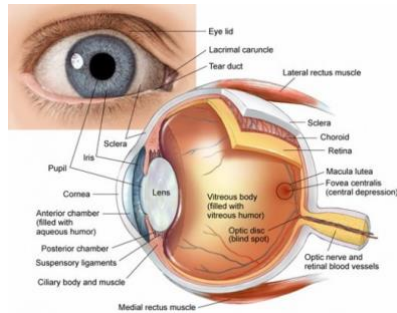


STUDY GUIDE

Subject of Ophthalmology

FOR
MBBS students
3rd & 4th Years

2023-24



Lahore Medical and Dental College, Lahore

By






Prof. Mian M. Shafique

Chair Department of Ophthalmology LMDC, Lahore

Introduction

Medical education is a life-long process and MBBS curriculum is a part of the continuum of education from pre-medical education, MBBS proceeding to house job, and the post-graduation. Pakistan Medical Commission outlines the guiding principles for undergraduate medical curriculum and has defined the generic competencies and desired outcomes for a medical graduate to provide optimal health care, leading to better health outcomes for patients and societies. These generic competencies set the standards of care for all physicians and form a part of the identity of a doctor. Each competency describes a core ability of a competent physician. The competencies learnt in the department of ophthalmology of Lahore Medical and Dental College are standardized in line with the requirements and guidelines provided by Pakistan Medical Commission and are certified through the exit examination conducted by the University of Health sciences, Lahore. This study guide will give an insight to the students of MBBS about all these competencies and help them plan their educational activities in the subject of ophthalmology during the period of two years.

Departmental Hierarchy

1.	HEAD OF DEPARTMENT Prof. Dr. Mian M. Shafique MBBS, MS (Ophth), FRCS (Glasgow) MHPE (Holland) Fellowship in Pediatric Ophthalmology (UK).	
2.	Professor: Prof. Dr. Muhammad Khalil MBBS, FCPS	
3.	Associate Professor: Dr. Muhammad Moeen Bhatti MBBS, FCPS	
4.	Senior Registrar: Dr. H. Waqar Ahmad Ghauri MBBS, FCPS	
5.	Senior Registrar Dr. Sania Munawar Khan MBBS, MCPS, CICO (UK)	
6.	Computer Operator Mr. Zia-ur-Rehman	

Details of the course

Name of the module:	Ophthalmology
Level of Students:	3 rd and 4 th -year MBBS
Total No of students:	150 +150
Total No of batches	10+10 (15 students/ batch)
Clinical subjects Coordinator:	Prof. Mian M. Shafique (Ophthalmology)
Student's Coordinator:	Two students, one each from 3 rd and 4 th year

This module will run in parallel with other modules.

Duration of the course

Total of 150 hours will be spread over a period of two years. 54 hours for whole class activity in the form of interactive lectures and seminars. 96 hours for each clinical batch which will work in clinical wards or community hospitals for a period of 8 weeks (4 days a week for 3 hours daily). One third of time will be allocated in 3rd year while remaining two third in 4th year.

Learning Objectives (knowledge, skills, attitude)

General learning objectives

To enable the undergraduates to acquire important knowledge, learn skills and bring change in behaviour enabling them to:

- Identify the important eye ailments in OPD and emergency and treat or refer if required.
- Communicate adequately with the patients, their attendants and society with reference to the disease and its treatment.
- Apply therapeutic morals and keep the confidentiality of the patient intact.

- d. Understand the ophthalmic public health problems and know how to prevent these.
- e. Comprehend the effect of systemic diseases on eye.

Specific Learning Objectives

At the end of ophthalmology module, the student of fourth year MBBS should be able to

1. Take adequate history of eye diseases for
 - a. Problem of vision, perception of colour & field defects
 - b. Discharging eyes
 - c. Painful conditions of eye
 - d. Double vision
2. Examine the eyes adequately and perform
 - Visual acuity for near and distance
 - Pinhole test
 - Colour vision tests
 - Visual fields test by confrontation method
 - Torch examination of eye and adnexa
 - Regurgitation test to check lacrimal passages
 - Cover tests and Hirschberg test to detect squint
 - Extraocular movements to find any limitation
 - Pupil reflexes to detect RAPD (Marcus Gunn Pupil)
 - Intra-ocular pressure (IOP) digitally
 - Distant direct ophthalmoscopy, direct ophthalmoscopy & retinoscopy

3. Make diagnose of common ophthalmic diseases like sty, chalazion, blepharitis, conjunctivitis including trachoma, ocular allergies and acute or chronic dacryocystitis.
4. Identify complex eye diseases and refer the patient to appropriate places for further treatment like cataract, all types of glaucoma, trauma to eye, strabismus, painless or painful blind eyes.
5. Start early management of acute congestive glaucoma, corneal abrasion or foreign body or ulcers, red eye and white pupil and then refer to designated eye hospital.
6. Instill eye drops properly, stain the cornea with fluorescein dye.
7. Identify common eye instruments like slit lamp, different types of tonometers, direct and indirect ophthalmoscope and retinoscope.

Teaching Methodologies and Learning formats

Multiple teaching and learning formats will be used in this module

including

- Interactive lectures
- Tutorials /problem-based learning
- Bedside learning
- Ward rounds→ presentation of cases and observations
- OPD→Practical training for basic skills
- Case-based learning in the clinical meetings and discussions
- Community-based learning

- Operation Theatres
 - skills of sterilization to be learned and practiced
 - observations of major procedures,
- Observation of ocular labs (perimetry, Hess charting, keratometry, ultrasound, laser therapy)
- Emergency duties

Contents of the module (Syllabus)

The following is the final list of contents of the module. A special attention will be paid to

- **Eyeball** Essential anatomy, physiology, biochemistry, pharmacology and pathology
- **Adnexa & Orbit:** thyroid eye disease, orbital cellulitis, proptosis and orbital tumors.
- **Lacrimal Apparatus:** Acute and chronic dacryocystitis, tumors of lacrimal sac & gland, Epiphora and lacrimation.
- **Lids:** Congenital Anomalies of Eyelids, Sty (External Hordeolum), Chalazion, Anterior & Posterior Blepharitis, Trichiasis, Distichiasis, Ptosis, Ectropion, Entropion, Molluscum Contagiosum, Herpes Zoster Ophthalmicus, Benign & Malignant Lid Tumors, Principles & Techniques of reconstruction after Eyelid surgery.
- **Conjunctiva:** Papillary & Follicular Conjunctivitis, Acute & Chronic Bacterial Conjunctivitis, Epidemic / Viral Keratoconjunctivitis, Vernal Keratoconjunctivitis, Atopic Keratoconjunctivitis, Conjunctival Degenerations, Chlamydial Ocular Infections (Trachoma / Adult Inclusion Conjunctivitis /

Neonatal Chlamydial Conjunctivitis).

- **Cornea:** Anatomy, Physiology & Histology of Cornea, Factors responsible for Corneal Transparency, Congenital Anomalies of Cornea, Bacterial Keratitis, Fungal Keratitis, Viral Keratitis (Herpes Simplex & Herpes Zoster), Lagophthalmic Ulcer, Mooren's Ulcer, Complications of corneal Ulcer, Keratoconus.
- **Sclera:** Scleral discoloration, episcleritis, scleritis.
- **Uveal Tract:** Uveitis, and its differential diagnosis from other causes of the red-eye.
- **Pupil:** Common abnormalities and pathways of reflexes of pupil.
- **Lens:** Cataract classification, etiology, management including visual rehabilitation. Lens subluxation and dislocation
- **Glaucoma:** Structure of angle of eye, the Layers of retina and optic disc, Circulation of Aqueous Humor. Intraocular pressure and its measurement, Definition and the concept of glaucoma, Classification of glaucoma, Congenital Glaucoma (Buphthalmos), Primary Open Angle Glaucoma, Primary Closed Angle Glaucoma, Secondary Glaucoma, Management of glaucoma Investigation, diagnosis, treatment options, Drugs Used in Glaucoma, Glaucoma surgical Procedures, Role of Lasers in Glaucoma management.
- **Retina and Vitreous:** Vitreous detachment and hemorrhage, retinal detachment, hypertensive retinopathy, diabetic retinopathy, central retinal vein occlusion, central retinal artery occlusion, branch retinal vein occlusion, branch retinal artery occlusion, age-related macular degeneration, retinoblastoma and retinitis pigmentosa.
- **Errors of refraction:** Introduction to optical system of normal eye, emmetropia, myopia, hypermetropia, anisometropia,

astigmatism, presbyopia, aphakia, pseudophakia, and refractive surgery.

- **Squint:** Anatomy and actions of extraocular muscles, Extraocular movements, Binocular vision, Classification of strabismus, Esotropia (Accommodative, Non-accommodative), Exotropia, Intermittent, Constant, Pseudostabismus, Paralytic squints 3rd N Palsy, 4th N Palsy, 6th N Palsy, Management of strabismus, Surgical Procedures for strabismus.
- **Neuro-ophthalmology:** Optic neuritis, papilledema, optic atrophy, Visual field defects in the lesions of optic nerve, optic chiasma, and visual cortex. 3rd, 4th, 6th and 7th cranial nerve palsies.
- **Ocular emergencies:** Chemical burns, corneal ulcer, corneal foreign body, acute congestive glaucoma, perforated globe, leucocoria in children, retinal artery and vein occlusion, acute vitreous hemorrhage, rhegmatogenous retinal detachment and papillitis
- **Injuries:** Intra and extraocular foreign bodies, chemical injuries and burns and sympathetic ophthalmitis and blunt and perforating injuries
- **Systemic Diseases:** Vitamin A deficiency, Diabetes, hypertension, collagen vascular disorders and thyroid eye disease.
- **Ophthalmic therapeutics:** Antibiotics, antiviral, antifungal, local anesthetics, antiglaucoma, fluorescein dye, mydriatic-cycloplegic and steroids

Timetable of the module (Alignment of activities with study hours)

Topic	Activity	Year	Time (Hours)
Introduction of faculty and ophthalmology department	Discussion and visit of the ward	3 rd year	2
Anatomy of the eye	Interactive lecture, tutorial with models	3 rd year	3
Physiology of the eye	Interactive lectures Tutorials	3 rd year	3
History Taking General examination of eye	OPD discussion	3 rd year	6
Eyelid diseases & Lid eversion	Lecture Case discussion in the ward, OPD and theatre	3 rd year	6
Conjunctival diseases	Lecture Case discussion in the ward and OPD	3 rd year	6
Corneal diseases Corneal staining Foreign body removal	Lecture Case discussion OPD and theatre	3 rd year	6
Lacrimal Apparatus	Lecture Case discussion OPD and theatre	3 rd year	4
Diseases of Optic nerve Related to pupil reactions	Discussion in the ward /OPD Ocular lab	4 th year	4

Refractive errors Retinoscopy Contact lens, PRK, Lasik	Discussion in the ward & OPD	4 th year	6
Visual pathways	Lecture and discussion in the ward & OPD	4 th year	4
Orbit Proptosis, Thyroid eye disease	Discussion in the ward & OPD	4 th year	4
Lens Distant Direct ophthalmoscopy Cataract (examination management & operation)	Lectures Case discussion Bedside and operation theatre Community-based learning	4 th year	10
Glaucoma Tonometry Visual fields Anti-Glaucoma drugs	Lecture OPD and ward discussion theatre	4 th year	10
Uveitis	OPD discussion	4 th year	4

Pupil reactions and examination	Discussion ward/ OPD	4 th year	4
Retina Fundoscopy and management	Lecture and discussion in the ward & OPD	4 th year	6
Squint, types, management, Hess test and cover test	Discussion in the ward/ OPD Ocular lab	4 th year	5
Red eye White pupil Dry eye Wet eye	Problem Based Learning Lecture Discussion in the ward & OPD Ocular lab	4 th year	10
Self-study time			30
Assessment			6
Total			150

NOTICE
3rd YEAR MBBS

Time Table of clinical batches of 3rd Year MBBS with effect from 13-02-2023
3rd Year MBBS class has been divided in the following batches for clinical classes at GTTH for Surgery, Medicine, Pediatrics, Gynae/Obst., Eye, ENT and Behavioural Sciences:-

Batch	Roll No.
A	24015, 26001, 26002, 26003, 26004, 26005, 26006, 26007, 26008, 26009, 26010, 26011, 26012, 26013, 26014
B	24108, 26015, 26016, 26017, 26018, 26019, 26020, 26021, 26022, 26023, 26024, 26025, 26026, 26027, 26029
C	25046, 26030, 26031, 26032, 26033, 26034, 26035, 26036, 26037, 26038, 26039, 26040, 26041, 26042, 26043
D	25113, 26044, 26045, 26046, 26047, 26048, 26049, 26050, 26052, 26053, 26054, 26055, 26056, 26057, 26058
E	25117, 26059, 26060, 26061, 26062, 26063, 26064, 26065, 26066, 26067, 26068, 26069, 26070, 26072
F	25135, 26073, 26074, 26075, 26076, 26077, 26078, 26079, 26080, 26081, 26082, 26085, 26086, 26087, 26088
G	25139, 26089, 26090, 26091, 26092, 26093, 26094, 26095, 26096, 26097, 26099, 26100, 26101, 26102
H	25155, 26103, 26104, 26105, 26107, 26108, 26109, 26110, 26111, 26113, 26114, 26115, 26116, 26117, 26118
I	26119, 26120, 26121, 26122, 26123, 26124, 26127, 26128, 26129, 26130, 26131, 26132, 26133, 26134, 26135
J	26136, 26137, 26138, 26139, 26140, 26141, 26142, 26143, 26144, 26145, 26146, 26147, 26148, 26149, 26150

Duration

	13-02-23 to 06-03-23	07-03-23 to 28-03-23	29-03-23 to 19-04-23	20-04-23 to 11-05-23	12-05-23 to 02-06-23	03-06-23 to 24-07-23	25-07-23 to 15-08-23	16-08-23 to 07-09-23	08-09-23 to 29-09-23	30-09-23 to 20-10-23
Medicine	A + B		C + D		E + F		G + H		I + J	
Surgery-II	C	D	E	F	G	H	I	J	A	B
Surgery-I	D	C	F	E	H	G	J	I	B	A
Eye	E + F		G + H		I + J		A + B		C + D	
ENT	G + H		I + J		A + B		C + D		E + F	
Paeds	I	J	A	B	C	D	E	F	G	H
Beh. Sciences	J	I	B	A	D	C	F	E	H	G

PROF. MIAN MUHAMMAD SHAFIQUE
PRINCIPAL

3RD YEAR M.B.B.S TIMEABLE SESSION 2020-2021 w.e.f. 13-02-2023



Lahore Medical & Dental College
Canal Bank North, Tulpura, Lahore
Phone No. 0346-4418891-98
No. LMDC/ /2023, Dated:

Day & Time	08:30 a.m. to 09:30 a.m.	09:30 a.m. to 09:45 a.m.	09:45 a.m. to 11:45 a.m.	11:45 a.m. to 12:00 noon	12:00 noon to 12:15 p.m.	12:15 p.m. to 01:00 p.m.	01:00 p.m. to 02:30 p.m.
Monday	Grand Tutorial 1 st week Pharmacology 2 nd week Community Medicine 3 rd week Pathology 4 th week Clinical Pharmacology Lecture Theatre No. 3	08:50 a.m. to 08:58 a.m.	08:58 a.m. to 09:30 a.m.	Clinical Ward	Forensic Medicine Lecture Theatre No. 3	Forensic Medicine Lecture Theatre No. 3	Pathology Pharmacology Forensic Medicine Clinical Pathology Clinical Pharma
Tuesday	Pathology Lecture Theatre No. 3	Pharmacology Lecture Theatre No. 3	Clinical Ward/ Skill Lab for one hour	Pharmacology Lecture Theatre No. 3	Pharmacology Lecture Theatre No. 3	Pharmacology Lecture Theatre No. 3	Pathology Pharmacology Forensic Medicine Clinical Pathology Clinical Pharma
Wednesday	Pharmacology Lecture Theatre No. 3	Pathology Lecture Theatre No. 3	Clinical Ward	Pharmacology Lecture Theatre No. 3	Forensic Medicine Lecture Theatre No. 3	Pharmacology Lecture Theatre No. 3	Pathology Pharmacology Forensic Medicine Clinical Pathology Clinical Pharma
Thursday	Forensic Medicine Lecture Theatre No. 3	Pharmacology Lecture Theatre No. 3	TRAVEL TO GTTH	TRAVEL TO LMDC	BREAK	Pharmacology Lecture Theatre No. 3	Pathology Pharmacology Forensic Medicine Clinical Pathology Clinical Pharma
Friday	Pharmacology Lecture Theatre No. 3	ENT Lecture Theatre No. 3	TRAVEL TO GTTH	TRAVEL TO LMDC	BREAK	Pharmacology Lecture Theatre No. 3	Pathology Pharmacology Forensic Medicine Clinical Pathology Clinical Pharma

Copy for information to the:-
1. Principal, Lahore Medical & Dental College, Lahore
2. Heads of all concerned Departments
3. Director Administration, LMDC
4. Director Medical Education, LMDC
5. Director Skills Lab, LMDC
6. Director IT, Lahore Medical & Dental College, Lahore
7. Medical Superintendent, GTTH
8. Chairman Clinical Time Table, LMDC
9. Transport in Charge, LMDC
10. Lecture Theatre in Charge, LMDC
11. Warden/Assistant Warden Hostels (Boys/Girls)

* Medicine/Surgery lecture schedule will be issued separately.
SCHEDULE FOR 6th FIELD VISIT OF FORENSIC MEDICINE WILL BE ISSUED SEPARATELY.

NOTICE
4th YEAR MBBS

Time Table of clinical batches of 4th year MBBS with effect from 27-03-22

4th year MBBS class has been divided in the following batches for clinical classes at GTTH for Surgery, Medicine, Paediatrics, Gynae/Obst., Eye, ENT:-


Batch	Roll No.
A	23016, 24017, 24057, 25001, 25002, 25003, 25004, 25005, 25006, 25007, 25008, 25009, 25010, 25011, 25012
B	25013, 25014, 25015, 25016, 25017, 25018, 25019, 25020, 25021, 25022, 25023, 25024, 25025, 25026, 25027
C	25029, 25030, 25031, 25032, 25033, 25034, 25035, 25036, 25037, 25038, 25039, 25040, 25041, 25042, 25043
D	25044, 25045, 25047, 25048, 25050, 25051, 25052, 25053, 25054, 25055, 25056, 25057, 25058, 25059, 25060
E	25061, 25063, 25064, 25065, 25066, 25067, 25068, 25069, 25070, 25071, 25072, 25073, 25074, 25075, 25076
F	25077, 25078, 25079, 25080, 25081, 25082, 25084, 25085, 25086, 25087, 25088, 25090, 25091, 25092, 25093
G	25094, 25095, 25096, 25097, 25098, 25099, 25101, 25102, 25103, 25104, 25106, 25107, 25108, 25109
H	25110, 25111, 25112, 25114, 25115, 25116, 25118, 25119, 25120, 25121, 25122, 25123, 25124, 25125
I	25126, 25127, 25129, 25130, 25131, 25132, 25134, 25136, 25137, 25138, 25140, 25141, 25142, 25143
J	25144, 25145, 25146, 25147, 25148, 25149, 25150, 25151, 25152, 25153, 25154, 25156, 25157, 25158

Duration

Duration/ Unit	27-03-23 to 17-04-23	18-04-23 to 10-05-23	11-05-23 to 01-06-23	02-06-23 to 23-07-23	24-07-23 to 15-08-23	16-08-23 to 06-09-23	07-09-23 to 28-09-23	29-09-23 to 22-10-23	23-10-23 to 12-11-23	13-11-23 to 02-12-23
Surgical Unit-II	A	B	C	D	E	F	G	H	I	J
Surgical Unit-I	B	A	D	C	F	E	H	G	J	I
Medical	C + D		E + F		G + H		I + J		A + B	
ENT	E + F		G + H		I + J		A + B		C + D	
Eye	G + H		I + J		A + B		C + D		E + F	
Paediatrics	I	J	A	B	C	D	E	F	G	H
Gynae & Obst.	J	I	B	A	D	C	F	E	H	G

TO BE SUBSTITUTED BEARING SAME NUMBER AND DATE

4th YEAR M.B.B.S TIME TABLE SESSION 2019-2020 w.e.f. 26-04-2023


Lahore Medical & Dental College
 Canal Bank North, Tulpurra, Lahore
 Phone No. 0346-4418891-98
 No. LMDC/
 /2023, Dated:

DAYS	08:00 a.m. to 08:45 a.m.		08:45 a.m. to 09:30 a.m.		09:30 a.m. to 10:20 a.m.		10:20 a.m. to 10:50 a.m.		10:50 a.m. to 11:15 a.m.		11:15 a.m. to 11:30 a.m.		11:30 a.m. to 01:20 p.m.		01:20 p.m. to 01:45 p.m.		01:45 p.m. to 02:30 p.m.	
	MONDAY	Surgery-II Lecture Theater No. 2		CPC		Pathology Lecture Theater No. 2		Pathology Lecture Theater No. 2		Pediatrics Lecture Theater No. 2		Travel Time to GTTH		WARD		Travel Time to LMDC		Community Medicine Auditorium
TUESDAY	Community Medicine Lecture Theater No. 2		Surgery-I Lecture Theater No. 2		Practical Pathology		Practical Pathology		Practical Pathology		WARD		WARD		Practical Pathology Auditorium		Community Medicine Auditorium	
WEDNESDAY	Pathology Lecture Theater No. 2		EYE Lecture Theater No. 2		Practical Community Medicine Lecture Theater No.3		Practical Community Medicine Lecture Theater No.3		Practical Community Medicine Lecture Theater No.3		WARD/ SKILLS LAB.		WARD		ENT Auditorium		ENT Auditorium	
THURSDAY	Medicine Lecture Theater No. 2		Gynae Lecture Theater No. 2		Practical Pathology		Practical Pathology		Practical Pathology		WARD		WARD		EYE Auditorium		EYE Auditorium	
FRIDAY	Pathology Lung Lecture/ Practical Lecture Theater No. 2		08:00 a.m. to 09:30 a.m.		09:30 a.m. to 10:15 a.m.		10:15 a.m. to 10:45 a.m.		10:45 a.m. to 11:00 a.m.		ENT Lecture Theater No. 2		Break		11:15 a.m. to 12:00 noon		12:00 noon to 12:45 p.m.	

No. LMDC/
/23, Dated:

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- Director Medical Education, LMDC
- Director Skills Lab, LMDC
- Director IT, LMDC
- Medical Superintendent, GTTH
- Chairman Time Table Committee, LMDC
- Transport In Charge, LMDC
- Lecture Theatre In Charge, LMDC
- Warden/Assistant Warden Hostels (Boy/Girl)

Monthly test schedule:-

- 1st week Community Medicine
- 2nd week Eye
- 3rd week ENT
- 4th week Pathology

Attendance Requirement

Minimum of 75% attendance will be required for students to qualify to appear in final university examinations and the final exam of the module. They must attend all scheduled teaching sessions and examinations. Absence due to illness must be certified appropriately by the General Physician. Attendance will be recorded through biometrics system. If their attendance is short they will be warned at midterm level.

The Assessment

Multiple assessment tools will be used during formative and summative assessment as show in the following table.

Type of Assessment	Knowledge	Clinical skills	Attitudes
Formative (Internal) (10% = 20marks) Class test Ward test Log Book	Multiple choice questions (MCQ) Short Answer Questions (SEQ)	Case presentation	Case presentation
Summative (External) (90% =180 marks) End of 4 th year examination by UHS as 3 rd professional MBBS	45MCQs: each having 1mark 9 SEQs: each having 5marks (90 marks)	OSPE (14 stations) including interactive Case Presentation (90 marks)	Case presentation during OSPE

- Theory or knowledge assessment by MCQ and SEQ papers by UHS = 90 marks
 - Skills and attitude assessment by OSPE by UHS = 90 marks
 - Internal assessment by formative assessment by LMDC = 20 marks
 - Total = 200 marks
- Internal assessment will include the performance of students both in 3rd and 4th Year.
 - *10 marks of internal assessment will be added each to theory and practical to make the final result by UHS.*
 - *Minimum of 50% marks will be required to pass each theory and practical separately.*

Learning resources/ facilities

1. Parson diseases of Eye. Butterworth-Heinemann;
2. Clinical Ophthalmology by M. S Jatoy, Farooq Kitab Ghar, Urdu Bazar, Karachi.
3. Clinical Ophthalmology by M. Saleem Akhtar, National Book Foundation, Lahore
4. Video tapes of clinical skills and surgical procedure will be made available in IT library.
5. Skills lab will provide the simulated learning experience the basic skills and procedures
6. Computer and Internet resources to gather the latest information.
7. The students will be provided many educational facilities like study room equipped with multimedia facilities and internet connection throughout the college campus.

Summer Vacation: 16th June to 15th July