	1	3	1	2	-	-	-	1	2	-	-	2	2	1	-	1	1
<b>CO2</b>	1	3	1	3	-	-	-	1	3	-	-	3	3	2	-	1	1
<b>CO3</b>	1	3	1	2	-	-	-	1	2	-	-	2	3	1	-	1	1
<b>CO4</b>	1	3	1	2	-	-	-	1	3	-	-	3	2	1	-	1	1
<b>CO5</b>	1	3	1	2	-	-	-	1	2	-	-	2	2	1	-	1	1

**1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation**

<b>Attributes &amp; SDGs</b>		<b>Attributes</b>							<b>SDGs No.</b>
Course Code	Course Title	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	
BO315	RESEARCH PROJECT PROPOSAL- LAB	√	√	√	√		√	√	<b>3,4</b>



## Integral University, Lucknow

<b>Effective from Session: 2021-22</b>							
<b>Course Code</b>	<b>BO316</b>	<b>Title of the Course</b>	<b>HOSPITAL POSTING LAB</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Year</b>	<b>III</b>	<b>Semester</b>	<b>VI</b>	0	0	8	4
<b>Pre-Requisite</b>	<b>Nil</b>	<b>Co-requisite</b>	<b>Nil</b>				
<b>Course Objectives</b>	The objective of this course is to inculcate the student with the knowledge of different types, its etiology, clinical features, necessary Optometry investigations and management.						

Course Outcomes	
<b>CO1</b>	Analysing the relation between Binocular Single Vision and Various law of Ocular motility.
<b>CO2</b>	Applying professional values, ethics and Confidentiality in the workplace establishment.
<b>CO3</b>	Learn about complication and their management of soft contact lenses
<b>CO4</b>	Understanding the mechanism of Ocular movement & position of gaze.
<b>CO5</b>	Analyzing the relation between Binocular Single Vision and Various law of Ocular motility.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	<b>CLINICAL POSTING</b>	The course is the final series of five directed clinical courses. The student will complete the clinical training by practicing all the skills learned in classroom and clinical instruction. Practical aspects of Binocular vision II, public health & community optometry, and occupational optometry will be covered under the studentship.	80	CO1, CO2, CO3, CO4, CO5

**Reference Books:**

1. Gunter K. Von Noorden: BURIAN- VON NOORDEN'S Binocular vision and ocular motility theory and management of strabismus, Missouri, Second edition, 1980, C. V. Mosby Company.
2. Contact lens primer by Monica Chaudhary, Jaypee Brothers medical publishers (P) Ltd
3. IACLE Contact lens modules.

**e-Learning Source:**

1. [https://www.youtube.com/watch?v=UtiVXLO7c9A&list=PLR3kIPR1Qzky45nZ4\\_1HIUCbjVNU0iZx](https://www.youtube.com/watch?v=UtiVXLO7c9A&list=PLR3kIPR1Qzky45nZ4_1HIUCbjVNU0iZx)
2. [https://www.youtube.com/watch?v=txIS0N019xU&list=PLEIbY8S8u\\_DK7i4Fj6Hgg8sn\\_l42k9H1L](https://www.youtube.com/watch?v=txIS0N019xU&list=PLEIbY8S8u_DK7i4Fj6Hgg8sn_l42k9H1L)
3. <https://www.youtube.com/watch?v=tr8M7jSlYm4>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																	
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
<b>CO1</b>	1	3	1	2	-	-	-	1	2	-	-	2	2	1	-	1	1
<b>CO2</b>	1	3	1	3	-	-	-	1	3	-	-	3	3	2	-	1	1
<b>CO3</b>	1	3	1	2	-	-	-	1	2	-	-	2	3	1	-	1	1
<b>CO4</b>	1	3	1	2	-	-	-	1	3	-	-	3	2	1	-	1	1
<b>CO5</b>	1	3	1	2	-	-	-	1	2	-	-	2	2	1	-	1	1

**1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation**

**Attributes & SDGs**

Course Code	Course Title	Attributes							SDGs No.
BO316	HOSPITAL POSTING LAB	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	3,4
		√	√	√	√		√	√	