

الدبلومة المهنية لأمراض وجراحات الحول

Professional Diploma in Strabismus (OPHT422str)

القسم المانح للدرجة : قسم طب وجراحة العيون - كلية الطب - جامعة المنصورة

Ophthalmology department- Faculty of Medicine – Mansoura University

نظام الدراسة:

الساعات المعتمدة	الكود	Course	اسم المقرر	الفصل الدراسي
10	2	Basic course -Anatomy , Physiology of Extra ocular muscles. - Basics of diagnosis and surgery of cases of strabismus. - Diagnosis of amblyopia - Diagnosis of nystagmus. - How to deal and examine, and diagnose strabismus of pediatric population	المقرر الاساسي (مقرر اساسيات تشخيص وعلاج امراض الجهاز الحركي للعين والحول)	الفصل الدراسي الاول
	8	Clinical, surgical and self-directed learning	انشطة اكلينيكية وجراحية وتعلم ذاتي	
10	2	Advanced Course -Diagnosis of more advanced strabismus cases and their management non-surgical and surgical. - How to deal and examine, and diagnose strabismus of neurological patients and CP children	المقرر المتقدم (المقرر المتقدم في تشخيص وعلاج امراض الجهاز الحركي للعين والحول)	الفصل الدراسي الثاني
	8	Clinical, surgical and self-directed learning	انشطة اكلينيكية وجراحية وتعلم ذاتي	
20				اجمالي الساعات المعتمدة

نظام الامتحان:

الامتحان يتم في نهاية كل فصل دراسي علي النحو الاتي:

اجمالي	الدرجة					المقرر
	جراحي	كlinikال	شفهي	تحريري		
				MCQ	تحريري	
100	20	20	20	10	30	<u>الفصل الدراسي الاول</u> (مقرر اساسيات تشخيص وعلاج امراض الجهاز الحركي للعين والحوال)
400	100	100	100	20	80	<u>الفصل الدراسي الثاني</u> (المقرر المتقدم في تشخيص وعلاج امراض الجهاز الحركي للعين والحوال)

يتطلب النجاح في كل فصل دراسي الحصول على 70% على الاقل في كل محطة

متطلبات الالتحاق بالدبلومة:

يحق لكل من حصل علي ماجستير او دكتوراه او الزمالة العربية او المصرية او ما يكافئها في طب وجراحة العين الالتحاق بالدبلومة المهنية لأمراض وجراحات الحول.

الدبلومة المهنية في امراض وجراحات الحول

Professional Diploma in Strabismus

Code: (OPHT422str)

الهدف:

تهدف الدبلومة المهنية لأمرض وجراحات الحول الي امداد المهتمين بهذا الفرع من امراض العيون باعلي درجات المهنية والمهارة في تشخيص وعلاج امراض الحول في الاطفال والبالغين.

متطلبات الالتحاق بالدبلومة:

يحق لكل من حصل علي ماجستير او دكتوراه او الزمالة العربية او المصرية او ما يكافئها في طب وجراحة العين الالتحاق بالدبلومة المهنية للحول.

عدد الساعات المعتمدة: 20 ساعة مقسمة علي فصلين دراسيين

فصل دراسي اول 10 ساعات معتمدة

فصل دراسي ثاني 10 ساعات معتمدة

الفصل الدراسي الاول: (المستوي الاساسي)

ومدته 6 اشهر ويشمل دراسة التشريح والفيولوجي والباثولوجي والوراثة الخاص بالجهاز الحركي للعين. كذلك التدريب علي اساسيات التشخيص والعلاج الغير جراحي والجراحي للحالات. يشمل ايضا تشخيص وعلاج حالات كسل العين. تشخيص حالات رفرقة العين. التدريب علي اجراء الجراحات البسيطة لعضلات العين في الحالات السهلة. كيفية التعامل مع الاطفال وطريقة الفحص وعمل النظارات لهذه الفئة.

الفصل الدراسي الثاني: (المستوي المتقدم)

ومدته 6 اشهر ويشمل دراسة حالات الحول المتقدمة والمرتجة وكيفية التشخيص واجراء الجراحات لبعض الانماط للحالات المركبة والمتقدمة. كيفية التعامل و تشخيص بعض حالات الاطفال الغير متعاونين والذين لديهم امراض عصبية او وراثية مرتبطة بظهور حول وكذلك الاطفال اللذين يعانون من تأخر عقلي .

التقييم و نظم الامتحانات:

- 1- يسمح للطالب بدخول امتحان الفصل الدراسي الاول بعد 6 اشهر من الالتحاق بالتدريب وذلك بعد استيفاء كتاب الأنشطة الخاص بذلك الفصل الدراسي (1 Logbook)., ويجوز للطالب تأجيل الامتحان اذا لم يستوفي كتاب الأنشطة او لأي عذر اخر. كما يسمح للطالب بدخول امتحان الفصل الدراسي الثاني بعد 6 اشهر من نجاحه في الفصل الدراسي الاول وذلك بعد استيفاء كتاب الأنشطة الخاص بهذا الفصل دراسي (2 Logbook).). ويجوز للطالب تأجيل الامتحان اذا لم يستوفي كتاب الأنشطة او لأي عذر اخر.

- 2- يتكون امتحان الفصل الدراسي الاول وكذلك امتحان الفصل الدراسي الثاني من اربعة محطات (المحطة الاولى وهي الامتحان التحريري , المحطة الثانية وهي الامتحان الشفهي , المحطة الثالثة وهي الامتحان الاكلينيكي و المحطة الرابعة والاخيرة وهي الامتحان الجراحي)
- 3- يتكون الامتحان التحريري (المحطة الاولى) من اسئلة تحريرية قصيرة وكذلك اسئلة اختيار من متعدد (MCQ) ويعتبر الطالب ناجح في هذه المحطة في حالة الحصول علي 70% من درجة الامتحانين مجتمعين معا.
- 4- المحطة الثانية وهي امتحان شفوي ويعتبر الطالب ناجح اذا حصل علي 70% من الدرجة.
- 5- المحطة الثالثة وهي الامتحان الاكلينيكي وسوف يتم علي حالات مرضية لاختبار وتقييم قدرة المتدرب علي فحص المريض ومحاولة الوصول الي تشخيص للحالة, ويعتبر الطالب ناجح اذا حصل علي 70% من الدرجة في هذه المحطة.
- 6- المحطة الرابعة وهي الامتحان الجراحي بغرفة العمليات وذلك لتقييم الطالب في اجراء جراحة الحول , ويعتبر الطالب ناجح اذا حصل علي 70% من الدرجة في هذه المحطة.
- 7- لابد من الحصول علي 70% في كل محطة كدرجة النجاح .وكذلك الحصول علي 70% من الدرجة الكلية (pass mark) لاجتياز كل الفصل الدراسي.
- 8- في حالة عدم تحقيق الطالب نسبة النجاح المطلوبة في الفصل الدراسي الاول سوف يتم نقله للتدريب للفصل الدراسي الثاني مع اعادة تقييم الفصل الدراسي الاول , ولا يسمح له الدخول لامتحان الفصل الدراسي الثاني الا بعد اجتياز الفصل الدراسي الاول .

ملحوظة هامة:

كي يعتبر الطالب ناجحا في الفصل الدراسي الاول ومنقول للفصل الدراسي الثاني لابد من تحقيق ما يعادل او يتجاوز نسبة 70 % من الامتحان التحريري و الاختيار من متعدد مجتمعين ، ونسبة ما تعادل او تتجاوز 70 % من الامتحان الشفوي والاكلينيكي والجراحي كلا علي حدة.



COURSE SPECIFICATION

Postgraduate Professional Diploma Degree of Strabismus (OPHT422str)

Ophthalmology department-Faculty of Medicine- Mansoura University

(A) Administrative information

(1) Program offering the course:	Diploma of Strabismus
(2) Department offering the program:	Ophthalmology Department
(3) Department responsible for teaching the course:	Strabismus Unit
(4) Parts of the program:	2 Semesters in 12 months Each 6 months
(5) Date of approval by the Department's council	
(6) Date of last approval of program specification by Faculty council	
(7) Course title:	Strabismus
(8) Course code:	OPHT422str
(9) Total teaching hours:	<ul style="list-style-type: none">Semester 1: (270 hours)= 10 Credit hours (30 lectures,90 clinical, 90 operative, and 60 SDL)Semester 2: (270 hours)= 10 Credit hours (30 lectures,90 clinical, 90 operative, and 60 SDL)
(10) Total Credit hours	20 : Credit hours <ul style="list-style-type: none">Semester 1: 10 Credit hours (2 theoretical, and 8 clinical)Semester 2: 10 Credit hours (2 theoretical, and 8 clinical)
(11) Program Coordinator	Prof. Manal Ali Hussein Ibrahim Kasem
(12) Head of department	Prof. Samy Ali Abouelkheir

Entry requirements

Strabismus fellowship requires per minimum the following qualifications: Post-graduate master degree in Ophthalmology, or Egyptian Board of Ophthalmology, or Arabic board of ophthalmology or equivalent degree.

(B) Professional information

(1) Aim of the strabismus diploma

The goal of the strabismus diploma is to provide medical knowledge and skills essential for the medical and surgical management of various types of strabismus efficiently and properly.

(2) Intended Learning Outcomes (ILOs) of the program

Knowledge and Intellectual skills (K).

After finishing the course the candidate will be able to

1. Describe ocular motor and sensory functions - both basic and advanced, including in patients who might be considered challenging (e.g., uncooperative, cognitively impaired, nonverbal, preverbal).
2. Identify the most advanced knowledge of eye movement system including anatomy, neuroanatomy, and physiology.
3. Describe the clinical applications of basic and advanced sensory adaptations in strabismus patients.
4. Identify the different types of horizontal and vertical strabismus
5. Recognize complex strabismus patterns, such as restriction, paresis, and dissociated strabismus.
6. List and identify the most complex aetiologies of alphabet patterns and oblique muscle dysfunctions.
7. Describe the different strabismus testing for diagnosis of strabismus as cover test, and prism test.
8. Describe the most important testing such as orbital images (e.g., CT and MRI) and Hess/Lancaster in the diagnosis of certain types of strabismus.

9. Identify the most common strabismus testing as sensory dissociated tests, forced duction test, force generation test, and three step test.
10. State the importance of refraction in diagnosis and management of certain types of strabismus.
11. Describe retinoscopy in pediatric population.
12. Describe nystagmus, and till causes.
13. Discuss the indications of strabismus surgery.
14. Identify the preoperative measurements in the various gaze positions.
15. Recognize the surgical anatomy, including muscle measurements, specific characteristics of the conjunctiva, subconjunctival fascia, individual muscles, and vascular supply in relation to extraocular muscle surgery.
16. Identify complex strabismus cases, such as restriction, paresis, and dissociated strabismus and associated syndromes.
17. Explain investigations needed for a strabismus case.
18. Summarize evaluation of a strabismus case (simple and advanced) .
19. Till complications of strabismus surgery.
20. Classify refractive errors
21. Describe the art of spectacle correction in childhood.
22. Connect the most advanced knowledge of eye movement with the patient evaluation.
23. Construct management plan for simple cases of strabismus.
24. Construct management plan for complex cases of strabismus.
25. Correlate the clinical applications of sensory and motor adaptations in strabismus patients.
26. Interpret the strabismus tests results and corelate them with the different types of strabismus cases.
27. Relate alphabet patterns and oblique muscle dysfunctions.

28. Connect the most important finding of orbital images (e.g., CT and MRI) and Hess/Lancaster with the diagnosis of different types of strabismus.

29. Differentiate the different types of error of refraction and their relation for management of a strabismus case.

30. Correlate the indications for horizontal and oblique muscle surgery and proper choice of procedures.

31. Construct a management plan for a case of strabismus (simple and complicated cases)

32. Construct a management plan of amblyopia cases.

Skills (S)

This include both clinical and surgical skills

1. Measure strabismus angle in primary positions as well as the 9 cardinal positions of gaze and head tilts.
2. Diagnose simple and complex cases of strabismus through applying diagnostic tests.
3. Assess, and manage cases of amblyopia.
4. Prescribe the glasses in paediatric populations
5. Assess patients preoperative who are undergoing strabismus surgery.
6. Evaluate a case of strabismus both clinically and surgically.
7. Apply the basic surgical techniques involved in eye muscle surgery, including setup, draping, prep and exposure, forced duction testing, incision options (and indications for the different incisions), and the principles of muscle dissection and suturing techniques including identification and choice and handling of instruments.
8. Perform basic rectus muscle recession and resection procedures.
9. Perform basic surgical procedures on the oblique muscles.

10. Perform more complex extraocular muscle surgery, including reoperation, tuck, and transposition procedures.
11. Manage postoperative complications for basic and more complicated strabismus surgery, such as a slipped muscle, globe perforation, endophthalmitis, anterior segment ischemia, and overcorrection.
12. Apply the standard tables used for surgical numbers for eye muscle surgery.

Attitude, Behavioural & transferable skills (A).

1. Maintain Ethical principles related to the practice in this specialty.
2. Maintain abilities necessary for continuous medical education.
3. Demonstrate compassion, integrity, and respect for all human rights and treat all patients equally regardless to their beliefs, culture and behaviour.
4. Communicate effectively with patients, families, and the public.
5. Communicate effectively with physicians, other health professionals, and health- related agencies.
6. Maintain comprehensive, timely and legible medical records.
7. Transfer, and teach juniors.

Intended Learning outcome of each semester

Semester I (Standard level)

Knowledge and Understanding (K) :

1. Memorize the basic anatomy and physiology of strabismus including: Spiral of Tillaux, Innervation of extraocular muscles, Primary, secondary, and tertiary actions, Laws governing the muscle actions, neuroanatomy and functions of cranial nerves and the visual pathway, pupillary and accommodative reflex.
2. Describe visual acuity measurement of the pediatric ophthalmology patients (e.g., central, steady, maintained fixation), crowding using standard vision testing (e.g., Landolt “C” Broken Ring vision chart), etchant the normal visual development milestones.

3. Describe basic examination techniques for strabismus (e.g., ductions and versions, cover and uncover testing, alternate cover testing, prism cover testing).
4. Define the basic sensory adaptations for strabismus, including Normal and anomalous retinal correspondence, Suppression, Horopter, Panum area, Fusion, Stereopsis.
5. Describe and recognize pseudostrabismus.
6. Till the different etiologies of amblyopia including: Deprivation, Ametropic, Strabismic, Anisometropic, Organic.
7. Define and Describe Monofixation syndrome.
8. Describe accommodation and drugs used for cycloplegia.
9. Recognize spasm of accommodation.
10. Define normal and abnormal AC/A ratio.
11. Describe various forms of esotropia:
Congenital, Comitant and incomitant. Accommodative and nonaccommodative, Decompensated, Sensory, and Restrictive.
12. Explain various forms of exotropia, such as: Congenital, Comitant and incomitant, Decompensated, Sensory, Restrictive, Basic divergence excess, Exophoria, Convergence insufficiency.
13. Describe Consecutive strabismus.
14. Describe and classify the typical features of most common ocular neuropathy (3rd, 4th, 6th nerve palsy)
15. Describe the nonsurgical treatment of strabismus and amblyopia, such as:
Glasses, prism, Patching, Atropine penalization, Convergence exercises.
16. Classify refractive errors and describe the art of spectacle correction in childhood.
17. Explain indications and uses of contact lenses in childhood.
18. Know the difference between congenital nystagmus and acquired nystagmus.
19. Identify the evaluation and management of pupillary abnormalities (Horner syndrome, 3rd nerve palsy,).
20. Recognize the indications for obtaining neuroimaging studies (MRI, CT)
21. Summarize how to evaluate a simple case of strabismus.
22. Interpret ocular motility using duction and version testing.
23. Correlate Hering law and Sherrington law for ocular motility.
24. Discover overaction and underaction, limitation, saccades, vergence, pursuit movements.
25. Relate normal visual acuity milestones, and visual maturation with the patient's age.
26. Connect the relation between anterior, posterior segment findings and their relation to strabismus.
27. Conclude the indications and contraindications of strabismus surgery.
28. Construct a management plan for a simple case of strabismus.
29. Construct a surgical plan for a case of strabismus.
30. Solve strabismus case problems (simple cases)

Professional and practical skills (S):

1. Measure visual acuity in the infant, and child, depending on the age of the child and availability of the devices in the clinic
2. Perform cycloplegic retinoscopy.
3. Apply an extraocular muscle motility test including duction and version and, vergence movements.
4. Perform basic measurement of the angle of strabismus (eg, Hirschberg test, Krimsky method, cover testing, prism cover testing, simultaneous prism cover testing, alternate cover testing).
5. Evaluate a simple case of strabismus and write a management plan.
6. Assist a surgeon in performing extraocular muscle surgery (both simple and advanced surgeries).
7. Perform intraoperative forced duction test (FDT) and correlate the results.
7. Perform basic strabismus surgery including: Recession, Resection.
10. Manage simple intraoperative and postoperative complications under supervision.

Attitude, Behavioural & transferable skills (A).

Demonstrate compassion, integrity, and respect for all human rights and treat all patients equally regardless to their beliefs, culture and behavior.

- 1- Communicate effectively with patients, families, and the public.
- 2- Communicate effectively with physicians, other health professionals, and health- related agencies.
- 3- Maintain comprehensive, timely and legible medical records.
- 4- Teach and transfer the knowledge to the most juniors.

Semester II (Advanced level)

Knowledge and Understanding (K):

1. Describe more advanced anatomy (including pulleys) and physiology of strabismus (e.g., torsion, tertiary actions, consecutive deviations, extraocular muscle pulley system).
2. Identify more advanced strabismus examination techniques (e.g., combined vertical and horizontal prism cover testing, double Maddox rod testing).
3. Recognize basic and more advanced visual assessment of the pediatric ophthalmology patient (e.g., Blink to light or threat, measures of fixation and following behavior, objective measures of visual acuity using the optokinetic nystagmus (OKN) drum to assess fixation and electrophysiological techniques such as visual evoked potential (VEP) & Electroretinogram (ERG).
4. Describe basics of binocular sensory testing (e.g., Titmus stereo testing, Randot stereo testing, Worth 4-dot test, Bagolini lenses).
5. Explain the clinical application of the sensory adaptations (e.g., anomalous head position, anomalous retinal correspondence)
6. Memorize the etiologies, evaluation, and management of vertical strabismus including: Oblique overaction or underaction, Dissociated vertical deviation, etc.
7. Till the diagnosis & management of paralytic& restrictive strabismus e.g: sixth nerve palsy & thyroid eye disease.
8. Describe various strabismus patterns (eg, A or V pattern) and associations with various types of comitant strabismus; the anatomic role of muscle pulleys; and the potential role of radiology in assessing complex strabismus.
9. Identify common hereditary or congenital ocular motility or lid syndromes (e.g., Duane syndrome, congenital fibrosis syndrome, Brown syndrome).
10. Recognize the most complicated etiologies of amblyopia (e.g., refraction noncompliance, patching failures, pharmacologic penalization).
11. Describe and recognize the different forms of childhood nystagmus (e.g., infantile nystagmus syndrome [INS], fixation maldevelopment nystagmus syndrome [FMNS], spasms nutans syndrome [SNS]), and appropriate work up for different time of onset and age groups.
12. Demonstrate the indications for botulinum toxin use in strabismus.
13. Describe the clinical features and evaluation of ocular myasthenia gravis.
14. Identify supranuclear and internuclear palsies (Internuclear ophthalmoplegia, vertical gaze palsy).
15. Identify the patients with functional visual loss and their appropriate approach.
16. Describe management of urgent neuro ophthalmic pathology (cavernous sinus thrombosis, orbital apex syndrome)
17. Identify more advanced measurements instruments of strabismus assessment (e.g., synoptophore or amblyoscope when available).
18. Interpret the following: Stereoacuity testing, measuring Accommodative convergence/accommodation ratio, and tests of binocularity and retinal correspondence as Worth's4dot test, and Bagolini striated lens test.
19. Interpret diplopia charts (e.g., Hess charts).

20. Recognize more advanced ocular motility problems (e.g., bilateral, or multiple cranial neuropathies, myasthenia gravis, thyroid eye disease).
21. Correlate Hering law and Sherrington law in more advanced cases (e.g., pseudo paresis of the contralateral antagonist, enhancement of ptosis in myasthenia gravis, Duane syndrome).
22. Solve a complicated strabismus case problem.

Professional and practical skills (S):

1. Perform advanced strabismus testing, such as Parks-Bielschowsky 3-step test, Lancaster red-green test, Maddox rod testing, double Maddox rod testing, and measurement of dissociated vertical deviation (DVD).
2. Perform forced duction test (FDT) and force generation test (FGT).
3. Perform strabismus surgeries: Recession, Resection, Muscle weakening (e.g., tenotomy) and strengthening (e.g., tuck), and Inferior oblique weakening procedures,
4. Participate in more complicated procedures as, Transposition procedures, adjustable sutures, and Botulinium injection.
5. Participate in the Management of the complications of strabismus surgery (e.g., slipped muscle, recurrent strabismus, under correction& overcorrection)

Attitude, Behavioural & transferable skills (A).

1. Demonstrate compassion, integrity, and respect for all human rights and treat all patients equally regardless to their beliefs, culture and behavior.
2. Communicate effectively with patients, families, and the public.
3. Communicate effectively with physicians, other health professionals, and health- related agencies.
4. Maintain comprehensive, timely and legible medical records.
5. Teach and transfer the skills.

(3) Course contents:

Semester I:

- **Standard level includes Basics of strabismus (anatomy, physiology, pathology, genetics), Also clinical diagnosis and surgical treatment of simple cases of strabismus.**
- 10 Credit Hours (30 Lectures +90 Clinical +90 operative+ 60 SDL = 270 Total Teaching hours)

Semester II:

- **Advanced level includes clinical diagnosis and surgical management of advanced, complicated cases, and recurrent cases of strabismus.**
- 10 Credit Hours (30 Lectures +90 Clinical +90 operative+ 60 SDL = 270 Total Teaching hours)

Total teaching hours for each semester

Semester 1 Standard semester

Basic course of strabismus (10 Credit Hours)

Semester 1 : Basic strabismus course

	Subject	lectures	Clinical	Operative	SDL*	Total
1	Basic Anatomy and surgical anatomy	4	4	10	-	18
2	Physiology	2	4	-	-	6
3	Pathology and genetics	2	4	-		6
4	Basic visual acuity assessment and visual milestones	2	8	-	10	20
5	Retinoscopy	2	8	-	10	20
6	Basic strabismus evaluation	4	12	-	10	26
7	Strabismus classifications	4	12	-	-	16
8	Nystagmus	2	10	-	5	17
9	Amblyopia	2	8	-	5	15
10	Basic strabismus surgery	2	4	80	10	96
11	Strabismus neuro ophthalmology	2	8	-	5	15
12	Evaluation of a child with severe visual affection (Delayed visual maturation)	2	8	-	5	15
Total teaching hours		30	90	90	60	270
Credit hours		2	2	2	4	10

*SDL: Self-directed learning include Case presentation (12 cases), Journal club (6 clubs), and ground meetings and seminars (42).

Semester 2 advanced semester

Advanced Course of strabismus (10 Credit Hours)

Semester 2 : Advanced strabismus course

	Subject	lectures	Clinical	Operative	SDL*	Total
1	Work up of diplopia and diplopia charts	2	4	-	5	11
2	Paralytic strabismus	4	10	12	5	31
3	Duane retraction syndrome	3	10	10	6	29
4	DVD \ MED	2	8	4	4	18
5	SOP and IOOA , their surgeries	3	10	20	10	43
6	Thyroid eye disease	2	10	4	2	18
7	Brown syndrome, heavy eye syndromes	2	10	4	5	21
8	EOM imaging, Neuro ophthalmology syndromes	3	6	-	6	15
9	Complication of strabismus surgery	3	8	16	6	33
10	Reoperation in strabismus	2	4	12	6	24
11	Transposition surgery	2	6	4	3	15
12	Botox injection and Adjustable sutures	2	4	4	2	12
Total teaching hours		30	90	90	60	270
Credit hours		2	2	2	4	10

*SDL: Self-directed learning include Case presentation (12 cases), Journal club (6 clubs), and ground meetings and seminars (42).

(4) Program ILOS Matrix:

Program ILOs are enlisted in the first column of the table (by their code number a1, a2, a3,.....) then the program topics are enlisted in rows. An “x” mark is inserted where the respective topic contributes to the achievement of the program ILOS in Question.

Topic	Semester 1	Semester 2
A 1	X	X
A 2	X	X
A 3	X	X
A 4	X	
A 5		X
A 6		X
A7	X	
A 8		X
A 9		X
A 10	X	
A 11	X	
A 12	X	X
A 13	X	
A 14	X	
A 15		X
A 16		X
A 17	X	
A18	X	X
A 19	X	
A 20	X	
B 1	X	X
B 2	X	
B 3		X
B 4	X	
B 5		X
B 6		X
B 7		X
B 8	X	
B 9	X	
B10	X	X
B11	X	
C 1	X	
C 2	X	X
C 3	X	
C 4	X	
C 5	X	X
C 6	X	X
C 7	X	
C 8	X	
C 9		X
C10		X
C 11	X	X
C12	X	X
D 1	X	X
D 2	X	X
D 3	X	X
D 4	X	X
D 5	X	X
D 6	X	X
D 7	X	X

(5) Program Regulation:

During the entire training program, the candidate must be dedicated and fully responsible for patient care under supervision of fellowship trainers.

Trainees Duties and obligations

- 1- The trainees should attend and participate. Attendance and participation should not be less than 75% of the total number of activities within any training rotation / period including:
 - a. Strabismus clinics
 - b. Operations (Minor and Major)
2. Clinical round presentation, at least once weekly to cover various topics, problems or research.
 - a. Journal club meeting.
 - b. Departmental meetings/ morbidity and mortality meetings.
 - c. Grand meeting rounds.
 - d. Case presentations
3. Trainees should be actively involved and fully responsible for patient care including sharing in making decisions about diagnosis and management under supervision of the consultants.
4. Trainees should be responsible (under supervision) for outpatient routine work.
5. Trainees must take supervised shifts according to the hospital's requirements and regulations.
6. Trainees should be responsible for supervised admission of the patients from the OPD or the ER.
7. Trainees should share in the completion of the following documents under supervision.
 - 1- Complete history and physical examination form.
 - 2- Investigation requests, (laboratory, radiology, pathology, etc.).
 - 3- Reporting the results
 - 4- The plan of management after consultation and approval from supervisors
 - 5- Discussion of the case with the trainer and consultants
 6. Sick leaves and medical reports

(6) Teaching methods:

- .1. Lectures.
- .2: Clinical training
- .3: Case discussion.
- .4: Clinical seminar
- .5: E- learning
- .6: Self-directed learning

(7) Assessment methods:

After fulfilling the logbook, the student can be allowed to enter the exam after at least 6 months , and he can postpone the exam.

At the end of each semester the students will be assessed by the following exams:

- 1- Written exam for assessment of knowledge, intellectual skills
(written exam includes both short essay and MCQ exam as one station)
2. Structural Oral exam for assessment of knowledge, intellectual skills .
3. Clinical exam (performing strabismological examination, and discussion on clinical cases) for assessment of knowledge, practical, and attitude skills.
4. Surgical exam (by performing a strabismus surgery at operative theater).

Pass mark is 70% of each station (written, oral , clinical, and surgical stations), and 70% of total mark of each semester.

5. The Pass mark is 70% of each station, and 70% of total mark in each semester.

N.B

1-There is a log book for the students to collect all their activities during training, there is no marks for the logbook.

2- Fulfilling the logbook is very important to allow the student to enter the exam of each semester.

Assessment methods and marks

Strabismus course	Marks					Total
	Written exam		Oral exam	Clinical exam	Surgical exam	
	Short essay	MCQ				
Semester 1 (Basic course)	30	10	20	20	20	100
Semester 2 (Advanced course)	80	20	100	100	100	400

The Pass mark is 70% of each station, and 70% of total mark in each semester

الامتحان الفصلي

اجمالي	الدرجة					المقرر
	جراحي	كلينيكال	شفهي	تحريري		
				MCQ	تحريري	
100	20	20	20	10	30	<u>الفصل الدراسي الاول</u> (مقرر اساسيات تشخيص وعلاج امراض الجهاز الحركي للعين والحوال)
400	100	100	100	20	80	<u>الفصل الدراسي الثاني</u> (المقرر المتقدم في تشخيص وعلاج امراض الجهاز الحركي للعين والحوال)

يتطلب النجاح في كل فصل دراسي الحصول على 70% على الاقل في كل محطة

(8) References:

1. The AAO (2022) ;Basic and Clinical Science Course section 6 : Pediatric ophthalmology and strabismus.
2. Christopher J. Lyons, Scott R. Lambert · 2016 Taylor and Hoyt's Pediatric Ophthalmology and Strabismus.
3. Irene H. Ludwig · (2021). Strabismus Surgery: Innovative and Classic Approaches.
4. Agarkar, S. (2011). Strabismus Anatomical Pearls. In P. Walimbe (Ed.), Step by step squint surgery. India: Jaypee Brothers Medical Publishers.
5. Wright, K. W., & Strube, Y. N. J. (2012). Color Atlas Of Strabismus Surgery Strategies and Techniques (4th ed.,) . USA: Springer.
6. Lambert S, Lyons C. Taylor and Hoyt's Pediatric Ophthalmology and Strabismus. 5th ed. Elsevier; 2016.
7. NARS 2009
8. ICO 2017 (International Council Of Ophthalmology (ICO) Subspecialty Curricula Development Project)

5. Recommended Websites

1. ICO, <https://icoph.org/education/subspecialty/>
2. American Academy of Ophthalmology EyeWikiPediatric ophthalmology and strabismus.
<https://www.aao.org/pediatric-ophthalmology-strabismus>
3. University of Iowa Hospital and Clinics Eye Rounds – Case Presentations
<https://webeye.ophth.uiowa.edu/eyeforum/cases.htm> (Pediatric ophthalmology and strabismus)
4. Online Journal of Ophthalmology Atlas of Ophthalmology –strabismus and ocular motility disorders
<https://www.atlasophthalmology.net/folder.jsf;jsessionid=F42A2B14FC9B6B3B855860AC9D076256?node=5120&locale=en>.
- 4.. Digital Journal of ophthalmology,Harvard university.
<https://www.djo.harvard.edu/site.php?url=/physicians/gr>

Periodicals:

- 1. Journal of AAPOS
- 2. Journal of Pediatric Ophthalmology and Strabismus
- 3. The American Orthoptic Journal
- 4. Binocular Vision and Strabismus Quarterly
- 5. Strabismus
- 6. American Journal of Ophthalmology

(9) Facilities and resources mandatory for course completion:

1-Lecture Halls.

2-Data show.

3-Strabismus clinics.

4- Investigative ophthalmology rooms equipped with ERG, VEP, OCT, US, Fundus photography.....

5- Operating room

6- Library

7- Facilities for tutors:

* Computers and high-speed internet connection.

* International databases.