

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

## **DEPARTMENT OF PARAMEDICAL SCIENCES**

M.Sc Optometry (M.OPTOM)

**SYLLABUS** 

YEAR/ SEMESTER: I/I



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

Program: MOPT Semeste													ter-I
S. N.	Course	Course Title	Type of Paper	Period P	er hr/wo	eek/sem	]	Evaluatio	n Scheme		Sub.	Credit	Total
	coue	Gourse Three	on upor	L	Т	Р	СТ	TA	Total	ESE	Total	Greune	creatts
					THEOR	IES	-			-		-	
1	M0501	Visual & Applied Optics	Core	3	1	0	40	20	60	40	100	3:1:0	4
2	M0502	Core	3	1	0	40	20	60	40	100	3:1:0	4	
3	M0503	Research Methodology & Biostatistics	Core	3	1	0	40	20	60	40	100	3:1:0	4
4	M0504	Ocular Diseases and Diagnostics I	Core	3	1	0	40	20	60	40	100	3:1:0	4
					PRACTI	CAL							
1	M0505	Visual & Applied Optics- Lab	Core	0	0	2	40	20	60	40	100	0:0:1	1
2	M0506	Ocular Diseases and Diagnostics I - Lab	Core	0	0	2	40	20	60	40	100	0:0:1	1
3	M0507	Core	0	0	10	25	25	50	-	50	0:0:5	5	
		Total		12	4	14	265	145	410	240	650	23	23

S.	Course		Type Attributes								
N.	code	Course Title	of Paper	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	Development Goal (SDGs)
		THEORIES									
1	M0501	Visual & Applied Optics	Core			$\checkmark$	$\checkmark$			$\checkmark$	3,4
2	M0502	Epidemiology & Community Eye care	Core	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$		$\checkmark$	$\checkmark$	3,4
3	MO503 Research Methodology & Biostatistics		Core	$\checkmark$		$\checkmark$	$\checkmark$			$\checkmark$	3,4
4	M0504	Ocular Diseases and Diagnostics I	Core	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$		$\checkmark$	$\checkmark$	3,4
		PRACTICAL									
1	M0505	Visual & Applied Optics- Lab	Core	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$			$\checkmark$	3,4
2	MO506 Ocular Diseases and Diagnostics I - Lab		Core	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$		$\checkmark$	$\checkmark$	3,4
3	MO507 Clinic Posting- Lab			$\checkmark$							3,4

CT: Class Test L: Lecture T: Tutorials P: Practical AE= Ability enhancement, DSE- Discipline Specific Elective, Sessional Total: Class Test + Teacher Assessment

TA: Teacher Assessment ESE: End Semester Examination,

Subject Total: Sessional Total + End Semester Examination (ESE)



Effective from Session: 2022	2-23						
Course Code	MO501	Title of the Course	Visual & Applied Optics	L	Т	Р	С
Year	Ι	Semester	Ι	3	1	0	4
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	Upon comple eye. To gain refraction.	tion of the course, the st theoretical knowledge a	udent should be able: To understand the fundamentals of op nd practical skill on visual acuity measurement, objective an	tical c nd sub	ompone jective (	ents of t clinical	the

	Course Outcomes
CO1	Understanding the nature and properties of the Light and Mirror.
CO2	Understanding about the various optical constants of the eye in relation with physical properties of the eye.
CO3	Understanding the various aspects of vision and measuring visual acuity.
CO4	Having acknowledged about various optical defects of the eye.
CO5	Analyzing about various refractive anomalies of the eye.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Introduction to Optics of the Eye	Schematic and reduced eyes and their properties. Optical constants of the eye and their measurement. Purkinje images. Corneal curvature and thickness. Keratometry and pachymetry. Indices of aqueous and vitreous. Optical Defects of the Eye- Shape of Cornea, Shape & RI of the lens, Optical axis, Visual axis (angle alpha, Fixation axis (angle gamma), Aberration of the Optical system of eye, Depth of focus, Diffraction & resolving power.	8	CO1
2	Introduction to Refractive error and Accommodation	Emmetropia, Emmetropization and ametropia, Axial versus spherical ametropia, Theories of Myopia, Myopia control Prog. Accommodation- possible mechanism of accommodation-Schiener disc experiment- theories of accommodation- modern theory- changes in the lens during accommodation- the amplitude of accommodation- the measurement of the amplitude n of accommodation- depth of field, luminance, and blur tolerance- amplitude of accommodation versus age, Accomodative and vergence disorder. Presbyopia-near vision addition- estimate of addition-unequal near vision addition- effect of changing the spectacle distance – hypermetropia and accommodation.	8	CO2
3	Frame Material	Spectacle frame: Current frame materials- a) Plastics b) Metals Frame types: Combination of frames-Half-eye frames, Mounts, Nylon-cord frame, Special purpose frames. Frame measurements: The boxing system, The datum system, Comparison of the two systems, Lens position. Segment specification	8	CO3
4	Frame Selection	Frame Selection: Fashion, Function, Feel, Conflicting needs, Price, Standard alignment, Frame availability in Indian market Lens Selection: Ground rule for selection, Selection criteria, Facial Measurement, The PD, Visual axes, Measuring inter papillary distance using PD ruler, Common difficulties in measuring PDs, measuring monocular PD, Measuring near PD, Lenticular, Atoric, HI Index, Aspherical, Absorptive lenses, Coating Measuring heights: Single vision, Multi focal, bi-focal, Progressive	8	CO4
5	Pediatric Dispensing	Pediatric Dispensing: The changing image of spectacle, Age differences. Frame Selection- Technical Criteria, Fashion criteria, some tips on selection Lens Selection Technical Criteria-Communicating with kids, kids corner, Facial measurement of the kids-PDs, Centers, Bi-focals, Dealing with problems: Dealing with clients, Common client problems, dealing with professional colleagues, Dealing with the laboratories, Soft skills and professional communication with Patient and Customers. Special needs dispensing: Occupational dispensing, Hazards in the workplace, Occupational health safety legislation, Visual Ergonomics, Visual hygiene Sports and Industrial eye protection: Standards covering eye protection, Lens materials & impact resistance, Frame & eye protection.	8	CO5

#### **Reference Books:**

1. AHT Unna Cliffe: Visual optics, The Association of British Optician, 1987.

2. AG Bennett & RB Rabbets: Clinical Visual optics, 3rd edition, Butterworth Heinemann, 1998.

3. M P Keating: Geometric, Physical and Visual optics, 2nd edition, Butterworth- Heinemann, USA, 2002.

4. H L Rubin: Optics for clinicians, 2<sup>nd</sup> edition, Triad publishing company. Florida,1974.

5. H Obstfeld: Optic in Vision- Foundations of visual optics & associated computations, 2nd edition, Butterworth, UK, 1982

6. WJ Benjamin: Borich's clinical refraction, 2nd edition, Butterworth Heinemann, Missouri, USA, 2006.

7. T Grosvenor: Primary Care Optometry, 4thedition, Butterworth-Heinemann, USA, 2002.

e-Learning Source:

1.https://www.youtube.com/watch?v=-k4JO03tpGs

2. https://www.youtube.com/watch?v=oal-b6ep6KA

3. https://www.youtube.com/watch?v=wiYmTAuVimg

PO- PSO         PO1         PO2         PO3         PO4         PO5         PO6         PO7         PO8         PO9         PO10         PO11         PO12         PS01         PS02         PS04         PS05         PS05           CO         3         3         3         3         3         3         3         3         3         2         3         2         1         -         1           CO2         3         3         3         3         3         3         3         3         3         3         2         3         2         -         1         -         1           CO3         3         2         3         3         3         2         2         3         3         3         2         -         2           CO3         3         2         3			Course Articulation Matrix: (Mapping of COs with POs and PSOs)														
CO       3	PO- PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO4	PSO5
CO1       3       3       3       3       3       3       3       3       2       3       2       1       -       1         CO2       3       3       3       3       3       3       3       3       2       1       -       1       -       1         CO2       3       3       3       3       3       3       3       3       3       3       2       -       2         CO3       3       2       3       3       3       3       3       3       3       3       3       3       3       2       -       2         CO3       3       2       3       3       3       3       3       3       3       1       -       1         CO4       3 <th>CO</th> <th></th>	CO																
CO2       3	CO1	3	3	3	3	3	3	3	3	3	3	2	3	2	1	-	1
CO3       3       2       3       2       3       2       2       3       2       3       1       -       1         CO4       3       3       3       3       3       3       3       3       3       1       -       1         CO4       3       3       3       3       3       3       3       3       3       2       1       -       1         CO5       3       3       3       3       3       3       3       3       3       3       1       -       1	CO2	3	3	3	3	3	3	3	3	3	3	3	3	3	2	-	2
CO4         3         3         3         3         3         3         3         3         3         2         1         -         1	CO3	3	2	3	3	3	2	3	2	2	3	2	3	3	1	-	1
	CO4	3	3	3	3	3	3	3	3	3	3	3	3	2	1	-	1
	CO5	3	3	3	3	3	3	3	2	3	3	3	3	2	1	-	1

			11001100	00 00 00					
Course Code	Course Title			Att	ributes				SDGs
MO501	Visual & Applied	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	No.
	Optics	$\checkmark$							3,4



Effe	ctive from Session	: 2022-3	23										
Cou	rse Code	N	MO502	Title of the Course	Epidemiology & Community Eye care	, T	P C						
Yea	r		Ι	Semester	<u> </u>	1	0 4						
Pre-	Requisite		Nil	Co-requisite	Nil								
Cou	rse Objectives	The ol task a	bjective of this nalyzing meth	s course is to provide knov od, visual standards for va	vledge of general aspects of occupational health, Visual dema rious jobs, occupational hazards and remedial aspects.	nd in vario	us jobs,						
				Cou	urse Outcomes								
CO	Understanding t Acts and rules.	he role	of various nat	tional and international bo	dies in guiding and maintaining standards of Visual Hygiene	and framir	ng vari ous						
CO2	Understanding t gears.	he effe	cts of various	occupational hazards on the	he eye and applying Optometric expertise to provide protection	ve measure	es and eye						
CO3	Analyzing and a train and fatigue	applying 2.	g various eye s	screening methods for vari	ous task job sand providing necessary eye protections and gu	delines to a	avoid eyes						
CO4	Understanding t	he role	of optometrist	in public health and in vari	ious communities and school eye screening.								
COS	optometry.	ledged	about various	eye program and screeni	ng procedures and analyzing the importance of teleophthaln	ology in th	ne field of						
Unit No.	Title of the Un	it			Content of Unit	Contact Hrs.	Mapped CO						
			Prevalence,	incidence, and distributi	ion of visual impairment								
			Methodolog	у									
			Basics of Ep	idemiology study meth	ods								
1	Public healt	h	Types of stu	dy designs		8	CO1						
	concepts		Screening fo	r visual disorders									
			Childhood b	lindness									
			Refractive et	efractive errors and preshvonia									
			Age related	cataract		-							
			Low Vision	cataract									
2	Levels of preven	tion	Disbatia rati	nonothy		8	CO2						
			Glaucoma	nopany									
			Age related	Macular Degeneration		-							
2	Optometrists ro	le in	Vitamin A d	eficiency		0	<b>CO</b> 2						
3	community		Corneal and	external diseases		8	CO3						
			Prevention s	trategies									
			Concept of H	Health and Disease									
4	Fnidemiolog	<b>TX</b> 7	Principles of	Epidemiology and Epi	demiological Methods	8	CO4						
-	Epidemiolog	5J	Screening for	or eye disease, refract	ive errors, low vision cataract, diabetic retinopathy	0	001						
			glaucoma, A	mblyopia squint.									
			Health Infor	mation and Basic Medio	cal Statistics								
5	Health system	15	Communicat	tion for Health Education	Dn	8	C05						
C	i i cuitii system		Health Planr	ning and Management		0	000						
			Health care	of community									
Refe	erence Books:	N	A.1			1 104 5	1						
1. C	E Haslett, E R Chilv ELBS/Churchill Liv	ingston	A boon, N R C ne. (PPM),2002	Coledge, J A A Hunter: Da 2.	widson's Principles and Practice of Medicine, Ed. John Macle	od, 19th Ed	l.,						
*	Latest editions of a	all the s	suggested boo	ks are recommended									
2. Ei	nvironmental and or	ccupatio	onal Optometr	y by Gordon Carson									
e-1	https://www.youtu	he com	/watch?v_Dla	7RSikIuM									
2.	https://www.youtu	be.com	/watch?v=GX	7vACR3nDU									
3.	https://www.youtu	be.com	/watch?v=jww	/OXILYQ4Q									
<u>2.</u> 3.	https://www.youtu	be.com	/watch?v=GX /watch?v=iww	VACKSNDU VOXILYO40									
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		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
CO1	1	3	1	2	-	-	-	1	2	-	-	2	2	1	-	1	-
CO2	1	3	1	3	-	-	-	1	3	-	-	3	3	2	-	2	-
CO3	1	3	1	2	-	-	-	1	2	-	-	2	3	1	-	1	-
CO4	1	3	1	2	-	-	-	1	3	-	-	3	2	1	-	1	-
CO5	1	3	1	2	_	_	-	1	2	_	_	2	2	1	_	1	_

Course Code	Course Title			Att	ributes				SDGs
	Emidemiele av 9	Employability	Entropropourship	Skill	Gender	Environment &	Human	Professional	No.
MO502	Epidemiology &	Employability	Entrepreneursnip	Development	Equality	Sustainability	Value	Ethics	
	Community Eye care	√	$\checkmark$	$\checkmark$	√		√	$\checkmark$	3,4



Effective from Session: 2	Effective from Session: 2022-23												
Course Code	MO503	Title of the Course	<b>Research Methodology &amp; Biostatistics</b>	L	Т	Р	С						
Year	Ι	Semester	Ι	3	1	0	4						
Pre-Requisite	Nil	Co-requisite	Nil										
	The objective of	this module is to help th	e students understand the basic principles of research and m	ethods	applied	l to dra	w						
Course Objectives	inferences from t	from the research findings. The students will also be made aware of the need of biostatistics and understanding of											
	data, sampling m	ethods, in addition to be	ing given information about the relation between data and v	ariable	es.								

	Course Outcomes									
CO1	Apply the princi	ples of research and biostatistics to health practice including the design and implementation of healt tudies.	h-							
CO2	Plan and execute	e a research study, including clinical trials.								
CO3	Use / organize l	pio-statistical analysis using computers and software's and prepare reports.								
CO4	Critically evaluat	e research activities.								
CO5	Make recommen	dations on policy and procedures. Plan and conduct an educational session.								
Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO						
1	Introduction	Research Methodology – Definition of research, Characteristics of research, Steps involved in research process, Types of Research methods and methodology, Terminology used in quality control such as sensitivity, specificity, accuracy, precision, positive and negative predictive value	8	CO1						
2	Data Collection	Statistics, data, population, samples, parameters; Representation of Data: Tabular, Graphical, Measures of central tendency, Arithmetic mean, mode, median; Measures of dispersion, Range, mean deviation, variation, standard deviation, Standard error, Chi-square test	8	CO2						
3	Data Types	Introduction to statistics, Classification of data, source of data, method of scaling nominal, ordinal, ratio and interval scale, measuring reliability and validity of scales	8	CO3						
4	Sample	Measures of central tendency, measures of dispersion, skewness and kurtosis, sampling, sample size determination, concept of probability and probability distributions- binomial	8	CO4						
5	Statistics Analysis	Probability distribution, poison probability distribution and normal probability distribution Introduction and significance of Student's t-distribution: test for single mean, difference of means and paired t- test, F-distribution, one-way and two-way analysis of variance (ANOVA). Small sample test based on t-test, Z- test and F test; Confidence Interval; Distribution-free test	8	CO5						
Referen	nce Books:									
1. Stat	istical Methods by S	S.P. Gupta.								
2. Met	hods in biostatistics	tor medical students by B.K.Mahajan.								
3. KPC	J BIOSTATISTICS by H	imansnu i yagi.								
1 ht	ms://www.youtube	com/watch?v=UtivXI 07c9A&list=PI R3kIPR10zzkv45n74_1HIUChiVNU0i7v								
1. III 2 bt	ps.//www.youtube.	com/watch?v=tyIS0N010yIJ&list=PLFJK1K1V2S811DK7i/Fi6Hardsen_1/2k0H11								
2. III	ips.//www.youtube.o	Vini watch v - tx159/100/52/C&HSL-FLED 10500_DK/141/j0ngq0511_142K9111L								

3. https://www.youtube.com/watch?v=tr8M7jSlYm4

						Course	e Articu	lation I	Matrix: (	Mapping	of COs	with POs	and PSO	s)			
PO-PSO	PO1	PO2	PO3	PO4	PO5	POG	PO7	POS	POQ	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
СО	101	102	105	104	105	100	107	100	109	1010	1011	1012	1301	1302	1305	1304	1305
CO1	1	3	1	2	-	-	-	1	2	1	-	2	-	1	2	-	3
CO2	2	3	2	2	-	-	-	1	3	1	-	3	-	2	1	-	2
CO3	1	3	1	2	-	-	-	1	2	-	-	2	-	1	2	-	3
CO4	2	3	1	2	-	-	-	1	3	-	-	3	-	2	3	-	3
CO5	1	3	1	2	-	-	-	1	2	1	-	2	-	1	2	-	3

Course Code	Course Title		Attributes S												
MO503	Research Methodology	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	No.						
	& Biostatistics	$\checkmark$	$\checkmark$	√	√		$\checkmark$	$\checkmark$	3,4						



Effective from Sessi	on: 2022-23						
Course Code	MO504	Title of the Course	Ocular Diseases and Diagnostics I	L	Т	Р	С
Year	Ι	Semester	Ι	3	1	0	4
Pre-Requisite	Nil	Co-requisite	Nil				
	At the end of	the course the students will be	e knowledgeable in the following aspects of ocular diseases:	Etiolog	gy,		
<b>Course Objectives</b>	Epidemiology	y, Symptoms, Signs, Course se	equelae of ocular disease, Diagnostic approach and Managen	nent of	the oc	ılar	
•	diseases						

	Course Outcomes: After the successful course completion, learners will develop following attributes:
CO1	Understanding the concept of different Ocular diseases of anterior segment of Eye.
CO2	Applying the concept of anatomy & Physiology of Eye while understanding the Pathology of different ocular diseases.
CO3	Utilizing the concept of clinical features of the diseases for the differential diagnosis of the anterior segment diseases.
CO4	Understanding the optics and applying the basic functions and importance of examination of anterior segment.
CO5	Understanding and applying the various tools to measure ocular condition.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
		Refresher of anterior segment ocular diseases		
		Congenital anomalies		
		Inflammatory disorders		
1	Ocular Pathology	Degenerative conditions	8	CO1
1	Ocular 1 athology	Dystrophies	0	COI
		Structural Deformities		
		Oedema, Cysts and Tumors		
-		Refresher of glaucoma diagnosis and management	0	
2	Glaucoma		8	CO2
3	Anterior Segment	Pre and Post operative management of anterior segment diseases.	8	CO3
5	Management		Ũ	005
		Anterior segment Diagnostics		
4	Diagnostic	Tonometry	8	CO4
	Instrument I	HVF		
		Pentacam		
		Pachymetry		
		OCT		
5	Diagnostic	Gonioscopy	8	CO5
	Instrument II	Cataract evaluation		
		Slit Lamp		
Refere	ence Books:		1	1
1. P R	Yoder: Mounting Optics in	Optical Instruments, SPIE Society of Photo- Optical Instrumentation, 2002.		

G Smith, D A. Atchison: The Eye and Visual Optical Instruments, Cambridge University Press, 1997.
 Jack J. Kanski Clinical Ophthalmology: A Systematic Approach, 6th edition, Butterworth - Heinemann, 2007.

e-Learning Source:

1.https://www.youtube.com/watch?v=AdKxOOzlx4Q

2. https://www.youtube.com/watch?v=aeOXtaapoJI

3. https://www.youtube.com/watch?v=2XZ7y8UF5YI

					Cour	se Arti	culatio	n Matı	rix: (M	apping o	of COs v	vith POs	s and PS	Os)			
PO-PSO	DO1	DOJ	DO3		DO5	DOG	DO7	DOS	DOO	<b>DO10</b>	DO11	DO12	DSO1	DSOJ	DSO2		DSOS
CO	FOI	FO2	FUS	r04	FUS	FU0	FO/	FUo	F09	FOID	FOIT	FO12	F301	F302	1303	F304	F305
CO1	1	3	2	2	-	-	-	1	2	1	-	2	2	1	-	1	-
CO2	1	3	1	3	-	-	-	2	3	-	-	3	3	2	-	2	-
CO3	1	3	1	2	-	-	-	1	2	2	-	2	3	1	-	1	-
CO4	1	3	1	2	-	-	-	1	3	-	-	3	2	1	-	1	-
CO5	1	3	1	2	-	-	-	1	2	1	-	2	2	1	-	1	-

Course Code	Course Title			Att	ributes				SDGs
			Entropropourch	Skill	Gender	Environment	Huma	Professional	No.
	Ocular Diseases and	Employability	in	Developme	Equalit	&	n	Ethics	
MO504	Diagnostics I		ıp	nt	у	Sustainability	Value	Ethics	
	Diagnostics i	√	√	√	√		√	√	3,4



Effective from Session	: 2022-23												
Course Code	MO505	Title of the Course	Visual & Applied Optics Lab	L	Т	Р	С						
Year	Ι	Semester	Ι	0	0	2	1						
Pre-Requisite	Nil	Co-requisite	Nil										
Course Objectives	Upon completion o	completion of the course, the student should be able: To understand the fundamentals of optical components of the eye.											
Course Objectives	To gain theoretical knowledge and practical skill on visual acuity measurement, objective and subjective clinical refraction.												

	Course Outcomes
CO1	Understanding the nature and properties of the Light and Mirror.
CO2	Understanding about the various optical constants of the eye in relation with physical properties of the eye.
CO3	Understanding the various aspects of vision and measuring visual acuity.
CO4	Having acknowledged about various optical defects of the eye.
CO5	Analyzing about various refractive anomalies of the eye.

Unit No.	Tit	le of tl	he Unit							Conter	nt of Uni	t				0	Contact Hrs.	Mapped CO
				F	ind ou	t the m	eridian	ı & opt	tical ce	nter of	ophthalı	nic lens						
1	Net	utrali	zation	Ν	Veutrali	zation	– man	ual & l	help of	lensom	neter						4	CO1
2	D	Disper	nsing	I	dentific	cation	of lens-	-spheri	cal, cy	lindrica	l & sphe	ero-cylii	ndrical le	enses			4	CO2
3	Fra	ame ð	& Lens	F S	Lens-su Frame 1 ystems	urfacin neasur , Lens	g & ed ement: positic	ging, c The b	cutting poxing ment	& mark system sp	ting of sing of sing of sing of single structure structu	ingle vis um syst	sion bifo tem. Con	ocal prog mparisor	ressive	wo	4	CO3
4	Fra	me se	election	n F F U	Frame sel Lens sel Facial 1 sing P.	electio lection measur D rule	n: Fash : Groui ements	nion, fu nd rule s: The	for sel PD, V	lection, √isual a	dard alig selectio axes, &	gnment. n criteri measur	a. ring inte	r-pupilla	ary distan	ıce	4	CO4
5	Ocula	r Mea	surem	ent C C N	Commo C.D. Aeasuri	n diffi ing hei	culties ghts :-	in me single	easurin; vision	g P.D, , bifoca	Measuri ıl, multif	ng mon focal, pr	ocular l ogressiv	P.D, mea	asuring ne	ear	4	CO5
Refere	nce Boo	ks:																
1. AH	T Unna	Cliffe	: Visual	optics,	The As	sociatio	on of Bi	ritish O	ptician,	1987.								
2. AG	Bennett	t & RE	B Rabbe	ts: Clir	ical Vis	ual opt	ics, 3rd	edition	, Butter	worth H	Loinon	n, 1998.	A 2002					
3. MI 4 HI	Rubin	<u>g. Oec</u>	s for cli	nicians	$2^{nd}$ edi	tion Tr	jad nub	lishing	compai	iv Flori	da 1974	lailli, US	A, 2002.					
5. HC	Obstfeld:	Optic	in Visi	on- Fou	indatior	ns of vis	ual opti	ics & as	sociate	d compu	itations. 2	2nd editio	on. Butte	rworth. U	K.1982			
6. WJ	Benjam	in: Bo	rich's c	linical	refractio	on, 2nd	edition,	Butter	worth H	Ieinema	nn, Misso	ouri, USA	A, 2006.		,			
7. T C	Brosveno	r: Prin	nary Ca	re Opto	metry,	4thediti	on, But	terwort	h–Hein	emann,	USA, 20	02.						
e-Lea	arning S	ource	:	1.0	1.170													
1.https: 2.https:	://www.y	youtub	be.com/	watch?	$\frac{1}{1} = -k4JC}{1}$	03tpGs	5 A											
3. https	s://www. s://www.	voutu	be.com/	watch?	v=0a1-c v=wiYi	nTAuV	img											
						C		ntioulo	tion M	atnize (1	Ionning	of COa	with DO	and DS(	<b>J</b> a)			
PO-F	SO	DO 1	DCA	DCC	DC 1		DG f					Dett				Daca	Daoi	DCOT
C	0	POI	PO2	PO3	PO4	PO5	PO6	PO7	P08	PO9	PO10	POIL	PO12	PSOI	PSO2	PSO3	PSO4	PSO5
CO	01	1	3	2	2	-	-	-	1	2	-	-	2	3	1	2	3	-
CO	02	1	3	1	3	-	-	-	2	3	-	-	3	3	-	1	2	-
	03	1	3	1	$\frac{2}{2}$	-	-	-		2	- 1	-	2	2	2	1	2	2
	/-+	1	3	1	2	-	-	-	1	3	1	-	3	2	3	1	3	2

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

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Course Code	Course Title			Att	ributes				SDGs
MO505	Visual & Applied	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	No.
	Optics Lab	√	$\checkmark$	$\checkmark$	V		$\checkmark$	$\checkmark$	3,4

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CO5

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Effective from Session	<b>:</b> 2022-23										
Course Code	MO506	Title of the Course	Ocular Diseases and Diagnostics Lab	L	Т	Р	С				
Year	Ι	Semester	Ι	0	0	2	1				
Pre-Requisite	Nil	Co-requisite	Nil								
Course Objectives	At the end of Epidemiolog diseases.	of the course the students wi gy, Symptoms, Signs, Cours	Il be knowledgeable in the following aspects of ocular diseases: Etiol se sequelae of ocular disease, Diagnostic approach and Management	ogy, of the	ocula	ır					
Course Outcomes: After the successful course completion, learners will develop following attributes:											

CO1Understanding the concept of different Ocular diseases of anterior segment of Eye.CO2Applying the concept of anatomy & Physiology of Eye while understanding the Pathology of different ocular diseases.CO3Utilizing the concept of clinical features of the diseases for the differential diagnosis of the anterior segment diseases.CO4Understanding the optics and applying the basic functions and importance of examination of anterior segment.

**CO5** Understanding and applying the various tools to measure ocular condition.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Glaucoma	Tonometry	4	COI
1	Evaluation	HVF	Ť	COI
2	Corneal Evaluation	Pentacam	4	$CO^{2}$
2		Pachymetry	+	002
3	Angle of Anterior Chamber	Gonioscopy	4	CO3
4	Lens Evaluation	Cataract evaluation	4	CO4
5	Antorior Sogmont	Slit Lamp	4	CO5
5	Anterior Segment	OCT	t	005
Refere	nce Books:			
4. P R	Yoder: Mounting Optics i	in Optical Instruments, SPIE Society of Photo- Optical Instrumentation, 2002.		
5. G S	mith, D A. Atchison: The	Eye and Visual Optical Instruments, Cambridge University Press, 1997.		
6. Jacl	. J. Kanski Clinical Ophthal	mology: A Systematic Approach, 6th edition, Butterworth - Heinemann,2007.		

e-Learning Source:

1.https://www.youtube.com/watch?v=AdKxOOzlx4Q

2. https://www.youtube.com/watch?v=aeOXtaapoJI

3. https://www.youtube.com/watch?v=2XZ7y8UF5YI

					Co	ourse A	rticula	tion Ma	ntrix: (N	lapping	of COs	with POs	and PSO	Os)			
PO-PSO	DO1	DOJ	DO3	DO4	DO5	DOG	DO7	DOS	POO	DO10	DO11	DO12	DSO1	DSO2	DSO2	DSO4	DSOS
СО	FUI	FO2	103	F04	FUS	FUU	FO/	FUo	F09	FOID	FOIT	FO12	1301	F302	1303	1304	1303
CO1	1	2	2	2	-	-	-	1	2	1	-	2	-	2	2	1	-
CO2	1	-	1	3	-	-	-	2	3	-	-	3	-	1	1	1	-
CO3	1	3	1	2	-	-	-	1	2	2	-	2	-	1	1	1	-
CO4	1	2	1	2	-	-	-	1	3	-	-	3	-	1	2	1	-
CO5	1	2	1	2	-	-	-	1	2	1	-	2	-	1	1	1	-

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

Attributes & SDGs

Course Code	Course Title			Att	ributes				SDGs
	Ocular Diseases and	Employability	Entrapropaurship	Skill	Gender	Environment &	Human	Professional	No.
MO506	Ocular Diseases allu	Employability	Entrepreneursnip	Development	Equality	Sustainability	Value	Ethics	
	Diagnostics Lab			√					3,4, 11



Effectiv	ve from So	ession: 2022-23	;								
Course	Code	MO507	Title of the Course	Clinic Posting	L	Т	Р	С			
Year		Ι	Semester	I	0	0	12	6			
Pre-Re	quisite	Nil	Co-requisite	Nil							
Course Objecti	ives	At the end of the contraindications clinical optometr	course the students will be of the test, step-by- step y procedures	e skilled in knowing the purpose, set- up and devices required for procedures, documentation of the findings, and interpretation of th	the te 1e find	st, indi ings of	cations the var	and rious			
	<b>Course Outcomes:</b> After the successful course completion, learners will develop following attributes:										
CO1	Analyzir	g the concept of c	linical features of the disea	ases for the managementof ocular diseases							
CO2	Understanding about accommodation, its anomalies and their practical significance										
CO3	Applying	g Various Technie	ques for Diagnosis and Ma	anagement of Various Eye Ailments.							
CO4	Applying	g advance technic	ues for Evaluation of Corr	nea, Tear Film and Ocular Refraction.							
CO5	Applying of different pharmaceutical agents in the management of Oculardisease as well as managing Ocular Toxicity.										

Unit No.	Tit	le of tl	1e Unit							Conter	nt of U	nit					Contact Hrs.	Mapped CO
				S	tudents	will im	prove t	neir sk	ills in cl	linical p	ocedu	res, and th	en progre	ssive inte	eractions v	with		
patients and professional personal are monitored as students practice optometry in supervised setting. Additional area includes problem solving and complications of various managements														ised				
				s	etting. 1	Addition	nal area	inclu	les prob	lem solv	ving ar	nd complie	cations of	various	managem	ents		
				v	vill be i	inculcat	ed. Stu	lents s	should h	nave exp	osure	to eye ba	nk faciliti	es and n	nust be m	nade		
				a	ware of	eye do	nation,	collect	tion of e	yes, pre	servati	on, pre an	d postope	rative ins	tructions	and		
				1	atest tec	hniques	s for pre	servat	ion of de	onor cor	nea. Th	he students	s will get	clinical tr	aining on	the		
				p	ractical	aspect	s of the	follo	wing co	urses na	mely c	optometric	optic –I	I & dispe	ensing op	tics,		
				V	isual op	otics – I	and oc	ular di	sease -I	[.								
				H	listory ta	king	C.		20		Ca	an practice of	on the follo	wing com	plaint:			
				1	.General	2. Speci	fic.		30 0	cases	B	lurred V1s10	n, Headac	he, Pain, re	edness,			
				T	ensomet	rv					vv Sii	mple Spher	Simple c	vlinder Sr	s pois bero cylin	der (9		
					Liisoinet	1 y			100	cases	Ot	olique degre	es). Bifoca	ls. PAL	mero cynn			
				N	/isual Ac	uitv Pin	hole acui	tv	100		Siı	mulation. es	specially to	show and	ask the stu	idents		
									100	cases	int	erpret the f	ndings.					CO1
				E	Extra ocu	lar Motil	ity		10	cases								CO1,
1	Clin	nicol t	noinina		Cover tes	t			10	cases	Vi	deo output	Simulation	of various	conditions	s.	120	CO2, CO3
1	CIII	incar u	annig	, A	Alternate	Cover te	st		10	cases	Vi	deo output	Simulation	of various	conditions	s.	120	CO4,
				ŀ	lirschber	g test			10	cases	Vi	deo output	Simulation	of various	conditions	s.		CO5
				N	Aodified	Krimsky	v test		3 c	ases	Vi	deo output	Simulation	of various	conditions	s.		005
				I	Push up to	est (Amp	litude of		. 10 0	cases								
				4	Accomme	odation)		(1 (	case in pr	esbyopia	age)							
					'usn up te 'onverge	est (Near	point o	I	10	cases								
					Stereons	sis test			10	cases								
					Tear Bre	ak up tii	ne		10	cases								
					Amsler'	s Grid te	st		10 cases	(simulate	) :	Simulation	of various	conditions				
					Photo st	ress test			10 cases	(Normal)	)							
					Color vi	sion test			10	cases								
					Schirme	r's test			10	cases								
					Confron	tation te	st		10	cases								
					Slit lam	gnt Exan	ation		<u> </u>	cases								
					Divital t	onometr	v		10	cases								
Refere	nce Boo	ks			Digitari	onomen	<u>,</u>		10	cuses								
1 A K I	Khurana	· Com	prehens	ive On	hthalmo	ology 4	th editic	n nev	v age int	ernation	al(n) L	td Publish	ners New	Delhi 20	007			
2. B. El	liott: Cli	nical Pr	ocedure	es in Pr	imary E	ve Care	3rd edit	ion. B	utterwoi	th-Hein	emann.	. 2007	1015, 110 1	Denni, 20	,,,,			
3. Jack	L Kans	ki Clin	ical On	hthalm	ology: A	A Syster	natic A	oproac	h. 6th e	dition. B	utterw	orth-Hein	emann. 2	007.				
e-Le	arning	Sour	ce:		0105)11	10 3000		prode	<u>, our c</u>	<u>antroni, 2</u>								
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2. htt	ps://wwv	v.voutu	be.com/v	watch?v	=OmlKF	GG5e-F	1											
3. htt	ps://wwv	v.youtu	be.com/	watch?v	=TWma2	ZZDgPX	0											
						Co	urse A	rticula	tion Ma	atrix: (N	lappin	ng of COs	with PO:	s and PS	Os)			
PO-P	SO	DO1	DOD	DO2		DOS	DOC	D07	DOG	DOO	DO1(	DO11	DO12	DCO1	DCOO	DCO		DEOS
CC	)	POI	PO2	PO3	PO4	POS	PO6	PO/	PO8	PO9	POI	0 POII	PO12	PSOI	PSO2	PSO.	3   PSO4	PSO5
CO	1	-	-	-	-	-	2	-	2	-	-	-	2	-	-	-	-	-
CO	2	-	-	-	-	-	2	-	-	-	-	-	2	-	-	-	-	-
CO	3	-	-	-	-	-	2	-	1	-	1	-	2	-	-	-	-	-
CO4         -         -         2         2         -         -         2         -													-					
CO	5	-	-	-	-	-	2	1	1	-	-	1	2	-	-	-	1	1
						2- Lo	w Corr	elatio	n; 2- Mo Attr	oderate ributes &	Correl 2 SDGs	lation; 3-	Substanti	al Corre	lation			

			1111100						
Course Code	Course Title			Att	ributes				SDGs
MO507	Clinic Posting	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	No.
	5			$\checkmark$					3,4, 11



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

# **DEPARTMENT OF PARAMEDICAL SCIENCES**

M.Sc Optometry (M.OPTOM)

**SYLLABUS** 

YEAR/ SEMESTER: I/II



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

	Program: MOPT Semester-II												
S. N	Course	Course Title	Type of Paper	Period F	er hr/we	eek/sem	]	Evaluatio	n Scheme		Sub.	Credit	Total
1.	code	Course mile	orraper	L	Т	Р	СТ	TA	Total	ESE	Total	creuit	Credits
					THEOR	IES							
1	M0508	Ocular Diseases and Diagnostics II	Core	3	1	0	40	20	60	40	100	3:1:0	4
2	M0509	Advanced Contact lens I	Core	3	1	0	40	20	60	40	100	3:1:0	4
3	M0510	Pediatric Optometry& Binocular vision	Core	3	1	0	40	20	60	40	100	3:1:0	4
4	M0511	Low Vision and Geriatric Optometry	Core	3	1	0	40	20	60	40	100	3:1:0	4
					PRACTI	CAL							
1	M0512	Ocular Diseases and Diagnostics II Lab	Core	0	0	2	40	20	60	40	100	0:0:1	1
2	M0513	Advanced Contact lens I Lab	Core	0	0	2	40	20	60	40	100	0:0:1	1
2	M0514	Pediatric Optometry & Binocular vision	Core	0	0	2	40	20	60	40	100	0:0:1	1
3		Lab											
4	M0515	Low Vision and Geriatric optometry Lab	Core	0	0	2	40	20	60	40	100	0:0:1	1
5	M0516	Clinic Posting (General )	0	0	12	25	25	50	-	50	0:0:6	6	
Total         12         4         20         345         145         530         320         650         26												26	

S.	Course		Туре			At	ttributes				United Nation Sustainable
N.	code	Course Title	of Paper	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	Development Goal (SDGs)
		THEORIES									
1	M0508	Ocular Diseases and Diagnostics II	Core	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$		$\checkmark$	$\checkmark$	3,4
2	M0509	Advanced Contact lens I	Core	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$			$\checkmark$	3,4
3	M0510	Pediatric Optometry& Binocular vision	Core	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$			$\checkmark$	3,4
4	M0511	Low Vision and Geriatric Optometry	Core	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$			$\checkmark$	3,4
		PRACTICAL									
1	M0512	Ocular Diseases and Diagnostics II Lab	Core	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$			$\checkmark$	3,4
2	M0513	Advanced Contact lens I Lab	Core	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$		$\checkmark$	$\checkmark$	3,4
3	M0514	Pediatric Optometry & Binocular vision	Core	V	V	V					3,4
5		Lab			•	,	•		,	•	
4	M0515	Low Vision and Geriatric optometry Lab	Core	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$		$\checkmark$	$\checkmark$	3,4
5	M0516	Clinic Posting (General )	Core	$\checkmark$		$\checkmark$	$\checkmark$				3,4

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



Effective	e from Session	: 2022-23									
Course	Code	MO508	Title of the Course	<b>Ocular Diseases and Diagnostics II</b>	L	Т	Р	С			
Year		Ι	Semester	II	3	1	0	4			
Pre-Req	luisite	Nil	Co-requisite	Nil							
Course	Objectives	At the end of the co Epidemiology, Sym diseases.	urse the students will be ptoms, Signs, Course se	e knowledgeable in the following aspects of ocular diseases: equelae of ocular disease, Diagnostic approach and Manager	Etiolo nent of	gy, f the oci	ular				
Course	se Outcomes: After the successful course completion, learners will develop following attributes:										
CO1	Understandin	g the concept of differ	ent Ocular diseases of an	nterior segment of Eye.							
CO2	2 Applying the concept of anatomy & Physiology of Eye while understanding the Pathology of different ocular diseases.										
CO3	Utilizing the	concept of clinical fea	tures of the diseases for	the differential diagnosis of the anterior segment diseases.							
CO4	Understandin	g the optics and apply	ing the basic functions a	and importance of examination of anterior segment.							
CO5	Understanding and applying the various tools to measure ocular condition.										

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO						
1	Posterior segment ocular diseases	Congenital anomalies Inflammatory disorders Degenerative conditions & Dystrophies Structural Deformities Oedema, Cysts and Tumors	8	CO1						
2	Diagnostic & therapeutics	Diagnosis and therapeutics for Post. Segment disease	8	CO2						
3	3     Surgical     Surgical treatment of posterior segment diseases       ERG									
4	Posterior segment Diagnostics	ERG EOG VEP OCT Fundusphotography	8	CO4						
5	Neuro optometry	Neuro optometric diseases and disorders	8	CO5						
Referen	ce Books:									
1.A K K	hurana: Comprehensive	Ophthalmology, 4th edition, new age international(p) Ltd. Publishers, New Delhi, 2007.								
2. B. Elli	ott: Clinical Procedures i	n Primary Eye Care, 3rd edition, Butterworth-Heinemann, 2007								
3. Jack J	. Kanski Clinical Ophth	almology: A Systematic Approach, 6th edition, Butterworth- Heinemann, 2007.								
1 http	Learning Source:									
r. mp	s.// w w w.youtube.com/ wat	En: v=Silloutio/Sol								

https://www.youtube.com/watch?v=OmIKEGG5e-E
 https://www.youtube.com/watch?v=TWmaZZDgPX0

						Cou	ırse Art	iculatio	n Matrix	: (Mappir	ng of COs	with POs	and PSOs)	)			
PO-PSO	PO1	PO2	PO3		PO5	PO6	PO7	POS	POQ	PO10	PO11	PO12	DSO1	DSO2	DSO3	PSO4	DSO5
CO	101	102	105	104	105	100	107	108	109	1010	1011	1012	1301	1302	1305	1304	1305
CO1	1	3	1	2	-	-	-	1	1	1	-	3	2	2	1	1	1
CO2	1	3	2	2	-	-	-	1	1	1	-	3	2	2	1	1	1
CO3	1	3	1	2	-	-	-	1	1	1	-	3	2	1	1	1	1
CO4	2	3	1	2	-	-	-	1	1	1	-	3	2	2	1	1	1
CO5	1	3	1	2	-	-	-	1	1	1	-	3	2	1	1	1	1

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Course Code	Course Title			Att	ributes				SDGs
	Ocular Disassas and	Employability	Entrapropaurship	Skill	Gender	Environment &	Human	Professional	No.
MO508	Oculai Diseases allu	Employaomity	Entrepreneursnip	Development	Equality	Sustainability	Value	Ethics	
	Diagnostics II	√	$\checkmark$	√	V		√	√	3,4



Effective from Sessio	on: 2022-23									
Course Code	MO509	Title of the Course	Advanced Contact lens I	L	Т	Р	С			
Year	Ι	Semester	II	3	1	0	4			
Pre-Requisite	Nil	Co-requisite	Nil							
<b>Course Objectives</b> To enable the students to have knowledge in both theoretical and practical aspects of Contact Lenses.										

		Course Outcomes								
CO1	Understanding about of	contact lens history, introduction, design & relation with structure of eye.								
CO2	02 Understanding about RGP contact lens material & their property their parameter.									
CO3	Understanding about F	RGP contact lens manufacturing techniques & fitting of RGP lenses.								
CO4	Understanding and kn	ow about care maintenance and do's & don't of RG P contact lens.								
CO5	Learn about complicat	ion and their management of RGP contact Lenses.								
Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO						
	INTRODUCTION	Anatomy and Physiology of the Cornea and related Structures								
1	TO CONTACT LENSES	Contact Lens Materials	8	CO1						
		Microbiology, Lens Care and Maintenance								
2	OPTICS OF	Tears and contact lenses	8	CO2						
	CONTACT LENSES	Ontics and Lens Design								
		Clinical Instrumentation in contact long practice								
2	CAKE AND MAINTENANCE	Disid Car Demochle connections fitting	0	CO3						
3	OF RIGID LENSES	Rigid Gas Permeable corneal lens fitting	0	005						
		Soft contact lens fitting								
4	CONTACT LENS	Toric Contact lens fitting	8	CO4						
	FITTING	Lens care regimen	0	001						
		Contact lens standards								
		Lens checking : Soft and Rigid								
	PROPERTIES OF	Contact lens complications								
5	CONTACT LENSES	Special types of Contact lenses – diagnosis surgery protective therapeutic sports	8	CO5						
		special types of contact tenses – diagnosis, surgery, protective, incrapedule, sports,								
D . f	D I									
1 Co	nte books:	ca Chaudhary, Jayraa Brothars medical publishars (D) I td								
2 14	CLE Contact lens module	s								
3. Co	ntact lens primer by Moni	ca Chaudhary. Jaypee Brothers medical publishers (P) Ltd.								
e-I 6	earning Source									
1. h	ttps://www.youtube.com/v	watch?v=ev7kpROYaao								
2. h	2. https://www.youtube.com/watch?v=wlPyYkq3LnY									
3. h	ttps://www.youtube.com/v	watch?v=w7skd-AA1PQ								

		Course Articulation Matrix: (Mapping of COs with POs and PSOs)															
PO-PSO	DO1	DO3	DO3	DO4	DO5	DO6	DO7	DOS	DOO	<b>DO10</b>	DO11	DO12	DSO1	DSO2	DSO2	DSO4	DSO5
СО	FOI	FO2	FUS	F04	105	FUO	FO/	FUo	109	FOID	FOIT	FO12	1301	F302	1303	F304	1303
CO1	1	3	1	2	-	-	-	1	2	-	-	2	2	1	-	1	1
CO2	1	3	1	3	-	-	-	1	3	-	-	3	3	2	-	1	1
CO3	1	3	1	2	-	-	-	1	2	-	-	2	3	1	-	1	1
CO4	1	3	1	2	-	-	-	1	3	-	-	3	2	1	-	1	1
CO5	1	3	1	2	-	-	-	1	2	-	-	2	2	1	-	1	1

			Attribu									
Course Code	Course Title		Attributes									
MO509	Advanced Contact	Employability	Entrepreneurship	Skill	Gender	Environment &	Human	Professional	No.			
	1 7		F	Development	Equality	Sustainability	Value	Ethics				
	Iens I	$\checkmark$	$\checkmark$	$\checkmark$	V		$\checkmark$	$\checkmark$	3,4			



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Effective from Sessio	n: 2022-23						
Course Code	MO510	Title of the Course	Pediatric Optometry & Binocular vision	L	Т	Р	С
Year	Ι	Semester	П	3	1	0	4
Pre-Requisite	Nil	Co-requisite	Nil				
	The objective of t	he course is to prov	ide the students with the knowledge of spectacle d	lispen	sing as	spects	in
<b>Course Objectives</b>	patients as well as	the development of	the eye and vision, vision assessment and manageme	ent of	vision	disord	er
	in pediatric patient	ts and to provide the stu	udents the basics of Binocular Vision and its clinical co-relat	ion.			

	Course Outcomes
CO1	Applying concept of optometric Evaluation procedure in children patients.
CO2	Understanding the concept of ocular drainage and other mechanical systems in children patients.
CO3	Understanding the gross anatomy and physiology related to Extra Ocular Muscles.
CO4	Understanding the concept & theories of Binocular single Vision.
CO5	Understanding the concept of Grades of Binocular Vision- SMP, Fusion and Stereopsis.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Refractive Development	Early Refractive Development Visually Guided control of Refractive State: Animal Studies Infant Accommodation and Convergence Oculomotor Function: Conjugate Eye Movements of Infants Development of the Vestibuloocular and Optokinetic reflexes	8	CO1
2	Binocular Vision I	Spatial and Chromatic Vision: Front-end Limitations to Infant Spatial vision: Examination of two analyses Development of the Human Visual Field Development of Scotopic Retinal Sensitivity Infant Colorvision Orientation and Motion selective Mechanisms in Infants Intrinsic Noise and Infant performance	8	CO2
3	Binocular Vision II	Development of interocular vision in Infants Stereopsis in Infants and its developmental relation to visual acuity Sensorimotor Adaptation and Development of the Horopter Two stages in the development of Binocular Vision and Eye Alignment Retinal and cortical Development Abnormal Visual Development What next in Infant Research	8	CO3
4	Clinical Applications	Assessment of Child Vision and Refractive Error Refractive Routines in the Examination of Children Cycloplegic Refraction Color Vision Assessment in Children Dispensing for the Child patient Pediatric Contact Lens Practice Dyslexia and Optometry Management Electrodiagnostic Needs of Multiple Handicapped Children Management Guidelines – Ametropia, Contant Strabismus	8	CO4
5	Management	Management Guidelines – Amblyopia         Accommodation and Vergence anomalies         Nystagmus         Common genetic problems in Paediatric optometry         Pediatric Ocular Diseases         Ocular Trauma in Children         Myopia control         Clinical uses of prism	8	CO5
Referen	ce Books:			
1. Pediat	ric Optometry –Willian	n Harvey/Bernard Gilmartin, Butterworth –Heinemann, 2004. ar Motility – VON NOORDEN G K Burian von Norden's 2 <sup>nd</sup> Ed. C.V. Mochy Co. St. Louis 1080	1	
2. Bin 3. The	eory and Practice of Squ	int and Orthoptics by A.K. Khurana.		
e-Lear	ming Source:			

- https://www.youtube.com/watch?v=y9FTgp3ODog https://www.youtube.com/watch?v=K3txN1Kv0CU 1.
- 2.
- 3. https://www.youtube.com/watch?v=-oBrLX-5NtI

	Course Articulation Matrix: (Mapping of COs with POs and PSOs)																
PO-PSO	DO1	DOJ	DO3	DO4	DO5	DO6	DO7	DOS	DOO	<b>DO10</b>	DO11	DO12	DSO1	DSOJ	DSO3	DSO4	DSOS
СО	POI	FO2	F05	r04	FUS	100	107	100	109	FOID	FOIT	FO12	1301	F302	1303	F304	1303
CO1	2	3	-	2	1	-	-	-	1	1	-	1	2	1	3	2	1
CO2	1	3	-	2	-	-	-	-	1	-	-	1	2	1	3	2	1
CO3	2	3	-	2	-	-	-	-	1	1	-	1	2	1	3	2	1
CO4	1	3	-	1	-	-	-	-	1	-	-	1	2	1	3	2	1
CO5	2	3	-	1	-	-	-	-	1	-	-	1	2	1	3	2	1

			11001100									
Course Code	Course Title		Attributes SI									
	Pediatric Optometry&	Employability	Entrepreneurship	Skill	Gender	Environment &	Human	Professional	No.			
MO510	Binocular vision	Employability	Lincepreneursnip	Development	Equality	Sustainability	Value	Ethics				
		√	$\checkmark$	√	√		√	√	3,4			



		0								
Effective from Session: 2022-23										
Course Code	MO511	Title of the Course	Low Vision and Geriatric Optometry	L	Т	Р	С			
Year	Ι	Semester	II	3	1	0	4			
Pre-Requisite	Nil	Co-requisite	Nil							
	At the end of the cou	rse the students will be sl	killed in knowing the purpose, set- up and devices required for	or the	test,					
Course Objectives	indications and cont	raindications of the test	, step-by- step procedures, documentation of the findings, a	nd inte	rpretat	ion of				
	the findings of the var	rious clinical optometry	procedures.							

	Course Outcomes							
CO1	Understanding the basic definition and classification of Low Vision and Applying various optical and non-optical devices for visual							
	rehabilitation of a low vision Patient.							
CO2	Understanding how to do examination of a low vision Patient and the legal aspects of Low Vision in India, as well as applying case studies to							
	for visual rehabilitation of a low vision Patient.							
CO3	Applying concept of optometric Evaluation procedure in elderly patients.							
CO4	Understanding the concept of ocular drainage and other mechanical systems in elderly patients.							
CO5	Utilizing the concept of various optical and primarily medicated intervention and the therapeutic procedure in elderly patients.							

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Visual Disorders – Medical Perspective	The Epidemiology of Vision Impairment Vision Impairment in the pediatric population Ocular Diseases: Age – Related Cataract, Glaucoma ARMD Diabetic retinopathy Corneal Disorders OcularTrauma Sensory Neuro-ophthalmology and Vision Impairment Refractive Disorders Visual Disorders – The Functional Perspective Low Vision andPsychophysics Visual Functioning in Pediatric Populations with LowVision Perceptual correlates of OpticalDisorders Functional aspects of Neural Visual Disorders of the eye andBrain Visual Disorders and Performance of specific Tasks requiringvision	8	CO1
2	Visual Disorders – The Psychosocial Perspective	Developmental perspectives –Youth Vision Impairment andCognition Spatial orientation and Mobility of people with visionimpairments Social skills Issues in visionimpairment Communication and language: Issues andconcerns Developmental perspectives on Aging and visionloss Vision and cognitive Functioning in oldage Interactions of Vision Impairment with other Disabilities ansensoryImpairments. Children with MultipleImpairments Dual Vision and HearingImpairment Diabetes Mellitus and VisionImpairment Vision Problems associated with MultipleSclerosis Vision Impairment related to Acquired BrainInjury Vision andDementia Low Vision and HIV infection	8	CO2
3	The Environment and Vision Impairment: Towards Universal Design	Indian Disabilities act Children's Environments Environments of Older people Outdoor environments Lighting to enhance visual capabilities Signage and way finding Accessible Environments through Technology	8	CO3

4	Vision Rehabilitation:	In Western Countries In Asia Personnel preparation in Vision Rehabilitation Psychological and social factors in visual Adaptation and Rehabilitation The Role of psychosocial Factors in adaptation to vision Impairment and Habilitation outcomes for Children and Youth	8	CO4							
5	Geriatric Optometry	The Role of psychosocial Factors in adaptation to vision Impairment and Habilitation outcomes for Adults and Older adults. Social support and adjustment to vision Impairment across the lifespan The person – Environment perspective of vision impairment Associated Depression, Disability and rehabilitation Methodological strategies and issues in social research on vision Impairment and rehabilitation	8	CO5							
Referen	ce Books:										
1.T Gro	osvenor: Primary Care Opton	netry, 5th edition, Butterworth –Heineman, USA, 2007									
1. OPS	Sharma: Geriatric Care–A tex Natarajan: An undate on Geria	t book of geriatrics and Gerontology, Viv books, NewDelhi,2005.									
e-Lea	rning Source:	arres, Sakun I aunpagani, Chemia, 1770									
1. http	1. https://www.youtube.com/watch?v=Sm6d4t873oI										
2. https://www.youtube.com/watch?v=OmlKEGG5e-E											
3. http	os://www.youtube.com/watch	n?v=X7zRRpiazwE									

					~								100	<b>a</b> \			
	Course Articulation Matrix: (Mapping of COs with POs and PSOs)																
PO-PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	POS	POQ	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO/	PSO5
CO	101	102	105	104	105	100	107	100	10)	1010	1011	1012	1001	1502	1505	1304	1505
CO1	2	-	-	1	-	3	3	2	2	-	2	2	-	-	-	-	1
CO2	2	-	-	2	-	3	2	2	1	-	2	3	-	-	-	-	2
CO3	2	-	-	1	-	3	3	1	2	-	1	2	-	-	-	-	1
CO4	2	-	-	1	-	3	3	2	1	-	2	3	-	-	-	-	1
CO5	2	-	-	2	-	3	2	2	1	-	2	2	-	-	-	-	1

Course Code	Course Title			Att	ributes				SDGs
	Low Vision and	Employability	Entrapropaurship	Skill	Gender	Environment &	Human	Professional	No.
MO511	Geriatric Optometry	Employability	Entrepreneursnip	Development	Equality	Sustainability	Value	Ethics	
		$\checkmark$	$\checkmark$	√	√		$\checkmark$	$\checkmark$	3,4



Effective from Sessi	on: 2022-23	Effective from Session: 2022-23													
Course Code	MO512         Title of the Course         Ocular Diseases and Diagnostics II Lab         L														
Year	Ι	Semester	П	0	0	2	1								
Pre-Requisite	Nil	Co-requisite	Nil												
Course Objectives	At the end of Epidemiolog diseases.	f the course the students w gy, Symptoms, Signs, Cou	vill be knowledgeable in the following aspects of ocular diseases: rse sequelae of ocular disease, Diagnostic approach and Managen	Etiolog nent of	gy, the ocu	ılar									

#### Course Outcomes: After the successful course completion, learners will develop following attributes:

CO1	Understanding the concept of different Ocular diseases of anterior segment of Eye.
CO2	Applying the concept of anatomy & Physiology of Eye while understanding the Pathology of different ocular diseases.
CO3	Utilizing the concept of clinical features of the diseases for the differential diagnosis of the anterior segment diseases.
<b>CO4</b>	Understanding the optics and applying the basic functions and importance of examination of anterior segment.
CO5	Understanding and applying the various tools to measure ocular condition.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO								
1	Ocular Electrophysiology- I	ERG	4	CO1								
2	Ocular Electrophysiology- II	Ocular Electrophysiology- II EOG										
3	Ocular Electrophysiology- III	VEP	4	CO3								
4	Fundus Examination- I	ОСТ	4	CO4								
5	Fundus Examination- II	Fundus photography	4	CO5								
Refere	nce Books:											
1.A K	Khurana: Comprehensive	Ophthalmology, 4th edition, new age international(p) Ltd. Publishers, New Delhi, 2007.										
2. B. E	lliott: Clinical Procedures in	Primary Eye Care, 3rd edition, Butterworth-Heinemann, 2007										
3. Jack	J. Kanski Clinical Ophtha	Imology: A Systematic Approach, 6th edition, Butterworth- Heinemann, 2007.										
e-Le	arning Source:											
4. ht	4. https://www.youtube.com/watch?v=Sm6d4t873oI											
5. https://www.youtube.com/watch?v=OmlKEGG5e-E												
6 ht	teau//www.waytyha.acm/watah											

6. https://www.youtube.com/watch?v=TWmaZZDgPX0
1.A K Khurana: Comprehensive Ophthalmology, 4th edition, new age international(p) Ltd. Publishers, New Delhi, 2007.
2. B. Elliott: Clinical Procedures in Primary Eye Care, 3rd edition, Butterworth-Heinemann, 2007

					Co	urse A	rticula	tion Ma	trix: (N	lapping	of COs v	with POs	and PSO	Os)			
PO-PSO	DO1	DOD	DO2		DOS	DOG	DO7	DOQ	DOO	DO10	DO11	DO12	DCO1	DEOD		DCO4	DEOS
СО	POI	PO2	POS	P04	POS	PU0	P07	PU8	P09	POIO	POII	PO12	P301	P302	P305	P304	P305
CO1	-	-	-	-	-	2	-	2	-	-	-	2	-	-	-	-	-
CO2	-	-	-	-	-	2	-	-	-	-	-	2	-	-	-	-	-
CO3	-	-	-	-	-	2	-	1	-	1	-	2	-	-	-	-	-
CO4	-	-	-	-	-	2	2	-	-	-	-	2	-	-	-	-	-
CO5	-	-	-	-	-	2	1	1	-	-	1	2	-	-	-	1	1

			Attribu	tes & SDGs											
Course Code	Course Title		Attributes SDC												
MO512	Ocular Diseases and	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	No.						
WI0512	Diagnostics II Lab			√	Equality	Sustainability	Value	Etilles	3,4, 11						



Effective from Session	: 2022-23		•				
Course Code	MO513	Title of the Course	Advanced Contact lens I Lab	L	Т	Р	С
Year	Ι	Semester	П	0	0	2	1
Pre-Requisite	NIL	Co-requisite	Nil				
Course Objectives	To enable the	students to have knowl	edge in both theoretical and practical aspects of Contact Ler	ises.			

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

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO								
1	RGP-I	Rigid Gas Permeable corneal lens Material	4	CO1								
2	2 RGP-II Rigid Gas Permeable corneal lens fitting											
3	3 Soft CL-I Soft contact lens Material											
4	4 Soft CL-II Soft contact lens fitting											
5	5 Toric CL Toric Contact lens fitting											
Referen	ce Books:											
1. Co	ntact lens primer by Mo	nica Chaudhary, Jaypee Brothers medical publishers (P) Ltd										
2. IACI	LE Contact lens module	S.										
3. Cont	act lens primer by Moni	ica Chaudhary, Jaypee Brothers medical publishers (P) Ltd.										
e-Lear	e-Learning Source:											
1. http	1. https://www.youtube.com/watch?v=ey7kpRQYaao											
) http	au//www.wantuha.com/	watch 9ID_VI_22I_nV										

https://www.youtube.com/watch?v=wlPyYkq3LnY
 https://www.youtube.com/watch?v=w7skd-AA1PQ

					Co	ourse A	rticula	tion Ma	atrix: (N	Mapping	g of COs	with PO	s and PS	Os)			
PO-PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO	101	102	105	104	105	100	107	100	10)	1010	1011	1012	1501	1502	1505	1504	1505
CO1	1	3	1	2	-	-	-	1	1	1	-	3	2	2	1	1	1
CO2	1	3	2	2	-	-	-	1	1	1	-	3	2	2	1	1	1
CO3	1	3	1	2	-	-	-	1	1	1	-	3	2	1	1	1	1
CO4	2	3	1	2	-	-	-	1	1	1	-	3	2	2	1	1	1
CO5	1	3	1	2	-	-	-	1	1	1	-	3	2	1	1	1	1

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

Autibules & SDGS												
Course Code	Course Title		Attributes									
MO513	Advanced Contact lens I Lab	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	No.			
		$\checkmark$	$\checkmark$	$\checkmark$	V		V	√	3,4			



Effective from Session	n: 2022-23											
Course Code	MO514	Title of the Course	Pediatric Optometry & Binocular vision Lab	L	Т	Р	С					
Year	Ι	Semester	Π	0	0	2	1					
Pre-Requisite	Nil	Co-requisite	Nil									
Course Objectives	The objective of t patients as well as	he course is to prov the development of	ide the students with the knowledge of spectacle of the eye and vision, vision assessment and management	ispen ent of	ising as vision	spects disord	in ler					
	in pediatric patient	ts and to provide the stu	udents the basics of Binocular Vision and its clinical co-relat	ion.								

	Course Outcomes
CO1	Applying concept of optometric Evaluation procedure in children patients.
CO2	Understanding the concept of ocular drainage and other mechanical systems in children patients.
CO3	Understanding the gross anatomy and physiology related to Extra Ocular Muscles.
CO4	Understanding the concept & theories of Binocular single Vision.
CO5	Understanding the concept of Grades of Binocular Vision- SMP. Fusion and Stereopsis.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO						
1	Defus stine Frominetion	Assessment of Child Vision and Refractive Error	4	CO1						
1.	Kerracuve Examination	Refractive Routines in the Examination of Children	4	COI						
2.	Refraction	Cycloplegic Refraction	4	CO2						
		Color Vision Assessment in Children								
3.	Pediatric Assessment	Dispensing for the Child patient	4	CO3						
		Pediatric Contact LensPractice								
		Dyslexia and Optometry Management								
4.	<b>Optometry Management</b>	Electrodiagnostic Needs of Multiple Handicapped Children	4	CO4						
5.	Management Guidelines	Management Guidelines – Ametropia, Contant Strabismus Management Guidelines – Amblyopia	4	CO5						
Referen	ce Books:									
1. Pec	liatric Optometry –William Harve	y/Bernard Gilmartin, Butterworth –Heinemann, 2004.								
2. Bir	ocular Vision and Ocular Motility	y - VON NOORDEN G K Burian von Norden's, 2nd Ed., C.V. Mosby Co.St. Louis, 1980	).							
3. The	eory and Practice of Squint and O	rthoptics by A.K. Khurana.								
e-Lea	rning Source:									
1. http	1. https://www.youtube.com/watch?v=y9FTgp3ODog									
2. http	os://www.youtube.com/watch?v=1	K3txN1Kv0CU								
3. http	s://www.youtube.com/watch?v=-	-oBrLX-5NtI								

					Co	ourse A	rticula	tion Ma	atrix: (N	Mapping	g of COs	with PO	s and PS	Os)			
PO-PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO	101	102	105	104	105	100	107	100	10)	1010	1011	1012	1501	1502	1505	1304	1505
CO1	1	3	1	2	-	-	-	1	2	-	-	2	2	1	-	1	1
CO2	1	3	1	3	-	-	-	1	3	-	-	3	3	2	-	1	1
CO3	1	3	1	2	-	-	-	1	2	-	-	2	3	1	-	1	1
CO4	1	3	1	2	-	-	-	1	3	-	-	3	2	1	-	1	1
CO5	1	3	1	2	-	-	-	1	2	-	-	2	2	1	-	1	1

			110011100									
Course Code	Course Title		Attributes S									
MO514	Pediatric Ontometry &	Employability	Entrepreneurship	Skill	Gender	Environment &	Human	Professional	No.			
		Employuoliny	Lindepreneursnip	Development	Equality	Sustainability	Value	Ethics				
	Binocular Vision Lab	√	$\checkmark$	$\checkmark$	$\checkmark$		√	√	3,4			



Effective from Sessio	Effective from Session: 2022-23												
Course Code	MO515	Title of the Course	Low Vision and Geriatric optometry Lab	L	Т	Р	С						
Year	Ι	Semester	П	0	0	2	1						
Pre-Requisite	Nil	Co-requisite	Nil										
	At the end of the	e course the students will be	e skilled in knowing the purpose, set- up and devices required for	or the '	test,								
<b>Course Objectives</b>	Objectives indications and contraindications of the test, step-by- step procedures, documentation of the findings, and interpretation of												
	the findings of the various clinical optometry procedures.												

	Course Outcomes
CO1	Understanding the basic definition and classification of Low Vision and Applying various optical and non-optical devices for visual
	rehabilitation of a low vision Patient.
CO2	Understanding how to do examination of a low vision Patient and the legal aspects of Low Vision in India, as well as applying case studies to
	for visual rehabilitation of a low vision Patient.
CO3	Applying concept of optometric Evaluation procedure in elderly patients. Low Vision and Geriatric optometry Lab
CO4	Understanding the concept of ocular drainage and other mechanical systems in elderly patients.
CO5	Utilizing the concept of various optical and primarily medicated intervention and the therapeutic procedure in elderly patients.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO						
1	Ocular Examination-I	Ocular Diagnosis	4	CO1						
2	Ocular Examination-II	Case history.	4	CO2						
3	Ocular Examination-III	Assessment of Vision	4	CO3						
4	Low Vision	Application of Low Vision devices.	4	CO4						
5	Rehabilitation	Rehabilitation of Vision	4	CO5						
Referen	ce Books:									
1.T Gro	osvenor: Primary Care O	ptometry, 5th edition, Butterworth –Heineman, USA, 2007								
2. OP	Sharma: Geriatric Care-	-A text book of geriatrics and Gerontology, Viv books, NewDelhi,2005.								
3. VS	Natarajan: An update of	n Geriatrics, Sakthi Pathipagam, Chennai, 1998								
e-Lear	ming Source:									
1. http	os://www.youtube.com/	watch?v=Sm6d4t873oI								
2. http	. https://www.youtube.com/watch?v=OmlKEGG5e-E									
3. http	s://www.youtube.com/y	vatch?v=X7zRRpiazwE								

		Course Articulation Matrix: (Mapping of COs with POs and PSOs)															
PO-PSO	PO1	PO2	DO3		PO5	POG	PO7	POS		PO10	PO11	PO12	DSO1	DSO2	DSO3	DSO4	DSO5
СО		102	105	104	105	100	107	108	109	1010	1011	1012	1301	1502	1305	1504	1505
CO1	2	3	-	2	1	-	-	-	1	1	-	1	2	1	3	2	1
CO2	1	3	-	2	-	-	-	-	1	-	-	1	2	1	3	2	1
CO3	2	3	-	2	-	-	-	-	1	1	-	1	2	1	3	2	1
CO4	1	3	-	1	-	-	-	-	1	-	-	1	2	1	3	2	1
CO5	2	3	-	1	-	-	-	-	1	-	-	1	2	1	3	2	1
				1 T.	C.	1.4		<b>T</b> ]	4. C		2 C-1	4 4 1	Constant	•			

Course Code	Course Title		Attributes									
MO515	Low Vision and	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	No.			
	Lab	√	$\checkmark$	√	~		V	$\checkmark$	3,4			



Efforti	Effective from Session: 2022-23												
Effectiv	ve from s	96222101	11: 2022-23			1	1		-				
Course	Code		MO516	Title of the Course	Clinic Posting	L	Т	P	C				
Year	Year I Semester II												
Pre-Requisite Nil Co-requisite Nil													
Course Objecti	Course ObjectivesAt the end of the course the students will be skilled in knowing the purpose, set- up and devices required for the test, indications and contraindications of the test, step-by- step procedures, documentation of the findings, and interpretation of the findings of the various clinical optometry procedures												
		Cou	rse Outcome	s: After the successful of	course completion, learners will develop following attrib	utes:							
CO1	Analyzi	ng the	concept of clin	ical features of the disease	s for the managementof ocular diseases								
CO2	Underst	tanding	g about accom	modation, its anomalies a	and their practical significance								
CO3	O3 Applying Various Techniques for Diagnosis and Management of Various Eye Ailments.												
CO4	Applyir	ng adva	ance technique	s for Evaluation of Cornea	a, Tear Film and Ocular Refraction.								
CO5	Applyi	ng of c	lifferent pharm	aceutical agents in the man	nagement of Oculardisease as well as managing Ocular Toxicity	/.							

Unit No.	Title of the Unit		Contact Hrs.	Mapped CO		
		Students will improve interactions with patients optometry in supervise complications of variou exposure to eye bank fac eyes, preservation, pre preservation of donor co aspects of the following visual optics – II and oct				
		1.General 2. Specific 3.Conditions Lensometry	30 cases	Blurred Vision, Headache, Pain, redness, Watering, Flashes, Floaters, Blacks pots Simple Sphere, Simple cylinder, Sphero cylinder (90, 180 Oblique degrees), Bifoc		
		Visual Acuity Pinhole acuity	100 cases	PAL Simulation, especially to show and ask th students to interpret the findings.		
	Clinical training	Extra ocular Motility Cover test	10 cases 10 cases	Video output Simulation of various conditions.	100	CO1, CO2,
1		Alternate Cover test	10 cases	Video output Simulation of various condi	120	CO3,
		Hirschberg test	10 cases	Video output Simulation of various conditions.		CO4,
		Modified Krimsky test	3 cases Video output Simulation of various cond			
		Push up test (Amplitude				
		of Accommodation)				
		Push up test (Neer	age)			
		point of Convergence)	10 cases			
		Stereopsis test	10 cases			
		Tear Break up time	10 cases			
		Amsler's Grid test	10 cases (simulate)	Simulation of various conditions		
		Photo stress test	10 cases (Normal)			
		Color vision test	10 cases			
		Schirmer's test	10 cases			
		Confrontation test	10 cases			
		Torch light Examination	50 cases			
		Slit lamp examination	10 cases			
	<u> </u>	Digital tonometry	10 cases			
Refere	nce Books:		1		0.5	
1.A K I	Khurana: Comprehens	ive Ophthalmology, 4th e	dition, new age interr	hational(p) Ltd. Publishers, New Delhi, 20	07.	
2. B. El	L Kanaki Clinical Procedur	es in Primary Eye Care, 3rd	edition, Butterworth	-Heinemann, 2007		
J. Jack	J. Kaliski Cillical Op	nmannology. A Systemati	ic Approach, our ealt	ion, Butter worth- Hellielliann, 2007.		
e-Lea	ning Source:	n/watch 24_Sm611+072-T				
$\begin{array}{ccc} 4. & \Pi U \\ 5 & htt \\ \end{array}$	ps.//www.youtube.com	m/watch?v=0m1KECC5a	-F			
5. IIII	ps.//www.youtube.com	n/watch?y=TWma77Dat	-L 2X0			
o. Itt	ps.//www.youtube.col	in watch (v = 1 w mazzDgP	AU			

	Course Articulation Matrix: (Mapping of COs with POs and PSOs)																
PO-PSO	DO1	DO3	DO3		DO5	DOG	<b>DO</b> 7	DOS	DOO	<b>DO10</b>	DO11	DO12	DSO1	DSOJ	DSO2	DSO4	DSOS
СО	FUI	FO2	F05	F04	FOS	FUO	r0/	100	F09	F010	ron	FO12	1301	F302	1303	1304	1303
CO1	2	3	-	2	1	-	-	-	1	1	-	1	2	1	3	2	1
CO2	1	3	-	2	-	-	-	-	1	-	-	1	2	1	3	2	1
CO3	2	3	-	2	-	-	-	-	1	1	-	1	2	1	3	2	1
CO4	1	3	-	1	-	-	-	-	1	-	-	1	2	1	3	2	1
CO5	2	3	-	1	-	-	-	-	1	-	-	1	2	1	3	2	1

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

Attributes	& SDGs	

Course Code	Course Title	Attributes							
	Clinic Posting	Employability	Entrepreneurship	Skill	Gender	Environment &	Human	Professional	No.
MO516	(General)			Development	Equality	Sustainability	Value	Ethics	
		$\checkmark$	$\checkmark$	√	√		√	√	3,4