



Dr. D. Y. PATIL VIDYAPEETH, PIMPRI, PUNE
(Deemed to be University)

Revised Syllabus of Third Year of
Bachelor of
Clinical Optometry
(B. Optom.) Programme

Academic Year 2024-25 & onwards

Revised as per Ministry of Health and Family Welfare
Model Curriculum Handbook-Optometry

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**REGULATION FOR THE UNDER GRADUATE DEGREE
PROGRAMME IN OPTOMETRY: BACHELOR OF CLINICAL
OPTOMETRY (B. OPTOM.)**

1. Eligibility for admission:

Selection procedure:

1. He/she has passed the Higher Secondary (10+2) or equivalent examination recognized by any Indian University or a duly constituted Board with pass marks (40%) in Physics, Chemistry, Biology/Mathematics.

OR

Diploma in Optometry after completing 12th class/ 10+2 of CBSE or equivalent with minimum aggregate of 40% marks in Physics, Chemistry and Biology/Mathematics provided the candidate must have passed in each subject separately.

2. Candidates who have studied abroad and have passed the equivalent qualification as determined by the Association of Indian Universities will form the guideline to determine the eligibility and must have passed in the subjects: Physics, Chemistry, Biology/ Mathematics and English up to 12th Standard level.

OR

A candidate must have passed Std. XII or equivalent examination with 40% marks for General Category (35% marks for reserve category) in Physics, Chemistry, Biology / Mathematics and English subjects or a candidate who have passed Minimum Competency Vocational Course (MCVC) from recognized Board with overall 50% marks.

3. He/she has attained the age of 17 years as on 31st December of the year of admission.
4. He/she has to furnish at the time of submission of an application form, a certificate of Medical fitness from a registered medical practitioner.
5. Admission to Bachelor of Clinical Optometry programme shall be made on the basis of eligibility and an entrance test to be conducted for the purpose.

- a) Entrance test, to be conducted by the Vidyapeeth as per the syllabus under 10+2 scheme of National Board (CBSE/ State Board/ICSE/ NOS/ IGSCE). Successful candidates on the basis of written test will be called for the counseling. The counseling committee will include the Director of the Institute of Optometry (Chairman of the Board), senior faculty members along with other nominees, whose recommendations shall be final for the selection of the students.
- b) During subsequent counseling(s) the seat will be allotted as per the merit of the candidate depending on the availability of seats on that particular day.
- c) The name of the student(s) who remain(s) absent from classes for more than 15 days at a stretch after joining the said course will be struck off from the college rolls without giving any notice.

2. Provision of Lateral Entry:

Lateral entry to second year of undergraduate optometry programme for candidates who have passed diploma programme (Refraction or its equivalent) from the Government Boards and recognized by State/Central University, fulfilling the conditions specified and these students are eligible to take admission on lateral entry system only if the related subjects have been studied at diploma level.

3. Duration of the course

The B. Optometry undergraduate degree programme is of four years (Total Eight semesters) duration (3+1) including one year of compulsory internship.

Duration of the course: 4 (3+1) years or 8 (6+2) semesters.

Semesters - An academic year consists of two semesters

Odd Semester: June/July to November/December

Even Semester: November/December to April/May

4. Medium of instruction

English shall be the medium of instruction for all the subjects of study and for examination of the course.

5. Attendance

A candidate has to secure minimum-

- 1. 75% attendance in theory
- 2. 80% in Skills training (practical) for qualifying to appear for the final examination.

6. Competency Standards

Classification Units of Competency Skills at Entry level for optometrists

1. Communication Skills
2. Professional Conduct
3. Patient Examination and management.
4. Optical Dispensing
5. Documentation

For details refer to **IELOCSS** (Indian Entry Level Optometry Competency Skills Standards) document developed by **ASCO** (Association of Schools & Colleges of Optometry) India.

7. Scheme of Examination

(a) Internal Examinations (Theory + Practical + Viva)

1. There shall be two internal examinations (also called internal assessment tests I and II) of one hour duration for each course to be held as per the schedule fixed in the Academic Calendar.
2. A student can take for supplementary re-internal exam of a specific subject or all the subjects for the betterment of performance in case of scoring of less mark in previous internal assessment exams only after successful submission of an application to the class teacher which will be approved by Director of the institute.

(b) University Examination

University Theory Examination Pattern		
Section A		
MCQs	10 x 1 Mark each	10 Marks
Section B		
LAQs (Any 2 out of 3)	02 x 10 Marks each	20 Marks
Section C		
Short Questions (Any 4 out of 5)	04 x 05 Marks each	20 Marks
Total		50 Marks

Total 100 Marks Combined Head of Passing

1. External Theory will carry **50 marks**
2. Internal Assessment (Theory + Practical) will carry total of **50 marks**

Break –Up

1. Final Theory University Examination 50 Marks
2. Internal Assessment Examination 50 Marks (40T+10V/P)
3. Grand Total = 100 Marks (Each Subject)

(c) Standard of Passing:

1. The standard of passing shall be minimum 50% in each subject.
2. The marks of all heads combined (University Theory Exam + Internal Assessment Theory + Practicals / Viva) shall be considered together for Passing of the candidate.

(d) Grace Marks

The grace marks up to a maximum of **FIVE (5)** marks may be awarded to a student who has failed in not more than two subjects in the respective semester. Provided that these grace marks shall be awarded only if the student passes after awarding these marks.

(e) Grading System

UGC 10-point Grading Scale

Marks	Letter Grade	Grade Point
90 To 100	O : Outstanding	10
80 To 89	A+ : Excellent	9
70 To 79	A : Very Good	8
60 To 69	B+ : Good	7
55 To 59	B : Average	6
50 To 54	P : Pass	5
00 To 49	F : Fail	0
-	AB : Absent	0

Computation of SGPA and CGPA

The UGC recommends the following procedure to compute the Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA):

- i. The SGPA is the ratio of sum of the product of the number of credits with the grade points scored by a student in all the courses taken by a student and the sum of the number of credits of all the courses undergone by a student, i.e.

$$\text{SGPA (Si)} = \Sigma(C_i \times G_i) / \Sigma C_i$$

where C_i is the number of credits of the course and G_i is the grade point scored by the student in the course.

- ii. The CGPA is also calculated in the same manner taking into account all the courses undergone by a student over all the semesters of a programme, i.e.

$$\text{CGPA} = \Sigma(C_i \times S_i) / \Sigma C_i$$

where S_i is the SGPA of the semester and C_i is the total number of credits in that semester.

- iii. The SGPA and CGPA shall be rounded off to 2 decimal points and reported in the transcripts.

Illustration of Computation of SGPA and CGPA and Format for Transcripts

i. Computation of SGPA and CGPA

Illustration for SGPA

Course	Credit	Grade letter	Grade point	Credit Point (Credit x Grade)
Course 1	3	A	8	3 X 8 = 24
Course 2	4	B+	7	4 X 7 = 28
Course 3	3	B	6	3 X 6 = 18
Course 4	3	O	10	3 X 10 = 30
Course 5	3	C	5	3 X 5 = 15
Course 6	4	B	6	4 X 6 = 24
	20			139

Thus, **SGPA** = $139/20 = 6.95$

Illustration for CGPA

Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6
Credit : 20 SGPA : 6.9	Credit : 22 SGPA : 7.8	Credit : 25 SGPA : 5.6	Credit : 26 SGPA : 6.0	Credit : 26 SGPA : 6.3	Credit : 25 SGPA : 8.0

Thus, **CGPA** =

$$\frac{20 \times 6.9 + 22 \times 7.8 + 25 \times 5.6 + 26 \times 6.0 + 26 \times 6.3 + 25 \times 8.0}{144} = 6.73$$

- ii. **Transcript (Format):** Based on the above recommendations on Letter grades, grade points and SGPA and CCPA, the Institute may issue the statement of marks for each semester and a consolidated transcript indicating the performance in all semesters.

(f) ATKT (Allowed-To-Keep-Terms)

1. A Student who has failed in 2 subjects or courses in respective academic year (Both Semesters combined) shall be allowed to keep term for next Semester respectively.
2. A student who failed more than two subjects or courses in whole academic year cannot be promoted to next academic year.

3. For enrolment in third year of B. Optom. programme, a student must pass the University examinations of 1st & 2nd semesters of first year B. Optom. programme and a student from second year B. Optom. programme can be promoted to third year B. Optom. with not more than two subjects of second year B. Optom. (Both Semesters combined) as a backlog.
4. For enrolment in fourth year Internship programme, a student must pass all three academic years of B. Optom. programme.

(g) Research Project / Dissertation

1. The students shall carry out research project/clinical study in the Recognized Research Institute or Clinical Eye Hospital or Eye Clinics or Renowned Optical cum Clinical dispensing stores.
2. For Research Project the student guide ratio shall ordinarily be 5: 1 Ratio. In exceptional case the teacher may be permitted by the director to have more than 5 students but not more than 7 students.
3. The findings of the Research Project shall be presented in the form of a Dissertation, with the intention of acquainting the student in research methodology adopted while carrying out research in a particular subject and in scientific writing and in presentation skills.
4. The dissertation shall broadly comprise of General information, Abstract or Summary of the work, Technical information comprising Introduction including review of literature, Methodology, Results and Discussion, Literature cited and Conclusions and Future Prospects.
5. The technical data shall be supported with appropriate illustrations, photographs, statistical data and any other relevant documents.
6. The student shall carry out research and submit the dissertation, after completion of 9 months of internship. The institute shall appoint a committee or a designate teacher/guide to scrutinize the dissertation.

(h) Dissertation Evaluation and Final Year Internship Professional Examination

1. The Dissertation and Final Year Internship Professional Examination shall be evaluated for total 400 marks.
100 Marks Theory
150 Marks Project
100 Marks Clinical & Technical Viva
50 Marks for Case Work-Up

2. The committee of Research Guide, Internal examiner and External Examiner shall evaluate dissertation, presentation of the work, viva-voce, Written Exam, Live Case Work-up and Log-Book for 300 marks (150 Marks Project/ 100 Marks Clinical & Technical Viva/ 50 Marks for Case Work-Up)
3. The Internal and External Examiners will individually evaluate the student under the categories mentioned above for 300 marks.
4. The Performance of the student during internship shall be evaluated by conducting Theory MCQ's paper of 100 marks at the end of final year examination which includes all courses of optometry including practical's.

(i) Criteria for appointment of Examiner (Internal & External) and terms of their appointment.

1. Board of Studies of Optometry and Visual Sciences shall submit, to the Committee constituted by Board of Examinations, a panel of examiner names, along with their addresses, suitable for appointment as Internal and External Examiners.
2. Examiners shall be appointed by the Academic Council as per section 8(b) (viii) of the Rules of Dr. D. Y. Patil Vidyapeeth on the recommendations of the Board of Examinations.
3. In case of refusal from the person so appointed, the Controller of Examinations shall appoint substitute examiners from the panel approved.
4. Internal and External Examiners: An "Internal Examiner" means a person who is a teacher in the constituent college(s) / institute(s) of the Vidyapeeth. The teacher/recognized teacher of other University in the state or outside the state shall be referred to as the "External Examiner".
5. Intimation of appointment as the examiner shall be accompanied by a copy of the instructions/guidelines relating to the examination for he/she is appointed, as also the information regarding the remuneration he/she shall be entitled to draw, if he/she acts as examiner. He/She is expected to attend to and shall be required to send to the Controller of Examinations.
6. Examiners shall be appointed for examinations to be held in that academic year; however they shall be eligible for reappointment.
7. Relatives, Close Friends or next to the kin which are directly or indirectly related to the candidates shall not to be included.

RULES AND REGULATIONS / GUIDELINES FOR INTERSHIP TRAINING

PROGRAMME FINAL YEAR CANDIDATES OF B. OPTOM. (CLINICAL OPTOMETRY)

1. The students after successful completion the professional examinations for the Degree of Bachelor of Clinical Optometry as per the syllabi prescribed by the Dr. D. Y. Patil Vidyapeeth, Pune for First B. Optom., Second B. Optom. and Third B. Optom. Final Year shall undergo one year of compulsory rotatory internship training programme for the Fourth year to develop skill and acquire clinical knowledge with proficiency in managing patient independently.
2. The evaluation of the interns shall be done very carefully by the In - charge, Internship Training Programme and the Head of the concerned department on the basis of the skill, knowledge and ability to handle the cases independently. The Director / Principal of the college shall have to monitor Internship Training Programme in collaboration with all Heads of the Departments. The Incharge, Internship Training Programme, Heads of the Departments and the In-charge / off-campus Optometry In-charge of the institution shall be responsible for the maintenance of standard and records of the intern's on-Campus and off-Campus. Any deviation / alteration in the training programme without the knowledge of the Dr. D. Y. Patil Institute of Optometry shall not be permit under any circumstances and shall not accept any responsibility in respect of any deviation/alteration in the training programme.

The programme of internship shall be as under: **GENERAL –**

1. Internship is a phase of mandatory training, on full time basis, where in a candidate is expected to conduct actual Clinical Optometry practice, with fair independence in clinical decision making in low task cases whereas to work under supervision at high task areas so that at the end of Internship he/she is capable to practice Optometry profession independently.
2. Since Optometry profession does not have a Council to regulate the education, till such Council is formed; the Rules and Regulations recommended by the Indian Optometric Association [I.O.A.] affiliated to the World Council of Optometry (W.C.O.) and regulating body (A.S.C.O.) which is accepted by the University shall be implemented. The Internship programme shall mainly focus on acquisition of specific skills listed in the major areas of training by “hands on” experience and also on ability to conduct successfully a scientific project during this period.

3. The off-campus Optometry In-charge of the college / Hospital / Optical Outlet shall be responsible for implementation of Internship programme and also for the issue of Internship completion certificate.
4. The Internship staff In-Charge shall be responsible for the maintenance of the standard and the records of the interns. Internship shall commence not later than One week from the day of declaration of results of IIIrd year VI semester examination.
5. It shall be binding on the candidate to follow strictly, the code of conduct prescribed by the Indian Optometric Association (I.O.A.), Association of Schools & Colleges of Optometry (A.S.C.O.) and accepted by the Vidyapeeth. Any breach in the conduct / discipline shall disqualify the candidate from pursuing Internship for a period of One week to One month or more depending upon the gravity of breach of conduct. Stipend is recommended during the Internship.
6. Compulsory Internship shall include rotational clinical assignments, administrative skills and a scientific project over a period of 52 weeks. On successful completion of Internship, to the satisfaction of the Heads of various Dept. of and the Dean/Principal of the college the Internship completion certificate shall be issued by the college and it will be forwarded to the Vidyapeeth for the award of Bachelor of Clinical Optometry Degree.

OBJECTIVES –

At the end of Internship programme, the candidate shall be able to-

1. Correction of Refractive errors of the Eye and prescription for the Spectacles.
2. Thorough Detection of Ocular Diseases related to Systemic and Neurological diseases with aid and knowledge of latest Hi-tech. Medical Equipments.
3. Designing and fitting of contact lenses, specialized custom lens for computers application and training and use for Low Vision Patient / AIDS and their Rehabilitation.
4. Diagnosis and Clinical Orthoptics treatment, home exercises for Oculomotor malfunctions such as heterophoria and strabismus.
5. Primary eye care services and vision screening in schools, colleges, urban slums, rural areas and occupational Optometry in industries.
6. Optometric counseling of patients with Partial sight, color blindness and hereditary vision defects.

7. Evaluation of health status and pathological conditions of the eye and visual system and referral of patients to specialist at the appropriate stages.
8. Artificial Eyes dispensing and designing of Ocular prosthesis.

START OF INTERNSHIP PROGRAMME :

The programme will commence within 1st week of July/August of the same academic year after the declaration of IIIrd Year B. Optom. (Clinical Optometry) result by the Vidyapeeth. Before commencement of the Internship Training Programme, the Principal and Internship programme Staff incharge shall conduct one day Orientation programme to orient the internees to get acquainted with the details of Internship Training Programme. The Orientation programme shall cover in brief topics like Logbook and recording of patient details, Research and Project methodology, Hands-on clinical practice, Medico-legal issues, Rehabilitation of patients, Mandatory Skills to be acquired, Social and ethical aspects, Patient Management. It shall be mandatory for the internees to attend the Orientation programme. The period of one day will taken as separate training day in the period of 1 Year Internship (12 months clinical internship or 9 months clinical + 3 months optical dispensing internship).

INTERNSHIP SCHEDULE -

Candidate shall be posted to six Rotational Clinical assignments of total 52 Weeks, including administrative skills pertaining to Optometry practice.

Sr. No.	Placement
1	Refraction and Ophthalmic Dispensing Optics
2	Contact Lens and Specialized Advance Fittings
3	Orthoptics and Binocular Vision
4	Low Vision Subjects and Aids
5	Anterior Segment Examination and Diseases
6	Retina & Posterior Segment

DURING THE INTERNSHIP, STUDENT MUST CONDUCT FOLLOWING PROCEDURES –

1) Refraction and Ophthalmic Dispensing Optics-

Trail sets components uses and application, JCC Test, Stenopic slit and pin-hole uses and application of contrast sensitivity and color vision tests, Stereo-Acuity and Brightness acuity Tests, Macular function and other specialized tests.

2) Objective Refraction and other tests.

Retinoscopy-Wet and Dry type, Direct and In-Direct Retinoscopy, Various type of Retinoscopy Techniques, Auto-refraction, Keratometer and automated devices, Perimetry, Corneal Topography assessment technique and measurements, Tonometry and various techniques, Aesthsimetry etc.

3) Specialized procedure-Orthoptics and Binocular Vision therapy

Fully able to apply the use of Synaptophore machine in clinics, Prism bar, Maddox Rod, Wing and IPD and RAF ruler applications, Cam Stimulator, Prisms and filters tests etc.

4) Specialized procedures-Contact lens and Contrast Sensitivity

Slit –lamp Observation Techniques, Keratometer, Burton Lamp technique, Computerized Topography, spectrometry, Tear Film Assessment tests and various fitting techniques and methodology for Soft and RGP lens, Keratoconus fittings, Monovision C. L. Fittings, Toric C. L. Fittings and other specialized fittings

5) Specialized procedures- Low Vision Aids and Evaluation

Latest instruments in L.V.A-Optical, electro-optical and Non Optical AIDS Various Methods with Psychology for assessment and treatment with Rehabilitation Protocol and Follow-up Regimen

6) Community Optometry and Nutrition-

Vision screening and analysis and treatment in the form Glasses and other aids for achieving National Programme of blind of VISION2020

- a) Collect, analyze, interpret and present simple community and hospital based data,
- b) participate as a member in copartnership in the Vision Rehabilitation work in community
- c) participate in the programmes in prevention and control of locally prevalent Eye disorders,
- d) be capable of conducting survey and employ its findings as a measures towards arriving at Ocular and systemic functional diagnosis
- e) Provide Nutritional and Ocular education to an all.

TO ASSIST IN PROCEDURES -

- 1) Minor Eye Operations and Ocular Prosthesis and management
- 2) Sports Vision and therapy.
- 3) Computer vision syndrome management
- 4) Disaster management and Industrial Eye wear designing and Protection.

EVALUATION SCHEME –

Skills during Clinical Objective and Social Subjective Evaluation shall include following of all the above mentioned major subjects for clinical skills and applications for the same in various set -ups rural and urban Optometry and Ophthalmic centers alike.

LEAVE FOR INTERNS -

An internee shall be entitled for maximum 12 days leave during 1 year period of internship posting. An internee will not be permitted to avail more than 2 days leave in any department. Period of leave in excess of 2 days in a department will have to be repeated in the same department. Under any circumstances this period will not be condoned by any authority.

CBCS PATTERN SYLLABUS FOR B. OPTOMETRY

B. OPTOM. 1st YEAR, 1st SEMESTER CREDITS

Paper	Course Code	Course Title	Theory/ Lecture (Hours)	Credits	Practicals/ Clinical Rotation (Hours)	Credits	Total Hours	Total Credit Points	Scheme of Examination		
									Internal Assessment Marks	University Marks	Total Marks
1	BOPT 101	General Anatomy	45	3	30	1	75	4	50	50	100
2	BOPT 102	General Physiology	45	3	30	1	75	4	50	50	100
3	BOPT 103	Basic Optics (Physical & Geometrical Optics)	60	4	30	1	90	5	50	50	100
4	BOPT 104	Dispensing Optics-I	60	4	30	1	90	5	50	50	100
5	BOPT 105	English & Communication Skills	30	2	0	0	30	2	100	0	100
#	BOPT 106	Gender Sensitization	15	0	0	0	15	0	0	0	0
Total			240+15*	16	120	4	375	20	300	200	500

B. OPTOM. 1st YEAR, 2nd SEMESTER CREDITS

Paper	Course Code	Course Title	Theory / Lecture (Hours)	Credits	Practicals / Clinical Rotation (Hours)	Credits	Total Hours	Total Credit Points	Scheme of Examination		
									Internal Assessment Marks	University Marks	Total Marks
1	BOPT 201	Ocular Anatomy & Ocular Physiology	60	4	30	1	90	5	50	50	100
2	BOPT 202	Basic Biochemistry & Basic Pharmacology	60	4	30	1	90	5	50	50	100
3	BOPT 203	Basic Pathology & Basic Microbiology	60	4	30	1	90	5	50	50	100
4	BOPT 204	Ophthalmic Optics	45	3	30	1	75	4	50	50	100
5	BOPT 205	Computer for Optometry	0	0	30	1	30	1	100	0	100
Total			225	15	150	5	375	20	300	200	500

B. OPTOM. 2nd YEAR, 3rd SEMESTER CREDITS

Paper	Course Code	Course Title	Theory/ Lecture (Hours)	Credits	Practicals/ Clinical Rotation (Hours)	Credits	Total Hours	Total Credit Points	Scheme of Examination		
									Internal Assessment Marks	University Marks	Total Marks
1	BOPT 301	Visual Optics-I & Optometric Instruments	60	4	60	2	120	6	50	50	100
2	BOPT 302	Dispensing Optics-II	45	3	30	1	75	4	50	50	100
3	BOPT 303	Ocular Disease-I & Clinical Examination of Eye	60	4	60	2	120	6	50	50	100
4	BOPT 304	Indian Medicine & Telemedicine	30	2	0	0	30	2	100	0	100
5	BOPT 305	Clinical Optometry - I	0	0	60	2	60	2	0	100	100
Total			195	13	210	7	405	20	250	250	500

B. OPTOM. 2nd YEAR, 4th SEMESTER CREDITS

Paper	Course Code	Course Title	Theory/ Lecture (Hours)	Credits	Practicals/ Clinical Rotation (Hours)	Credits	Total Hours	Total Credit Points	Scheme of Examination		
									Internal Assessment Marks	University Marks	Total Marks
1	BOPT 401	Visual Optics-II	45	3	30	1	75	4	50	50	100
2	BOPT 402	Optometric Investigation	45	3	30	1	75	4	50	50	100
3	BOPT 403	Optometric Optics	45	3	30	1	75	4	50	50	100
4	BOPT 404	Low Vision Aids	45	3	30	1	75	4	50	50	100
5	BOPT 405	Ocular Diseases-II	45	3	30	1	75	4	50	50	100
#	BOPT 406	Environmental Sciences	15	0	30	0	45	0	0	0	0
Total			225+15*	15	150+30*	5	420	20	250	250	500

B. OPTOM. 3rd YEAR, 5th SEMESTER CREDITS

Paper	Course Code	Course Title	Theory/ Lecture (Hours)	Cre- dits	Practicals/ Clinical Rotation (Hours)	Cre- dits	Total Hours	Total Credit Points	Scheme of Examination		
									Internal Assessment Marks	Univer- sity Marks	Total Marks
1	BOPT 501	Contact Lens-I	60	4	30	1	90	5	50	50	100
2	BOPT 502	Orthoptics and Binocular Vision	60	4	30	1	90	5	50	50	100
3	BOPT 503	Major Eye Diseases & Systemic Diseases	60	4	60	2	120	6	50	50	100
4	BOPT 504	Public Health & Community Optometry	30	2	0	0	30	2	50	50	100
5	BOPT 505	Research Methodology & Biostatistics	30	2	0	0	30	2	50	50	100
Total			240	16	120	4	360	20	250	250	500

B. OPTOM. 3rd YEAR, 6th SEMESTER CREDITS

Paper	Course Code	Course Title	Theory/ Lecture (Hours)	Cre- dits	Practicals/ Clinical Rotation (Hours)	Cre- dits	Total Hours	Total Credit Points	Scheme of Examination		
									Internal Assessment Marks	Univer- sity Marks	Total Marks
1	BOPT 601	Contact Lens-II	45	3	30	1	75	4	50	50	100
2	BOPT 602	Advance Orthoptics	45	3	30	1	75	4	50	50	100
3	BOPT 603	Applied Optometry (Pediatric, Occupational & Geriatric Optometry)	90	6	60	2	150	8	50	50	100
4	BOPT 604 A	Basic Accountancy	15	1	0	0	15	1	50	0	50
	BOPT 604 B	Law for Optometry	15	1	0	0	15	1	50	0	50
5	BOPT 605 A	Medical Psychology	15	1	0	0	15	1	50	0	50
	BOPT 605 B	Hospital Procedures and Public Relations	15	1	0	0	15	1	50	0	50
Total			240	16	120	4	360	20	350	150	500

B. OPTOM. 4th YEAR, 7th & 8th SEMESTER CREDITS

Paper	Course Code	Course Title	Theory/ Lecture (Hours)	Credits	Practicals/ Clinical Rotation (Hours)	Credits	Total Hours	Total Credit Points	Scheme of Examination		
									Internal Assessment Marks	University Marks	Total Marks
1	BOPT 701	B. Optom. Internship (Written Exam)	0	0	600	20	600	20	0	100	100
2	BOPT 702	B. Optom. Internship (Clinical Technical Viva)	0	0	600	20	600	20	0	100	100
3	BOPT 703	Research Project (Project Presentation Dissertation Log)	0	0	120	4	120	4	0	100	100
4	BOPT 704	Research Project (Case Workup)	0	0	120	4	120	4	0	100	100
		Total	0	0	1440	48	1440	48	0	400	400
		Theory Grand Total	1365+30*	91	2310+30*	77	3675+60*	168	1700	1700	3400

B. Optom. Total 168 Credits

1 Credit = 15 Hrs. of Theory Lectures

0.5 Credit = 15 Hrs of Practical Sessions

Mark Indicates Audit Course for which there is no assessment

* Total Audit Course Hours 60 which are non-creditable

BOPT 501: CONTACT LENS – I

Scope and Objective:

The subject covers all basic aspects of Contact Lenses. With a revision of Ocular Anatomy & Physiology, Visual Optics, the course will also deal with Optics of Contact Lenses, raw materials and pre- fitting examination.

Text and Reference Books:

- a. Contact Lens- Dr. V.K. Dada
- b. Contact Lenses Practice- Robbert B. Mandell
- c. R.G.P. Lens Fitting, Carolyn Begley, Butterworth Heinemann
- d. Contact Lenses – Stone J and Phillips A.J. 3rd Edition, Butterworth, 1989
- e. IACLE Modules

COURSE PLAN

1. Introduction to Contact lenses
 - 1.1 Definition
 - 1.2 Classification / Types
2. History of Contact Lenses
3. Optics of Contact Lenses
 - 3.1 Magnification & Visual field
 - 3.2 Accommodation & Convergence
 - 3.3 Back & Front Vertex Power / Vertex distance calculation
4. Review of Anatomy & Physiology of
 - 4.1 Tear film
 - 4.2 Cornea
 - 4.3 Lids & Conjunctiva
5. Introduction to CL materials
 - 5.1 Monomers, Polymers
6. Properties of CL materials
 - 6.1 Physiological (Dk, Ionicity, Water content)
 - 6.2 Physical (Elasticity, Tensile strength, Rigidity)
 - 6.3 Optical (Transmission, Refractive index)

7. Indications and contraindications
8. Parameters / Designs of Contact Lenses & Terminology
9. RGP Contact Lens materials
10. Manufacturing Rigid and Soft Contact Lenses – various methods
11. Pre-Fitting examination – steps, significance, recording of results
12. Correction of Astigmatism with RGP lens
13. Types of fit – Steep, Flat, Optimum – on spherical cornea with spherical lenses
14. Types of fit – Steep, Flat, Optimum – on Toric cornea with spherical lenses
15. Calculation and finalizing Contact lens parameters
16. Ordering Rigid Contact Lenses – writing a prescription to the Laboratory
17. Checking and verifying Contact lenses from Laboratory
18. Modifications possible with Rigid lenses
19. Common Handling Instructions
 - 19.1 Insertion & Removal Techniques
 - 19.2 Do's and Don'ts
20. Care and Maintenance of Rigid lenses
 - 20.1 Cleaning agents & Importance
 - 20.2 Rinsing agents & Importance
 - 20.3 Disinfecting agents & importance
 - 20.4 Lubricating & Enzymatic cleaners
21. Follow up visit examination
22. Complications of RGP lenses

BOPT 502: ORTHOPTICS & BINOCULAR VISION

Scope and Objective:

A sound theoretical knowledge of binocular vision paves the way for clear understanding of the physiology of the eye in the clinics. The theories of binocular vision and basics of Orthoptics included in the theory, forms the background for the student to understand binocular vision and ocular motility disorders.

Text and Reference Books:

- a. Comprehensive review of Orthoptics and ocular motility- theory, therapy, surgery- 2nd edition, Jane Hurrt, Antonia Rasicovia, Charles Windsor- CV Mosby
- b. Von Noorden's Binocular Vision and Ocular Motility- Gunter K von Noorden, 2nd edition, C.V. Mosby & Co
- c. Handbook of Orthoptic principles – GT Willonghby Cashell, Isobel Durran, Churchill Living stone
- d. Binocular Vision – Foundations & Applications
- e. Strabismus- Fourth Edition- Julio Prieto Diaz- Butterworth Heinemann

COURSE PLAN

1. Binocular Vision and Space perception.
 - 1.1 Relative subjective visual direction.
 - 1.2 Retino motor value
 - 1.3 Grades of BSV
 - 1.4 SMP and Cyclopean Eye
 - 1.5 Correspondence,
 - 1.6 Fusion, Diplopia, Retinal rivalry
 - 1.7 Horopter
 - 1.8 Physiological Diplopia and Suppression
 - 1.9 Stereopsis, Panum's area, BSV.
 - 1.10 Stereopsis and monocular clues - significance.
 - 1.11 Egocentric location, clinical applications.
 - 1.12 Theories of Binocular vision.

2. Anatomy of Extra Ocular Muscles.
 - 2.1 Recti's and Obliques, LPS.
 - 2.2 Innervation & Blood Supply.
3. Physiology of Ocular movements.
 - 3.1 Center of rotation, Axes of Fick.
 - 3.2 Action of individual muscle.
4. Laws of ocular motility
 - 4.1 Donder's and Listing's law
 - 4.2 Sherrington's law
 - 4.3 Hering's law
5. Uniocular& Binocular movements - fixation, saccadic & pursuits.
 - 5.1 Version & Vergence.
 - 5.2 Fixation & field of fixation
6. Near Vision Complex Accommodation
 - 6.1 Definition and mechanism (process).
 - 6.2 Methods of measurement.
 - 6.3 Stimulus and innervation.
 - 6.4 Types of accommodation.
 - 6.5 Anomalies of accommodation – aetiology and management.
7. Convergence
 - 7.1 Definition and mechanism.
 - 7.2 Methods of measurement.
 - 7.3 Types and components of convergence - Tonic, accommodative, fusional, proximal.
 - 7.4 Anomalies of Convergence – etiology and management.
8. Sensory adaptations
 - 8.1 Confusion
9. Suppression
 - 9.1 Investigations
 - 9.2 Management
 - 9.3 Blind spot syndrome

- 10. Abnormal Retinal Correspondence
 - 10.1 Investigation and management
- 11. Eccentric Fixation
 - 11.1 Investigation and management
- 12. Amblyopia
 - 12.1 Classification
 - 12.2 Etiology
 - 12.3 Investigation
 - 12.4 Management

BOPT 503-MAJOR EYE DISEASE & SYSTEMIC DISEASES

MAJOR EYE DISEASE

Scope and Objective:

To learn in details of the etiology, differential diagnosis and management aspects of major eye diseases which are main causes of blindness in India. The scope of the course should cover how an Optometrist can play a vital role in diagnosis and management of such diseases when he is working as part of a medical team or even in private clinic. Points about urgent, emergency and routine referral of patients with diagnosed of such diseases should be understood by the student.

Text and Reference Books:

- a) Manual of Ocular fundus examination- Theo Dorion- Butterworth Heinemann
- b) Cataract- William Douthwaite, Butterwoth Heinemann
- c) Glaucoma- A colour manual for diagnosis and treatment, 2nd edition- Kanski, Salmon, Butterworth Heinemann
- d) The Glaucoma handbook- Anthony Litwak, Butterworth Heinemann
- e) Maclar Disorders- Anthony Cavallerano, Butterworth Heinemann

COURSE PLAN

1. Cataract
2. Glaucoma
3. Retinal detachment
4. Corneal ulcer and opacities
5. Visual loss - ophthalmic lesion
6. Diabetic Retinopathy
7. Macular degeneration
8. Chemical burns

SYSTEMIC DISEASE

Scope and Objective:

The course aims at acquainting the students with certain common medical ailments, which have serious ocular involvement. Basic fact about the patho-physiology of the disease, the clinical features, essentials of diagnosis and basic management will be emphasized with special reference to the eye.

Text and Reference Books:

- a. Davidson's principles and practice of medicine- J. Macleod C. Edwards & Ian Booheir, ed. John Macleod, 14th edition ELBS/Churchill Livingstone
- b. Pathologic Basis of Disease – Robbins, Cottran & Kumar, Igaku-Shoin / Saunders
- c. Parson's Disease of the eye- Stephen J.H.Miller 17th edition, Churchill Livingstone
- d. Clinical Ophthalmology- Jack Kanski, 1st edition, Butterworth
- e. Essential Immunology- Ivan M Roitt: 6th edition, ELBS/Blackwell Scientific Publications
- f. Parasitology- K.D. Chatterji, 12th edition
- g. Medical Handbook of common clinical emergencies- Publishers Ariga, Gowda, Sundar, 2nd edition, Affiliated East- West Press
- h. Drugs Medications and eye- Michael Doughty- Butterworth Heinemann
- i. Ocular Manifestations of systematic diseases- Bernard Blaustein- Butterworth Heinemann

COURSE PLAN

1. Arterial Hypertension Patho-physiology, classification, clinical examination, diagnosis, complications, management, Hypertension and eye
2. Diabetes Mellitus Pathology, classification, clinical features, diagnosis, complications, management, Diabetes mellitus and the eye
3. Acquired Heart Disease – Embolism Rheumatic fever - Patho-physiology, classifications, diagnosis, complications, management. Embolism Sub-acute bacterial endocarditis

4. Cancer- Introduction Definitions, nomenclature, characteristics of benign and malignant neoplasm Grading of staging of cancer, diagnosis, principles of treatment Neo-plasia and the eye
5. Connective Tissue Diseases Anatomy and patho – physiology: Arthritis Eye and connective tissue diseases
6. Thyroid Disease
Anatomy and physiology of the thyroid gland, classification of thyroid disease Diagnosis, complications, clinical features, management, thyroid disease and the eye.
7. Tuberculosis Etiology, pathology, clinical features, pulmonary tuberculosis, diagnosis, complications, treatment, tuberculosis and the eye
8. Helminthiasis Classification of helminthiasis diseases, Schistosomiasis, principles of diagnosis and management Helminthic disease and the eye (Taenia, Echinococcus, Larva migrants)
9. Common Tropical Medical Ailments (Malaria, Leprosy) Introduction to tropical diseases, malaria
Tropical diseases and the eye- leprosy, toxoplasmosis, syphilis, trachoma
10. Malnutrition Etiology, protein energy malnutrition, water electrolytes, minerals, vitamins, nutritional disorders and the eye.
11. Introduction to Immunology Introduction, components of the immune system, principal of immunity in health, immunology in disease, immunology and the eye
12. Neurological Disorders- Stroke/C.V.A.
13. General Medical Emergencies- First Aid Ocular/ General
14. Genetics Introduction to Genetics Organization of the cell Chromosome structure and basic principles of genetics Gene structure and basic principles of genetics Genetic disorders and their diagnosis Genes and the eye
Genetic Counseling and genetic engineering

BOPT-504 PUBLIC HEALTH & COMMUNITY OPTOMETRY

Scope and Objective:

The objective of the course is to enable the student to identify and manage the common and important ocular problems in the community and to investigate an epidemic of ocular diseases and to institute control measures. It is also to assess the effect of social, cultural, and economic characteristics of the community on its health status with special reference to ocular diseases.

- To organize health education programs in the community.
- To elicit participation in national program of prevention of blindness
- To apply the principles of community screening for the diagnosis of visual disorders
- To apply the epidemiological principles to assess the risk factors and for the control of the diseases.

Text and Reference Books:

- a. Oxford Text Book of Public Health and Preventive Medicine (Vol. I to IV)
- b. Maxcy and Rosenau : Textbook of public health and Preventive Medicine
- c. New Comb R.D. and Jolley JL: Public health and Community Optometry
- d. Textbook of public and Preventive Medicine- (J.E. Part)
- e. Environmental Vision- Donald Pitts – Butterworth Heinemann
- f. Work and the eye- Rachael North- Butterworth Heinemann
- g. Ocular immunology in health and disease- Steven Koevary- Butterworth Heinemann
- h. Ophthalmic research and epidemiology- Stanley Hatch-Butterworth Heinemann
- i. Professional communication in eye care- Carolyn Begley-Butterworth Heinemann

COURSE PLAN

1. PHILOSOPHY OF PUBLIC HEALTH

- a. History of public health medicine
- b. History of public health optometry (including epidemiology, manpower, projections, community reimbursement mechanisms)

2. HEALTH CARE SYSTEMS

- a. Organization of health services (principles of primary, secondary and tertiary care)
- b. Planning of health services (including relevant legislation and implications to Optometric practice)
- c. Health economics
- d. Health manpower protection and in practice of Ophthalmology
- e. Health manpower protection and in the practice of ophthalmology
- f. Third party involvement in financing health care services (including both governmental and non-governmental)
- g. Quality assurance in patient care services

3. MODES OF HEALTH AND VISION CARE DELIVERY

- a. Solo and group practice modes
- b. Multidisciplinary, interdisciplinary and institutional practice modes
- c. Optometry's role as a primary health care profession

4. PREVENTIVE OPHTHALMOLOGY

- a. History of Public- Health
- b. History of Public health and epidemiology
- c. Organization of eye care services:
Primary Eye Care
Secondary Eye Care
Tertiary Eye Care
- d. Health Economics
- e. Quality Assurance in Eye Care Services
- f. Modern Management Technique in Curative Services
- g. Community Optometry- Introduction
- h. Sol and Group Practice Modes

- i. Multidisciplinary Interdisciplinary Institutional Practice Modes
- j. Optometry in Public Sector
- k. Optometry in Private Sector
- l. Levels of Prevention in Ophthalmic Disease
- m. Survey & Methods of knowing Burden of Ophthalmic Disease
- n. Role and Scope of Optometrist in P.H Centre
- o. Role and Scope of Optometrist in Rural Centre
- p. School Health Services in Optometry
- q. National Programme of the Control of Blindness
- r. Vision 2020: The Right to Sight

5. LECTURES ON PUBLIC HEALTH

- a. Classification of Foods and Dietetics
- b. Nutrients
- c. Vitamins, Fat and Water Soluble
- d. Vitamin A Sources, Deficiencies and Assessment of Defines
- e. Vitamin A Supplementing Methods of Urban and Rural Areas
- f. Balanced Diet
- g. Nutritional Problem in Public Health
- h. P.E.M and Social Aspects of Nutrition
- i. Therapeutic Diet
- j. Community Nutrition Programmes

BOPT-505 RESEARCH METHODOLOGY & BIOSTATISTICS

Scope and Objective:

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.

Text and Reference Books:

- a. Health research methodology: a guide for training in research methods.
- WHO 2nd Edition
- b. Research Methodology Methods and Techniques – C R Kothari,
Gaurav Garg
- c. Methods in Biostatistics – B K Mahajan

COURSE PLAN

RESEARCH METHODOLOGY

1. Introduction to research methods
2. Identifying research problem
3. Ethical issues in research
4. Research design
5. Types of Data
6. Research tools and Data collection methods
7. Sampling methods
8. Developing a research proposal

BIOSTATISTICS

1. Basics of Biostatistics
 - 1.1 Introduction of Biostatistics
 - 1.2 Measures of Morality
 - 1.3 Sampling
 - 1.4 Statistical significance
 - 1.5 Correlation
 - 1.6 Sample size determination.
 - 1.7 Statistics – Collection of Data - presentation including classification and diagrammatic representation – frequency distribution.
Measures of central tendency; measures of dispersion.
 - 1.8 Theoretical distributions.
 - 1.8.1 Binomial
 - 1.8.2 Normal
 - 1.8.3 Sampling –necessity of methods and techniques.
 - 1.8.4 Chi. Square test (2 x 2)
2. Hospital Statistics
3. Use of computerized software for statistic

BOPT-601 CONTACT LENS II

Scope and Objective:

The subject covers all basic aspects of Contact Lenses. With a revision of Ocular Anatomy and Physiology, Visual Optics, the course will also deal with Optics of Contact Lenses, raw materials and prefitting examination.

Text and Reference Books:

- a. Contact Lenses- Dr. V.K. Dada
- b. IACLE modules
- c. Contact Lenses Practice- Robbert B. Mandell
- d. Contact Lenses – Stone J. and Phillips A. J., 3rd EDITION, Butterworths, 1989
- e. The Contact lens manual- Andrew Gasson- Butterworth Heinemann
- f. Corneal Physiology and disposable contact lenses- Herbert Kaufman, Hikaru Hamano, Butterworth Heinemann
- g. Anterior segment complications of contact lens wear (Second Edition)- Joel A Silbert- Butterworth Heinemann
- h. Marketing, Managing and Contact Lenses- Robert Koetting, Butterworth Heinemann.

COURSE PLAN

1. SCL Materials & Review of manufacturing techniques
2. Comparison of RGP vs. SCL
3. Pre-fitting considerations for SCL
4. Fitting philosophies for SCL
5. Fit assessment in Soft Contact Lenses: Types of fit – Steep, Flat, Optimum
6. Calculation and finalizing SCL parameters
 - 6.1 Disposable lenses
 - 6.2 Advantages and availability
7. Soft Toric CL
 - 7.1 Stabilization techniques
 - 7.2 Parameter selection
 - 7.3 Fitting assessment
8. Common Handling Instructions
 - 8.1 Insertion & Removal Techniques
 - 8.2 Do's and Don'ts

9. Care and Maintenance of Soft lenses
 - 9.1 Cleaning agents & Importance
 - 9.2 Rinsing agents & Importance
 - 9.3 Disinfecting agents & importance
 - 9.4 Lubricating & Enzymatic cleaners
10. Follow up visit examination
11. Complications of Soft lenses
12. Therapeutic contact lenses
 - 12.1 Indications
 - 12.2 Fitting consideration
13. Specialty fitting
 - 13.1 Aphakia
 - 13.2 Pediatric
 - 13.3 Post refractive surgery
14. Management of Presbyopia with Contact lenses
15. Scleral Lenses
16. Ortho- Keratology and myopia
17. Role of Contact Lenses in Sports vision

BOPT-602 ADVANCED ORTHOPTICS

Scope and Objective:

A sound theoretical knowledge of the binocular vision paves the way for clear understanding of the physiology of the eye in the clinics. The theories of binocular vision and basics of Orthoptics included in the theory, forms the background for the student to understand binocular vision and ocular motility disorders.

Text and Reference Books:

- a. Comprehensive review of orthoptics and ocular motility- theory, therapy, surgery- 2nd edition, Jane Hurrt, Antonia Rasicovia, Charles Windsor- CV Mosby & Co
- b. Von Noorden's Binocular Vision and Ocular Motility- Gunter K von Noorden, 2nd edition, C.V. Mosby
- c. Handbook of Orthoptic principles- G.T. Willoughby Cashell, Isobel Durran, Churchill Livingstone
- d. Binocular Vision- Foundations & Applications

COURSE PLAN

1. Neuro-muscular anomalies
 - 1.1 Classification and etiological factors
2. History – recording and significance.
3. Convergent strabismus
 - 3.1 Accommodative convergent squint
 - 3.1.1 Classification
 - 3.1.2 Investigation and Management
 - 3.2 Non accommodative Convergent squint
 - 3.1.3 Classification
 - 3.1.4 Investigation and Management
4. Divergent Strabismus
 - 4.1 Classification
 - 4.2 A & V phenomenon
 - 4.3 Investigation and Management
5. Vertical strabismus
 - 5.1 Classification
 - 5.2 Investigation and Management

6. Paralytic Strabismus
 - 6.1 Acquired and Congenital
 - 6.2 Clinical Characteristics
7. Distinction from comitant and restrictive Squint
8. Investigations
 - 8.1 History and symptoms
 - 8.2 Head Posture
 - 8.3 Diplopia Charting
 - 8.4 Hess chart
 - 8.5 PBCT
 - 8.6 Nine directions
 - 8.7 Binocular field of vision
9. Amblyopia and Treatment of Amblyopia
10. Nystagmus
11. Non-surgical Management of Squint
12. Restrictive Strabismus
 - 12.1 Features
 - 12.2 Musculo-fascial anomalies
 - 12.3 Duane's Retraction syndrome
 - 12.4 Clinical features and management
 - 12.5 Brown's Superior oblique sheath syndrome
 - 12.6 Strabismus fixus
 - 12.7 Congenital muscle fibrosis
13. Surgical management

**BOPT-603 APPLIED OPTOMETRY
(PEDIATRIC, OCCUPATIONAL & GERIATRIC OPTOMETRY)**

PEDIATRIC OPTOMETRY

Scope and Objective:

The scope of this subject is to train optometrists to develop a systematic way of dealing with children below 12, so as to implement primary eye care and have better, specialized management of anomalies.

Text and Reference Books:

- a. Pediatric Optometry- Jerome Rosner, Butterworth Heinemann, London 1982 Binocular Vision and Ocular Motility- Von Noorden GK Burian Von Noorden's, 2nd Ed. C.V. Mosby, St. Louis, 1980
- b. Assessing children's vision- Susan Leat- Butterworth Heinemann
- c. Clinical Pediatric optometry- Leonard Press, Bruce Moore- Butterworth Heinemann
- d. Pediatric Neuro- Ophthalmology- Robert Tomsak- Butterworth Heinemann
- e. Vision Problems in childhood- Terry Buckingham, Butterworth Heinemann

COURSE PLAN

1. History- Genetic factors, prenatal factors, Post natal factors
2. Measurement of visual acuity
3. Normal appearance, pathology and structural anomalies of: Orbit, Eye lids, lachrymal system, Conjunctiva, Cornea, Sclera, Anterior chamber, Uveal tract, pupil, Lens, vitreous, fundus.
4. Oculomotor system
5. Measurement of refractive status
6. Determining binocular status
7. Determining sensory motor adaptability
8. Remedial and compensatory treatment of strabismus and nystagmus
12. Myopia, Pseudo myopia, hyperopia, Astigmatism, Anisometropia, Amblyopia
13. Vergence and accommodation
14. Pediatric contact lenses
15. Low vision care in pediatric age group

OCCUPATIONAL OPTOMETRY

Scope and Objective:

The objective is to prepare the student to know the visual requirements of various jobs, effects of physical, chemical, and other hazards on eye and vision. The Optometrists should be able to identify occupational causes of visual and eye problems; to be able to identify occupational causes of visual and eye problems; to be able to prescribe suitable corrective lenses and eye protective wear and be able to set visual requirements, standards for different jobs.

Text and Reference Books:

- a. Encyclopedia of Occupational Health and Safety, ILO Publications, 1983, Vol. I and II
- b. IES Lighting Handbook 1984, IES Publication, NY 1985
- c. IES Lighting Education Introductory Lightning, 1985, IES Publications N.Y. 1985
- d. Guide to Occupational and other Visual needs- Holmes C. Jolliff H & Gregg J. 1958
- e. Occupational eye diseases and injuries- Joseph Minton, William Heinemann Medical Book, 1949
- f. Environmental Vision- Donald Pits- Butterworth Heinemann
- g. Work and the eye- Rachael North- Butterworth Heinemann
- h. Ocular immunology in health and disease- Steven Koevary- Butterworth Heinemann
- i. Ophthalmic research and epidemiology- Stanley Hatch- Butterworth Heinemann
- j. Professional communication in eye care- Carolyn Begley- Butterworth Heinemann
- k. Sports Vision- D.F.C Loran, CJ MacEween, Butterworth Heinemann

COURSE PLAN

1. Introduction to occupational health, hygiene and safety International bodies like ILO, WHO, National bodies like Labor Institutes, National Institutes of Occupational Health, National Safety Council
2. Acts and Rules Factories Act and Rules Workmen's Compensation Act, ESI Act
3. Occupational diseases / occupation related diseases caused by physical agents, chemical agents and biological agents.

4. Occupational hygiene/environmental monitoring Recognition, evaluation, and control of hazards Illumination- definition, measurements and standards
5. Occupational safety Causes of accidents, Vision, lighting color and their role Accident Analysis, Accidents prevention
6. Ocular and visual problems of occupation Electromagnetic radiation Ionizing, Non- Ionizing- Infra Red, Ultra Violet, Microwave, Laser injuries- Medical Chemical Toxicology- metals, chemicals
7. Prevention of occupational diseases Medical examination/medical monitoring Pre-employment/ pre- placement Periodic
8. Personal protective equipment General Goggles, face shields Selection and use Testing for standards
9. Standards Visual standard for jobs
10. Problems of special occupational groups Drivers, pilots and others
11. Field work- submission of reports Visits to: Regional Labor Institute, Selected industries
12. Visual display units (terminals) VDU/VDT Contact lens and work Pesticides – general and visual and ocular defects

GERIATRIC OPTOMETRY

Scope and Objective:

The Optometric examination and management of senior citizens requires a different approach. The purpose of this course is to provide comprehensive instructions, which will guide the students to take appropriate Visual Care of the elderly.

Text and Reference Books:

- a. Vision of the Aging Patient- Hiesch M. J & Wick RE (An Optometric Symposium), 1960
- b. Vision and Aging- A.J. Rossenbloom Jr & M.W. Morgan, Butterworth Heinemann
- c. Clinical Geriatric Eye Care- Sheree Aston, Joseph Maino- Butterworth Heinemann
- d. Clinical Decision making in Optometry- Ellen Ettinger, Michael Rouse, Butterworth Heinemann

COURSE PLAN

1. Structural changes in eye
2. Physiological changes in the eye
3. Optical and refractive changes in the eye
4. Aphakia- its correction
5. Ocular diseases common in old eye, with special reference to cataract, glaucoma, macular disorders, vascular diseases of the eye
6. Contact lenses in elderly patients
7. Pharmacological aspects of ageing
8. Low vision causes, management and rehabilitation in geriatrics
9. Spectacle dispensing in elderly

BOPT-604 A BASIC ACCOUNTANCY

Text and Reference Books:

- a. Fundamental Accounting Principles - John Wild's
- b. Accounting for Non-accountants - Wayne Label

COURSE PLAN

Introduction

Terms used in accounts , Principles of accountancy

Journal and journalizing

Ledger and ledger posting

Trial balance

Subsidiary books

Bank reconciliation

Depreciation and other requirements

Balance sheets and profit and loss accounts statements

Preparation of Final accounts

Income Tax and Sales Tax (general ideas only)

Project report and financial viability of a project

Costing in practice (Buting, stock keeping, assessment of proper fees (honorarium) and costing of appliances)

Banking procedure

C-604 B LAW FOR OPTOMETRY

Text and Reference Books:

- a. Optometry Law – Stephen H Eap
- b. Law in Optometric Practice 1e - Stephen P. Taylor

COURSE PLAN

1. Medical ethics - Definition - Goal - Scope
2. Introduction to Code of conduct
3. Basic principles of medical ethics – Confidentiality
4. Malpractice and negligence - Rational and irrational drug therapy
5. Autonomy and informed consent - Right of patients
6. Care of the terminally ill- Euthanasia
7. Organ transplantation
8. Medico legal aspects of medical records – Medico legal case and type-
Records and document related to MLC

- Ownership of medical records - Confidentiality Privilege
communication - Release of medical information –

Unauthorized disclosure - retention of medical records - other various
aspects.
9. Professional Indemnity insurance policy
10. Development of standardized protocol to avoid near miss or sentinel
events
11. Obtaining an informed consent.

BOPT 605 A MEDICAL PSYCHOLOGY

Text and Reference Books:

- a. Introduction to Psychology – Morgen & King, Ciccarelli n Meyer
- b. General Psychology - Baron

COURSE PLAN

1. Introduction to Psychology-
2. Different school of thoughts
3. Role of Psychological factors in Medical Illness
4. Social Psychology and its application
5. Emotions, Motivations, Learning
6. Memory- Types of memory, Role of visual memory
7. Normality and abnormality – major and minor Psychiatric entities
8. Biology and Psychology of perception, Emphasis on visual perception
9. Patient and therapists – relationship, basic principal of interview and relationship
10. Eye diseases- their impact on the patients and their families
11. Rehabilitation of the blind – Psychosocial aspects and advance perspective.

BOPT-605 B HOSPITAL PROCEDURES AND PUBLIC RELATIONS

Text and Reference Books:

- a. Hospital Administration – DC Joshi, Mamta Joshi
- b. The Power of Public Relations – Edward Bernays

COURSE PLAN

1. Administration
2. Medical Records department
3. Reception
4. Computer Section- appointment scheduling, accounts
5. Laboratory- all investigations performed
6. Correspondence
7. Stores

PUBLIC RELATIONS

DEFINING THE SUBJECT

1. Definitions
2. Public Relations- its distinction from publicity, propaganda, and advertising
3. The universe of Public Relations- internal and external aspects of PR
4. Phases of PR - Analysis of the internal and external environment
formulating and implementing PR policy – feedback, research and evaluation
5. The benefits of PR- Image building, promotion of product or services, better employee, government and community relations

METHODS OF PUBLIC RELATIONS

1. Press Relation: Writing and issuing a press release- Press conference facility visit and open house- letters to the editor- assembling press activity
2. The printed word: Style, color and design- knowledge of typography and layout- direct mail, publicity material and house journal. Use of photographs for publication and special events

3. The spoken word: Public speaking – Microphone techniques Telephone manners
4. Radio and Other Audio media: communicating by cassettes- radio interview, discussion and other programs
5. Film and Television: Publicity and educational use of these media production and distribution
6. Research in PR: Opinion and panel research – drawing up of a questionnaire – interpreting the results

PUBLIC RELATIONS IN ACTION

1. The employee public: The working relationship - Labor management relations, establishing effective Leadership Planned effort at PR
2. The customer public: Need of customers- efficiency and effectiveness of customers severe feedback and Suggestion system
3. The government public: Knowledge of and interaction with Central Government - State Government and Municipal Governed
4. The community public: Community opinion - community relation open house and volunteer activities

SPECIALIZED PUBLIC RELATIONS

1. Public Relation for welfare agencies
2. Public Relation for Health agencies
3. Public Relation for Hospitals
4. The perspective: Rising public demands - escalating costs charitable heritages - public opinion consciousness – growing consumer movement
5. The P. R. Program: Employee relations - volunteer group's medical staff - patient sensitivity to the press and other media.