Subject Description Form

Subject Code	SO3001
Subject Title	Ophthalmic Optics and Dispensing 1
Credit Value	2
Level	3
Pre-requisite	NIL
Objectives	To familiarize the students with basic principles of ophthalmic optics and dispensing.
Intended Learning Outcomes	Upon completion of the subject, students will be able to: a. apply paraxial theory to analyze and solve problems related to optical image characteristics in various optical systems b. recognize the commonly used units for prism power and convert a prism power between the different units c. analyze and solve problems related to the optical properties of a single vision spectacle lens d. state the optical principles of lenticular and Fresnel lenses and recognize their ophthalmic uses e. select appropriate lens materials for spectacle prescriptions f. name some commonly used spectacle frame materials and state their properties g. evaluate the optical suitability of a given pair of single vision spectacles h. use ophthalmic optics equipments to determine the power of a single vision spectacle lens i. recognize the factors and calculate the lens edge/centre thickness in an edged lens
Subject Synopsis/ Indicative Syllabus	Vergence method of ray tracing Basic optical properties of single vision lenses Ophthalmic lens power and form presentation Ophthalmic prism and lens decentration Obliquely crossed cylinders Lens materials and fabrication Lenticular and Fresnel lenses Frame material and types Lens thickness considerations and calculations
Teaching/Learning Methodology	**Lecture + Tutorial**: Principles of ophthalmic optics and dispensing will be covered during lectures. Calculations of various topics will be demonstrated and work problems will be solved through classroom activities. **Laboratory:** Introduction and demonstration of individual topics will be delivered at the beginning of each lab. The students are required to show competency in the techniques taught.

Assessment Methods in Alignment with Intended Learning Outcomes

Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)								
		a	b	c	d	e	f	g	h	i
1. Coursework (tests)	40	✓	✓	✓	✓	✓	✓	✓		✓
2. Practical Exam	10								✓	✓
3. Examination	50	✓	✓	✓	✓	✓	✓	✓	✓	✓
Total	**100**									

Coursework: Quizzes and a mid-term exam will be delivered to monitor the learning process of the students.
Practical Exam: A practical exam will be given at the end of the semester to test the student's competency of basic ophthalmic dispensing skills covered during the semester.
Examination: A final written exam will be given at the end of the semester to test the student's understanding of all topics covered during the semester.

Student Study Effort Required

Class contact:	
▪ Lecture	20 Hrs.
▪ Laboratory	14 Hrs.
▪ Tutorial/Seminar	5 Hrs.
Other student study effort:	
▪ Self-study	40 Hrs.
Total student study effort:	**79 Hrs.**

Reading List and References

Prescribed Reading
Jalie M. Ophthalmic lenses and dispensing. Butterworth-Heinemann. 3rd Edition, 2008.
Brooks CW, Borish IM. System for Ophthalmic Dispensing. Butterworth-Heinemann 3rd Edition. 2007.

Recommended Reading
Jalie M. The Principles of Ophthalmic Lenses. 4th Edition. Association of Dispensing Opticians, London, 1984.

Obstfeld H. Spectacle Frames and their Dispensing. W.B. Saunders, London, 1997.