## 2. PROGRAM EDUCATION OBJECTIVES (PEOs)

The overall objective of the learning outcome-based curriculum framework (LOCF) for Bachelor of Optometry Program are as follows:

| PEO No. | Education Objective |
|---|---|
| PEO 1 | Students will be able to use their fundamental knowledge and clinical competence in vision care as and when required to achieve professional excellence. |
| PEO 2 | Students will demonstrate strong and well defined clinical / practical skills relevant to Optometry. |
| PEO 3 | Students will be able to practice the profession with highly professional and ethical attitude, strong communication skills, and effective professional skills to work in a inter-disciplinary team. |
| PEO 4 | Students will be able to use interpersonal and collaborative skills to identify, assess and formulate problems and execute the solution for all the common vision related problems. |
| PEO 5 | Students will be able to imbibe the culture of research, innovation, entrepreneurship and incubation. |
| PEO 6 | Students will be able to participate in lifelong learning process for a highly productive career and will be able to relate the concepts of vision science towards serving the cause of the society. |

## 3. GRADUATE ATTRIBUTES

| S No. | Attribute | Description |
|---|---|---|
| 1 | **Professional Knowledge** | Demonstrate **scientific knowledge and understanding to** work as a health care professional |
| 2 | **Clinical / practical skills** | Demonstrate **Clinical/ practical skills** in order to implement the preventive, assessment and management plans for quality vision care services |
| 3. | **Communication** | Ability to communicate effectively and appropriately in writing and orally to patients/clients, caregivers, other health professionals and other members of the community |
| 4. | **Cooperation/Teamwork** | Ability to work effectively and respectfully with interdisciplinary team members to achieve coordinated, high quality health care |
| 5. | **Professional ethics** | Ability to identify ethical issues and apply the ethical values in the professional life |
| 6. | **Research / Innovation-related Skills** | A sense of inquiry and investigation for raising relevant and contemporary questions, synthesizing and articulating. |
| 7. | **Critical thinking and problem solving** | Ability to think critically and apply once learning to real-life situations |
| 8. | **Reflective thinking** | Ability to employ reflective thinking along with the ability to create the sense of awareness of oneself and society |
| 9. | **Information/digital literacy** | Ability to use ICT in a variety of learning situations |
| 10. | **Multi-cultural competence** | Ability to effectively engage in a multicultural society and interact respectfully |
| 11. | **Leadership readiness/qualities** | Ability to respond in an autonomous and confident manner to planned and uncertain situations, and should be able to manage themselves and others effectively |
| 12. | **Lifelong Learning** | Every graduate to be converted into lifelong learner and consistently update himself or herself with current knowledge, skills and technologies. Acquiring Knowledge and creating the understanding in learners that learning will continue throughout life. |

## 5. PROGRAM OUTCOMES (POs):

After successful completion of Bachelor of Optometry program, students will be able to:

| PO No. | Attribute | Competency |
|---|---|---|
| PO 1 | **Professional knowledge** | Apply the **knowledge** of basic and applied sciences in the diagnosis and management of ocular/visual conditions. |
| PO 2 | **Clinical/ Technical skills** | Provide quality **eye and vision care** through comprehensive and appropriate examination, diagnosis and management of eye and vision conditions. |
| PO 3 | **Teamwork** | Demonstrate **teamwork skills** by engaging in community activities to reduce the burden of avoidable blindness, occupation related ocular disorders and promote interdisciplinary care. |
| PO 4 | **Ethical value & professionalism** | Possess and demonstrate **ethical values and professionalism** within the legal framework of the society. |
| PO 5 | **Communication** | **Communicate clearly and effectively** with patients and other health professionals for optimal health outcomes. |
| PO 6 | **Evidence based practice** | Demonstrate high quality **evidence-based practice** that leads to excellence in professional practice. |
| PO 7 | **Life-long learning** | Able to perform and disseminate at least basic research relevant to optometry and vision science and thereby engaging in **continual professional development.** |
| PO 8 | **Entrepreneurship, leadership and mentorship** | Develop an **entrepreneurial spirit** in the process of setting up optometry practice and promoting cost-effective ways of identification and management of ocular/visual conditions. |

## 6. COURSE STRUCTURE, COURSE WISE LEARNING OBJECTIVE, COURSE OUTCOMES (COs)

### SCHEME OF CURRICULUM

**SEMESTER – I**

| Course Code | Course Title | Credit Distribution (L, T, P are hours/week) | | | | Marks Distribution | | |
|---|---|---|---|---|---|---|---|---|
| | | L | T | P | CR | IAC | ESE | Total |
| ANA1103 | Anatomy | 3 | - | - | 3 | 30 | 70 | 100 |
| PHY1101 | Physiology - I | 2 | - | - | 2 | 30 | 70 | 100 |
| CSK1001 | Communication skills | 2 | - | - | 2 | 100 | - | 100 |
| OPT1101 | Physical Optics - Theory | 2 | 1 | - | 3 | 50 | 50 | 100 |
| OPT1111 | Physical Optics - Practical | - | 1 | 2 | 2 | 100 | - | 100 |
| OPT1102 | Geometric Optics - I Theory | 2 | 1 | - | 3 | 50 | 50 | 100 |
| OPT1112 | Geometric Optics - I practical | - | 1 | 2 | 2 | 100 | - | 100 |
| OPT1103 | Ocular Basic Science - I | 2 | 1 | - | 3 | 50 | 50 | 100 |
| | **Total** | **13** | **5** | **4** | **20** | **510** | **290** | **800** |
| ESE of ANA1103 & PHY1101 will be conducted out of 50 and normalized to 70.<br>ESE of OPT1101, OPT1102, OPT1103 will be conducted out of 100 and normalized to 50. | | | | | | | | |

**SEMESTER - II**

| Course Code | Course Title | Credit Distribution (L, T, P are hours/week) | | | | Marks Distribution | | |
|---|---|---|---|---|---|---|---|---|
| | | L | T | P | CR | IAC | ESE | Total |
| PHY1201 | Physiology - II | 2 | - | - | 2 | 30 | 70 | 100 |
| BIC1201 | Biochemistry | 3 | - | - | 3 | 30 | 70 | 100 |
| EIC1001 | Environmental Science and Indian constitution | 2 | - | - | 2 | 100 | - | 100 |
| OPT1201 | Geometric Optics - II Theory | 2 | 1 | - | 3 | 50 | 50 | 100 |
| OPT1211 | Geometric Optics - II practical | - | 1 | 2 | 2 | 100 | - | 100 |
| OPT1202 | Ocular Basic Science - II | 2 | 1 | - | 3 | 50 | 50 | 100 |
| OPT1212 | Clinical Optometry - Evidence and Practice | - | 1 | 4 | 3 | 50 | 50 | 100 |
| OPT1203 | Mathematics | 2 | - | - | 2 | 100 | - | 100 |
| | **Total** | **13** | **4** | **6** | **20** | **510** | **290** | **800** |
| ESE of PHY1201 & BIC1201 will be conducted out of 50 and normalized to 70.<br>ESE of OPT1201, OPT1202 will be conducted out of 100 and normalized to 50. | | | | | | | | |

**SEMESTER - III**

| Course Code | Course Title | Credit Distribution (L, T,P are hours/week) | | | | Marks Distribution | | |
|---|---|---|---|---|---|---|---|---|
| | | L | T | P | CR | IAC | ESE | Total |
| PAT2101 | Pathology | 2 | - | - | 2 | 30 | 70 | 100 |
| MCB2101 | Microbiology | 2 | - | - | 2 | 30 | 70 | 100 |
| *** **** | Open Elective - I | - | - | - | 3 | S/NS | | |
| OPT2101 | Optometric instrumentation | 2 | 1 | | 3 | 50 | 50 | 100 |
| OPT2102 | Optics of visual system | 1 | 1 | - | 2 | 50 | 50 | 100 |
| OPT2103 | Optical dispensing - I | 1 | 1 | - | 2 | 50 | 50 | 100 |
| OPT2104 | Refractive errors | 2 | - | - | 2 | 50 | 50 | 100 |
| OPT2111 | Clinical examination techniques - I | - | 2 | 4 | 4 | 100 | - | 100 |
| | **Total** | **10** | **5** | **4** | **20** | **360** | **340** | **700** |

**Students make a choice from the pool of **open electives** offered by MAHE.*
ESE of PAT2101 & MCB2101 will be conducted out of 50 and normalized to 70.
ESE of OPT2101 will be conducted out of 100 and normalized to 50.

**SEMESTER - IV**

| Course Code | Course Title | Credit Distribution (L, T,P are hours/week) | | | | Marks Distribution | | |
|---|---|---|---|---|---|---|---|---|
| | | L | T | P | CR | IAC | ESE | Total |
| PHC2202 | Pharmacology | 2 | - | - | 2 | 100 | - | 100 |
| BST3201 | Biostatistics & Research Methodology | 3 | - | - | 3 | 30 | 70 | 100 |
| GPY2204 | General Psychology | 2 | - | - | 2 | 100 | - | 100 |
| OPT2201 | Ocular Diseases - I | 1 | 1 | - | 2 | 50 | 50 | 100 |
| OPT2202 | Visual perception | 2 | | - | 2 | 50 | 50 | 100 |
| OPT2203 | Optical dispensing - II | 1 | 1 | - | 2 | 50 | 50 | 100 |
| OPT2204 | Ocular Microbiology and Pharmacology | 2 | - | - | 2 | 50 | 50 | 100 |
| OPT2211 | Clinical examination techniques - II | - | - | 4 | 2 | 50 | 50 | 100 |
| OPT**** | Program Elective - I | 1 | 2 | - | 3 | 50 | 50 | 100 |
| | **Total** | **14** | **4** | **4** | **20** | **530** | **370** | **900** |

ESE of BST3201 will be conducted out of ~~50~~ 100 and normalized to 70. (... to be corrected)

**SEMESTER - V**

| Course Code | Course Title | Credit Distribution (L, T, P are hours/week) | | | | Marks Distribution | | |
|---|---|---|---|---|---|---|---|---|
| | | L | T | P | CR | IAC | ESE | Total |
| OPT3101 | Ocular Disease - II | 2 | 1 | - | 3 | 50 | 50 | 100 |
| OPT3102 | Contact Lens - I | 2 | 1 | - | 3 | 50 | 50 | 100 |
| OPT3103 | Pediatric optometry and Binocular Vision - I | 2 | 1 | - | 3 | 50 | 50 | 100 |
| OPT3104 | Low Vision | 1 | 1 | - | 2 | 50 | 50 | 100 |
| OPT3105 | Geriatric optometry and systemic diseases | 1 | 1 | - | 2 | 50 | 50 | 100 |
| OPT3111 | Clinical examination techniques - III | - | - | 8 | 4 | 50 | 50 | 100 |
| *** **** | Open elective - II | - | - | - | 3 | S/NS | | |
| | **Total** | **8** | **5** | **8** | **20** | **300** | **300** | **600** |

*Students make a choice from the pool of **open electives** offered by MAHE.*
ESE for OPT3101, OPT3102, OPT3103 will be conducted out of 100 and normalized to 50.

**SEMESTER - VI**

| Course Code | Course Title | Credit Distribution (L, T, P are hours/week) | | | | Marks Distribution | | |
|---|---|---|---|---|---|---|---|---|
| | | L | T | P | CR | IAC | ESE | Total |
| OPT3201 | Contact Lens - II | 1 | 1 | - | 2 | 50 | 50 | 100 |
| OPT3202 | Pediatric optometry and Binocular Vision - II | 2 | 1 | - | 3 | 50 | 50 | 100 |
| OPT3203 | Occupational & Community Optometry | 1 | 1 | - | 2 | 50 | 50 | 100 |
| OPT3251 | Project work | - | 2 | 6 | 5 | 50 | 50 | 100 |
| OPT3211 | Clinical examination techniques - IV | - | 1 | 8 | 5 | 50 | 50 | 100 |
| OPT**** | Program Elective - II | 1 | 2 | - | 3 | 50 | 50 | 100 |
| | **Total** | **5** | **8** | **14** | **20** | **300** | **300** | **600** |

ESE for OPT3202 will be conducted out of 100 and normalized to 50.

**Open Electives**
Open elective is credited, choice-based and is graded as satisfactory / not satisfactory (S/NS). Students make a choice from pool of electives offered by MAHE institution / Online courses as approved by the department

**Program Electives**
Program elective is credited and choice-based. The students make a choice from pool of electives offered by the department. The ESE is conducted for 50 marks.

| Semester | Course Code | Course Title | Credit (s) Distribution (L,T,P,CL are hours/ week) | | | | |
|---|---|---|---|---|---|---|---|
| | | | L | T | P | CL | CR |
| IV Semester | OPT2241 | Myopia Control | 1 | 2 | - | - | 3 |
| | OPT2242 | Visual Psychophysics | 1 | 2 | - | - | 3 |
| | OPT2243 | Basics of Ocular Histology | 1 | 2 | - | - | 3 |
| VI Semester | OPT3241 | Ophthalmic Imaging | 1 | 2 | - | - | 3 |
| | OPT3242 | Advanced Dispensing and practice management | 1 | 2 | - | - | 3 |

**SEMESTER - VII**

| Course Code | Course Title | Credit Distribution (hours/week) * | | | | | Marks Distribution | | |
|---|---|---|---|---|---|---|---|---|---|
| | | L | T | P | CL | CR | IAC | ESE | Total |
| **OPT4131** | Internship - I | - | 3 | - | 45 | 18 | 100 | - | 100 |
| **Total** | | **-** | **3** | **-** | **45** | **18** | **100** | **-** | **100** |

*24 weeks
Note: Internship mark to be reflected in final CGPA calculation

**SEMESTER - VIII**

| Course Code | Course Title | Credit Distribution (hours/week) | | | | | Marks Distribution | | |
|---|---|---|---|---|---|---|---|---|---|
| | | L | T | P | CL | CR | IAC | ESE | Total |
| **OPT4231** | Internship - II | - | 3 | - | 45 | 18 | 100 | - | 100 |
| **Total** | | **-** | **3** | **-** | **45** | **18** | **100** | **-** | **100** |

*24 weeks
Note: Internship mark to be reflected in final CGPA calculation