

# Faculty of Medicine Ain Shams University

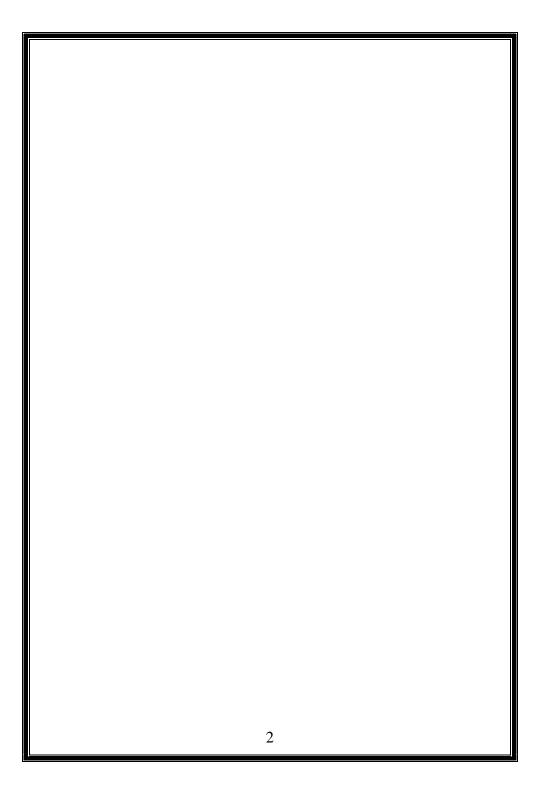
# Postgraduate Studies

Medical Doctorate in Audiology

لدرجة الدكتوراه في أمراض السمع

Program Code: ORL720

Program Guide and Logbook



# Candidate Curriculum vitae

# [Name]

Please attach your recent photo

[telephone no]
[mobile no]
[mailing address]

[email address] [postcode]

# Experience

[organization]
[your present
job title]

[start date]
[location]
[responsibilities]

[organization]
[previous job
title]

[start and end date]

[location]
[responsibilities]

[organization]
[previous job
title]

[start and end date]
[location]
[responsibilities]

# Education

[certificates]
[start and end date]
[school or college]

Training		
[any other training	hat will be useful in your job]	
Filled by post	graduate authorities	
	9	
Date of Registration		
Date of Registration		
First semester		
First semester		
First semester Second semester		
First semester Second semester Third semester		
First semester Second semester Third semester Fourth semester		
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#### I. Welcome Statement:

The Audiology Unit welcomes you to the Degree of Medical doctorate in Audiology. As a department we are committed to medical student education and continuously strive to improve your educational experience.

This handbook presents information guide and logbook activity of this degree administered by the Audiology unit, Otolaryngology department, Faculty of Medicine, Ain Shams University.

#### **II.** Mission Statement:

The mission of the Faculty of Medicine, Ain Shams University is "Preparation of a trained physician, researcher and life long tutor capable of following standards of medical care and ethics, with managerial and technical skills in his specialty. Furthermore, promotion outstanding programs of health care to serve the society, environmental development and targeted scientific research for continual improvement of health".

The mission of this degree is to provide practicing clinicians in Audiology with a high quality and efficient training in the field of audio-vestibular and communicative disorders. Furthermore, to provide extensive training necessary to implement hearing screening & conservation programs to overcome the impact of such handicap on the society.

# III. Senior Supervisor and Affilated Departments and Hospitals

Prof.	
E-mail:	

**Senior Supervisor** 

#### **Affiliated Departments and Hospitals**

Otorhinolaryngology department, Audiology unit, Faculty of Medicine, Ain Shams University.

Otorhinolaryngology department, Audiology unit, Ain Shams Specialized Hospital. Hearing & Speech Institute.

Audiology Units, Military Hospitals.

Audiology Unit, Otorhinolaryngology department, in all Universities Hospitals.

### IV. Program Specifications

#### 1- Basic Information

1.	Program title:
	Medical doctorate in Audiology
2.	Program type
	Single Double Multiple
<b>3.</b>	Faculty
	Ain Shams University – Faculty of medicine
4.	Department
	Otorhinolaryngology department, Audiology unit
5.	Assistant coordinator
	Coordinator
6.	Last date of program approval:

#### 2- Professional Information:

#### 1. Program aims:

- Implementation and reinforcement of the rules of both medical practice and research ethics.
- 2. Acquisition of basic and updated theoretical knowledge in the field of hearing, balance and communicative disorders.
- **3.** Refining the clinical skills based on a systematic approach to diagnose audio-vestibular disorders and to manage them efficiently and effectively.
- **4.** Refining the clinical skills necessary for early diagnosis and early intervention.
- **5.** Development of the skills necessary to design audiological set-up for different audio-vestibular services (diagnostic & rehabilitative).
- **6.** Development of the skills necessary to initiate and implement hearing screening & hearing conservation programs.
- **7.** Enhancement of self-education abilities and adopting it as a way of continued medical education.
- **8.** Understanding the basics of well designed research that aims at the community benefit.
- **9.** Improvement of teaching (tutoring) abilities, communication and expression skills of candidates.

# 2. Intended learning outcomes (ILOs):

# a. Knowledge and understanding:

By the end of this program the student should be able to:

**a.1** Understand the patho-physiological correlates of audio-vestibular system related to different disorders.

- **a.2** Know the basic and updated knowledge of investigative tools necessary for the diagnosis of audio-vestibular disorders.
- **a.3** Understand the concept & value of hearing screening for neonates, infants & personnel exposed to noise.
- **a.4** Acquire in-depth knowledge in different technological advances in hearing devices & electronics related to speciality.
- **a.5** Acquire the skill to select appropriate rehabilitation programs for hearing & balance problems.
- **a.6** Outline the role of allied medical specialties.

# b. Intellectual capabilities:

### By the end of this program the student should be able to:

- **b.1** Plan & apply comprehensive diagnostic and treatment services in audio-vestibular and communicative disorders.
- **b.2** Make decision & plan different rehabilitation strategies & devices for audio-vestibular and communicative disorders.
- **b.3** Design & implement screening programs in different fields of Audiology.
- **b.4** Contribute in planning of education of hearing impaired including classroom acoustics & assistive listening devices.
- **b.5** Select appropriate tests and investigations for accurate diagnosis of different auditory and balance disorders and apply dysfunction to its physiologic correlates.

# c. Professional and practical skills:

# By the end of this program the student should be able to:

- **c.1** Develop hands on experience on running advanced equipment for audiovestibular diagnostic work-up.
- **c.2** Perform efficiently calibration & trouble-shooting for diagnostic equipment, hearing aids & cochlear implant devices.
- c.3 Take a focused medical history with proper analysis.
- **c.4** Examine properly and systematically the ear, central auditory pathways, vestibular system and its central vestibular connections with an exact follow of the standard rules
- c.5 Interpret the patient data (history and examination) in an organized and informative manner.
- **c.6** Implement hearing conservation programs and manage hearing loss due to occupational hazards.
- **c.7** Put a diagnosis and differential diagnosis of different cases.
- **c.8** Develop skills in hearing aid selection, fitting & verification and in planning rehabilitation program within a multidisciplinary management plan (if needed).

#### d. General and transferable skills:

### By the end of this program the student should be able to:

- **d.1** Gain communication skills with paramedical personel, patients and their care givers, juniors, professors, peers.....
- **d.2** Master computer skills in research, data base filing and preparation of presentation.
- **d.3** Prepare & share in scientific presentations & worhshops.
- **d.4** Contribute in organization of seminars & conferences.
- **d.5** Gain time management skills in performing the diagnostic work-up, presentations.
- **d.6** Work in a team

#### **3-** Academic standards: (Benchmarks)

# Audiological Medicine. Joint Royal Colleges of Physician Training Board. www.jrcptb.org.uk

#### 4- Curriculum structure and contents:

a. **Program duration:** three years (6 semesters)

#### b. Program structure:

ov 110gram seruceurev							
	المناهج						
الساعات	الكود	المقررات الدراسية					
المعتمدة							
		دورة أساسيات البحث العلمي	متطلبات الكلية				
		لا يوجد	الجزء الأول				
15			الرسالة				
		_					
2	ORL7201	علوم أساسية في السمع و الإتزان	الجزء الثانى				
6	ORL7202	قیاسات سمعیة و توازن					
6	ORL7203	قياسات متقدمة في السمع و الإتزان					
6	ORL7204	تأهيل أمراض السمع و الإتزان					
4	ORL7205	معينات سمعية و الكترونيات					
		الأضطرابات النفسيه والسلوكيه المرتبطه					
4	ORL7206	بِأمراضِ السمعِ و الأتزان					
		أنف و أذن و أشعه تشخيصيه					
		يتم اختيار مادة واحدة من:	المقررات الإختيارية				
2	E7041	1 - وراثة					
2	E7024	2 - إحصاء					
	E7088	3 - الإصابات المهنية الخاصة بالسمع					
15			كراسة الأنشطة				
60			المجموع				

#### 5- Program courses:

a. Compulsory course: 28 credit hours

Code No.	Title		No of hour		
		L/SDL	C	F	
ORL7201	Basic sciences in hearing &	30			
	Balance				
ORL7202	Hearing & Balance assessment	30	30	180	
	&management				
ORL7203	Advanced Hearing & Balance	45	15	180	
	tests				
ORL7204	Rehabilitation of hearing &	30	30	90	
	Balance				
ORL7205	Hearing aids & electronics	22.5	30	90	
ORL7206	Psycholgical & behavioral				
	disorders related to hearing &				
	Balance; ENT; Diagnostic				
	radiology				

L: Lecture, C: Clinical, F: field and SDL: Self directed learning

#### b. Elective Course: 2 credit hours

Code No.	Course Title	N	lo of house	
Code No.	Course Title	No of hours		
		L/SDL	C	F
E7041	Genetics			
E7024	Statistics			
E7000	Occupational Hearing-Related	15	15	30
E7088	Disorders			

L: Lecture, C: Clinical, F: field and SDL: Self directed learning

# 6- Program admission requirements:

المادة (7): يشترط لقيد الطالب للحصول على درجة الدكتوراه :-

- 1- أنُ يكون حاصلاً على درجة الماجستير في مادة التخصص أو إحدى المواد الأساسية المتصلة بها من إحدى الجامعات المصرية أو على درجة معادلة لها
  - 2- موافقة جهة العمل على متطلبات الدراسة.
  - و- تسديد الرسوم ومصاريف التدريب وإستهلاك الأجهزة وإستيفاء المستندات المطلوبة في الملحق
- 10- التفرغ للدراسة لمدة خمس فصول دراسية على الأقل قبل دخول امتحان الجزء الثاني. ويمكن أن يتم التدريب لنفس المدة على الأقل في احد المستشفيات أو المراكز العلمية المعتمدة من الكلية بعد أستيفاء الشروط التي تحددها الأقسام المختصة.

# 7- Regulation for progression and program completion:

مادة (8): يتم التسجيل لدرجات الدكتوراه مرتين في العام: الأولى من أول يوليو حتى آخر أغسطس والثانية من أول يوليو حتى آخر أغسطس والثانية من أول نو فمبر حتى آخر ديسمبر 0

مادة (9): توزع الدراسة في كل عام جامعي على فصلين دراسيين مدة كل منهما خمسة عشر اسبوعاً . يبدا الأول في أول أكتوبر ويبدا الثاني في منصف فبراير. مع تنظيم فصل دراسي صيفي مكثف لمدة ستة اسابيع . و يتم التسجيل للفصل الدراسي قبل اسبوعين من بدايته على الاقل بعد إستيفاء الشروط حسب المقررات المسجلة و لاينبغي أن يزيد العبء الدراسي في الفصل الواحد عن 6 ساعات معتمدة ويجوز للطالب تعديل المقررات خلال اسبوعين من بداية الفصل الدراسي (بالحذف او الاضافة ). كما يجوز له الانسحاب خلال سته اسابيع من احد المقرارت دون احتسابه راسباً فيه.

مادة (17): مدة الدراسة للحصول على الدكتوراه ستة وثلاثون شهراً (ست فصول دراسية) يجتاز خلالهم الطالب برنامجاً تدريبياً متكاملاً بالقسم طبقاً للساعات المعتمدة الموضحة بالباب الخامس ويستوفى خلالها المطلوب منه فى كتيب متابعة الأنشطة ولا يسمح له بدخول الإمتحان قبل إستيفاء ثلاثة أرباع المطلوب منه من الساعات المعتمدة.

مادة (18): مدة الدراسة في الجزء الأول للدكتوراه إن وجد فصل دراسي واحد يجتاز بعده الطالب إمتحاناً ولا يشترط النجاح فيه بالكامل للإنتقال للدراسة في الجزء الثاني ويشترط خلالها التدريب بإحدى المستشفيات الجامعية أو المراكز المعتمدة من القسم ولجنة الدراسات العليا بالكلية سواء بالداخل أو الخارج على أن يتم إستكمال الدراسة طبقاً للساعات المعتمدة.

مادة (19): يقوم الدارس لدرجة الدكتوراه بتسجيل موضوع الرسالة مع القيد للدرجة ولا تجوز مناقشة الرسالة قبل مرور عامين على التسجيل للدرجة ولا يخصص لها درجات.

مادة (20): يقوم الدارس لدرجة الدكتوراه بإستيفاء متطلبات الجامعة قبل التسجيل ومتطلبات الكلية ومناقشة الرسالة قبل دخول إمتحان الجزء الثاني. ومتطلبات الجامعة هي الحصول على شهادة التويفل في اللغة الإنجليزية (مجموع 550 درجة) ومتطلبات الكلية هي حضور دورات معتمدة من لجنة الدراسات العليا بالكلية في مجال التخطيط والدراسات الطبية والإحصاء الطبي أو إجتياز إختبارات خاصة تحددها اللجنة.

مادة (21): الساعات المعتمدة لدراسة الدكتوراه ست و تسعون ساعة منها ست و ثلاثون ساعة تمت دراستهم اثناء الماجستير و يضاف ستون ساعة معتمدة على الأقل ويخصص منها خمس عشرة ساعة لكتيب متابعة الأنشطة وخمس عشرة ساعة للرسالة وست ساعات على الأقل للجزء الأول إن وجد.

مادة (22): مدة القيد لدرجة الدكتوراه خمس سنوات ويجوز لمجلس الجامعة بناءاً على طلب مجلس الكلية وبعد موافقة لجنة الدراسات العليا بالكلية بعد طلب مجلس القسم وإستناداً إلى تقارير سنوية من جميع المشرفين على الطالب السماح بإضافة عام واحد وبحد أقصى ثمان سنوات من تاريخ القيد للحصول على درجة الدكتوراه.

مادة (23): تلتزم الاقسام المعنية بالأشتراك مع أقسام المواد المرتبطة بوضع إمتحانات موضوعية تشمل وسائل التقييم المختلفة من أسئلة طويلة وقصيرة ومتعددة الإختيارات ، وإختبارات إكلينيكية مقننة تقيس المهارات المختلفة على أن تشمل كراسة المناهج تفاصيل ذلك وتعتمد من لجنة الدراسات العليا بالكلية .

مادة (24): مجموع درجات الامتحان النهائي للدكتوراه 1500 درجة منها 300 درجة للجزء الأول إن وجد. ويضاف اليها المعدل الفصلي التراكمي بما يوازي 400.

مادة (25): يعقد إمتحان الدور الأول في أكتوبر ونوفمبر من كل عام ويعقد إمتحان الدور الثاني في أبريل ومايو من كل عام.

مادة (26): يكون النجاح في مواد الدكتوراه بعد الحصول على 60% من درجة التحريري والعملي والاكلينيكي والشفوي كل على حدة.

مادة (29): في حالة إستنفاذ مدة القيد يمكن لطالب الدراسات العليا إعادة التسجيل مرة أخرى ولا يعتد بالنجاح في الجزء الأول أو الرسالة ويجب إعادتهما.

Assessment Schedule and Weighing of Assessments

Item			Mark		Points	GPA score	حالة الطالب Student state
			During End of semester Total				
First semeste	er (If present)	80	300	380			
Second seme	ster	80		80			
Third semest	ter	80		80			
Fourth seme	ster	80		80			
Fifth semeste	er	80		80			
Sixth	Written						
semester Final exam	Oral						
	Practical /Clinical						
Total		400	1500	1900			

<sup>\* 1500</sup> if there is no first semester

A	نقاط	4	:	90 % فأكثر	- 1
A	نقاط	3.67	••	من85% حتى أقل من 90 %	-2
B <sup>+</sup>	نقاط	3.33	••	من80% حتى أقل من 85%	- 3
В	نقاط	3.00	••	من75% حتى أقل من 80%	- 4
B.	نقاط	2.67	••	من70% حتى أقل من 75%	- 5
C+	نقاط	2.33	••	من65% حتى أقل من 70%	- 6
C	نقاط	2.00	:	من62% حتى أقل من 65%	-7
C-	نقاط	1.67	••	من60% حتى أقل من 62%	- 8
F		صفر	:	أقل من 60%	- 9

ويتم حساب المعدل الفصلي (GPA) على أساس مجموع حاصل ضرب نقاط كل مقرر مضروباً في عدد ساعاته المعتمدة مقسوماً على الساعات المعتمدة للمقررات التي درسها الطالب في الفصل الدراسي. كما يتم حساب المعدل التراكمي للطالب (CGPA) على أساس مجموع حاصل ضرب النقاط التي حصل عليها الطالب في كل مقرر مضروباً في عدد ساعاته المعتمدة مقسوماً على مجموع الساعات المعتمدة الكلية. في حالة الرسوب في مادة أو مجموعة من المقررات في الدبلوم أوالماجستير أو الدكتوراه يتم الإعادة في المادة أو المجموعة فقط أما إذا تكرر رسوب فيحسب له عند النجاح تقدير 60% فقط (اع1.67 نقاط اى 7).

# BASIC SCIENCES IN HEARING & BALANCE COURSE SPECIFICATION (ORL7201)

## I. PHYSIOLOGY (ORL7201A)

University: Ain Shams Faculty of Medicine

Program on which the course is given: Medical Doctorate in Audiology

Major or minor element of programs: Major

**Department offering the program:** 

Otorhinolaryngology department, Audiology unit

**Department offering the course:** 

Otorhinolaryngology department, Audiology unit

**Academic year:** Medical Doctorate – 1st semester

Date of specification approval:

#### A. Basic Information:

Title: Basic Sciences: Physiology
Credit Hours: 1.5hrs
Lecture: 1.5hrs/w
Code: ORL7201a
Total: 22.5hrs

Coordinator .....

#### **B. Professional Information:**

#### **Course Aims:**

- 1. To explore in detail the functions of the ear and its central nervous connections & relation to other systems.
- 2. To integrate physiological data & mechanisms of hearing and balance with the ongoing basic sciences: anatomy, acoustics and physics and their clinical applications.
- **3.** To develop the basic scientific research skills as well as effective communication and team work attitudes.

# **Intended Learning Outcomes (ILOs) from the Course:**

# a. Knowledge and understanding:

# By the end of the course the candidate will be able to:

- **a1.** Recognize and describe hearing end organ and its central nervous system connections.
- **a2.** Recognize and describe the balance end organs and their central nervous system connections
- a3. Understand the physiologic mechanisms of peripheral hearing.
- **a4.** Understand physiologic mechanisms of central auditory abilities.
- **a5.** Understand the mechanisms of gaze stabilization
- **a6.** Understand the mechanisms of gait and posture control.
- **a7.** Understand physiologic basis of brain plasticity concerning hearing and balance systems.

#### b. Intellectual skills:

#### By the end of the course the candidate will be able to:

- **b.1** Integrate the physiology of the hearing and balance with other basic and clinical sciences.
- **b.2** Identify subjects with suspected hearing or balance dysfunction and apply dysfunction to its physiologic correlate
- **b.3** Direct subjects with suspected hearing or balance dysfunction to the proper investigation.
- **b.4** Interpret the clinical situations resulting from physiological malfunction of the hearing and balance functions.

#### c. Professional skills:

### By the end of the course the candidate will be able to:

- **c.1** Select of the diagnostic or screening methods which will be most appropriate and informative in a given clinical situation.
- c.2 Interpret the hearing and balance tests based on their acquired knowledge in physiology.

#### d. General and transferable skills:

#### By the end of the course the candidate will be able to:

- **d.1** Gather and organize material from various sources (including library, electronic and online resources).
- **d.2** Understand the importance of continuing professional development.

#### Course content:

Topics	No of hours
-	Lectures
Physiology	22.5hrs
Dimensions of Hearing	2
External ear Functions	2
Middle Ear Functions	2
Inner Ear Functions	2.5
Central Auditory Pathway	3
Physiology of Speech	3
Balance Control	2
Vestibuo-ocular Reflex	2
Vestibulo-Spinal Reflex	2
Otolith	2

#### **Student Assessment Methods**

- 1. Short essays to assess knowledge
- 2. MCQs to assess knowledge and intellectual skills

#### Weighing of assessments:

Written examination: 75 marks
Total: 100 marks
End semester exam: 35marks

#### List of References

- 1. Course Notes (paper and / or electronic)
- 2. Essential Books (Textbooks):
  - Cumming's Otolaryngology- Head and neck surgery, Charles W. Cummings Mosby Inc, 2005.
  - Scott-Brown Othorhinolaryngology Head & Neck Surgery, Michael Gleeson, Edward Arnold, ltd, 2008.
  - Practical Management Of The Balance Disorder Patient, Neil T. Shepard& Steven A. Telian, Singular group, Inc, 1996.
  - Balance Function Assessment and Management, Gary Jacobson and Neil Shepard, Plural publishing. Inc, 2008.

# II. ACOUSTICS (ORL7201B)

University: Ain Shams Faculty of Medicine

Program on which the course is given: Medical Doctorate in Audiology

Major or minor element of programs: Major

**Department offering the program:** 

Otorhinolaryngology department, Audiology unit

**Department offering the course:** 

Otorhinolaryngology department, Audiology unit

**Academic year:** Medical Doctorate – 1st semester

Date of specification approval:

C. Basic Information:

Title: Basic Sciences: Acoustics Code: ORL7201b

Credit Hours: 0.5hrs Lecture: 1.5hrs/2w, 10weeks Total: 7.5hrs

Coordinator .....

# **D. Professional Information:**

#### **Course Aims:**

- To acquire fundamentals of hearing science and acoustics of sounds including speech.
- 2. To recognize the correlation between the physiology of the auditory pathway and sound as a physical phenomenon.

# **Intended Learning Outcomes (ILOs) from the Course:**

# a. Knowledge and understanding:

# By the end of the course the candidate will be able to:

**a.1** Understand the theory and terminologies of sound wave phenomena as a mechanical vibrating system.

- a.2 Outline the principles of sound propagation.
- **a.3** Recognize the clinical and technical relevance of sound propagation such as transmission, absorption, interference, diffraction, and reflection.
- **a.4** Understand the acoustic principles underlying sound measurement
- **a.5** Understand the basic concepts of psycho- acoustics.

#### b. Intellectual skills:

#### By the end of the course the candidate will be able to:

- **b.1.** Comprehend the changes of sound wave during its propagation.
- **b.2.** Describe and use different types of measurement units in the clinical and community set-ups.
- **b.3.** State the physical units for sound measurements
- **b.4.** Describe the psycho-acoustic correlates of sounds.
- **b.5.** Describe the clinical relevance of speech acoustics.

#### c. Professional skills:

#### By the end of the course the candidate will be able to:

- c.1 Recognize acoustic models of the human ear and how to apply them in research projects and clinical field studies.
- c.2 Describe how principles of sound wave phenomenon can be applied in construction and calibration of sound treated rooms and sound delivery equipment.
- **c.3** Describe how principles of sound wave phenomenon can be applied in hearing conservation programs and classroom acoustics.
- c.4 Recognize the different sound stimuli that can be used in clinical testing
- c.5 Recognize speech defects in hearing impaired patients and correlate this assessment with the audiological data for proper management.

#### d. General and transferable skills:

#### By the end of the course the candidate will be able to:

- **d1.** Acquire time management skills to accomplish individual designated tasks by a given date;
- d2. Gain oral presentation skills.
- **d3.** Gather and organize material from various sources (including library, electronic and online resources).

#### **Course content:**

Topics	No of hours
	L & SDL
Acoustics	7.5hrs
Acoustics of speech	2
Sound propagation	1

Sound measurement and dB notation	1.5
Psychoacoustics	2
Sound wave phenomenon	1

L: lectures, SDL: self directed lectures

#### **Student Assessment Methods**

- 1. Short essays to assess knowledge
- 2. MCQs to assess knowledge and intellectual skills

#### Weighing of assessments:

Written examination: 25 marks Total: 25 marks

End semester exam: 15 marks

#### List of References

- 1. Course Notes (paper and / or electronic)
- 2. Essential Books (Textbooks):
  - Fundamentals of Hearing an introduction, William yost, Academic press, inc,1994
  - Hearing Science, Diana Emanuel & Tomasz Letowski, Lippincott Williams & Wilkins, 2009.
  - Bases of Hearing, John Durrant & Jean Lovering, Williams & Wilkins, 1995.
  - Speech Science Primer, Laurence Raphael, Gloria Borden & Katherine Harris, Williams & Wilkins, 2006.

# HEARING & BALANCE ASSESSMENT & MANAGEMENT COURSE SPECIFICATIONS (ORL7202):

University: Ain Shams Faculty of Medicine

**Program on which the course is given:** Medical Doctorate in Audiology **Major or minor element of programs:** Major

**Department offering the program:** 

Otorhinolaryngology department, Audiology unit

**Department offering the course:** 

Otorhinolaryngology department, Audiology unit

**Academic year:** Medical Doctorate – 2<sup>nd</sup> semester

Date of specification approval: .....

#### A. Basic Information:

Title: Hearing & Balance Assessment & Management
Credit Hours: 6 hrs
Lectures: 2hrs/w
Clinical: 2hrs/w
Field: 12hrs/w
Total: 30 hrs
Total: 30hrs
Total: 180hrs

Coordinator .....

#### **B. Professional Information:**

#### **Course Aims:**

- 1. Delivering basic and updated theoretical knowledge in the field of audiolo-vestibular medicine with special regards to evidence based rules as well as international and local medical guidelines.
- 2. Implementing and reinforcing both practical and research medical ethical rules.
- Enhancing self-education abilities and adopting it as a way of continued medical education.
- 4. Refining of the clinical skills based on a systematic approach to diagnose audio-vestibular disorders and to manage them efficiently and effectively.
- 5. Developing practical and procedural skills that are necessary in the practice. Awareness of the new tools and how to utilize and analyze their results to help the profession.
- 6. Develop skills in the sound care of tools applied in diagnosis of audiological disorders and ideal management of troubles related to these tools.
  - 7. Understanding the basics of well designed research that aims at the community benefit.
  - 8. Improving communication and expression skills of candidates.
  - 9. Developing skills to become the leader of team in the field of audiolovestibular medicine which needs patience and tolerance.
  - 10. Improving teaching abilities as the graduate will be responsible for other junior physicians in his profession.

# **Intended Learning Outcomes (ILOs) from the Course:**

# ${\bf a.} \ \ {\bf Knowledge} \ {\bf and} \ {\bf understanding:}$

# By the end of the course the candidate will be able to:

- a.1 Recognize clinical diagnosis of diseases affecting the audiovestibular system.
- **a.2** Investigate tools necessary for the diagnosis of the audio- vestibular disorders.
- a.3 Identify clinical skills necessary for diagnosis of audio-vestibular diseases.
- a.4 Recognize medically related disorders and critical care in urgent

disorders.

- a.5 List neuro-psychiatric related disorders.
- **a.6** List audio-vestibular manifestation of systemic diseases.

#### b. Intellectual skills:

#### By the end of the course the candidate will be able to:

- **b.1** Specify medical dilemmas and complexities and how to solve them.
- b.2 Make conclusions and be able of scientific discussion.
- **b.3** Select from different choices based on multiple determining factors as social, scientific, economic etc...
- **b.4** Prioritize and tailor the different guidelines to individual situations.

#### c. Professional skills:

#### By the end of the course the candidate will be able to:

- c.1 Take a focused medical history with proper analysis and conclusions.
- **c.2** Examine properly the audio-vestibular system with an exact follow of the standard clinical rules and interpret signs individually.
- c.3 Integrate data from the history and the examination.
- **c.4** Ask for the proper investigations to be done for a given medical problem.
- c.5 Put a diagnosis and differential diagnosis of different cases.
- **c.6** Write a treatment prescription for a given medical problem within a multidisciplinary management plan if needed.
- c.7 Identify patients needing hospitalization.
- c.8 Identifying patients in need for higher specialization.
- **c.9** Interpret investigative forms and use their findings in diagnosis and therapy.

#### d. General and transferable skills:

# By the end of the course the candidate will be able to:

- **d.1** Understand the importance of continuing professional development.
- **d.2** Demonstrate knowledge of the importance of ethical approval and patient consent for clinical research.
- **d.3** Acquire the ability of assisting and teaching younger audiologists.
- **d.4** Work cooperatively and show respect for other opinions. Gain communication skills with workers, nurses, juniors, professors, peers, patients and their care givers.
- **d.5** Master computer skills in research, data base filling and preparation of presentation.
- **d.6** Use computer efficiently in solving medical problems.
- **d.7** Present a research assignment orally and deliver it in both written and electronic form.
- **d.8** Acquire managerial skills.

#### **Course content:**

	No of hours			
Topics	L &	C	F	
	SDL			
Hearing & Balance assessment & management	30hrs	30hrs	180hrs	
Calibration	1			
Basic audiological evaluation	1			
Pure tone audiometry (air conduction)	2			
Pure tone audiometry (bone conduction)	1			
Speech audiometery	2			
Immittance testing (tympanometry)	1			
Immittance testing (acoustic reflex)	1			
Audiological evaluation of adults	2			
Pediatric evaluation	2			
Non organic hearing loss	1			
Ocupational and recreational hearing disorders	2			
Geriatric hearing loss	2			
Tinnitus assessment and management	2			
Functional anatomy of balance system.	2			
Balance disorders (definition, prevalence & impact)	1			
Assessment by history taking	1			
Assessment by office tests	2			
Assessment by ENG/VNG	2			
Diagnosis and differential diagnosis of balance	2			
disorders.				

L: Lecture, SDL: Self directed learning, C: Clinical, F: Field (practical)

#### **Student Assessment Methods**

- 1. MCQs to assess knowledge & understanding.
- 2. Problem solving questions to assess intellectual & analytical skills.
- **3.** Essay questions to assess the ability of the student to organize their knowledge & discuss issues related to a certain topics.
- 4. Oral exam to assess knowledge, general & tranferable skills.
- **5.** Clinical exam to assess competence in decision making, analytical skills and choice of management plan.

# Weighing of assessments:

Written examination: 150 marks
Oral examination: 50 marks
Clinical examination 100 marks

Total: 300 marks
End semester exam 80 marks

#### List of References

- 1. Course Notes (paper and / or electronic)
- 2. Essential Books (Textbooks):
  - Handbook of Clinical Audiology, Katz, J (2002).
  - Clinical audiology, Alford and Jerger (1993).
  - Basic principles and clinical applications of tympanometry, Shank and Shelt(1991)
  - Hearing assessment, Rintelmanne, W (1991).

# ADVANCED HEARING & BALANCE TESTS COURSE SPECIFICATIONS (ORL7203):

University: Ain Shams Faculty of Medicine

Program on which the course is given: Medical Doctorate in Audiology

Major or minor element of programs: Major

**Department offering the program:** 

Otorhinolaryngology department, Audiology unit

**Department offering the course:** 

Otorhinolaryngology department, Audiology unit

**Academic year:** Medical Doctorate – 3<sup>rd</sup> semester

Date of specification approval:

#### A. Basic Information:

Title: Advanced Hearing & Balance Tests
Credit Hours: 6 hrs
Lectures: 3hrs/w
Total: 45 hrs

**Field (Practical):** 12hrs/w **Total:** 180hrs

Coordinator

#### **B.** Professional Information:

#### **Course Aims:**

- 1. Advance in the art and science of evaluation of patients with audiovestibular disorders.
- **2.** Improve the knowledge and skills by providing clinical and practice training.
- **3.** Providing adequate and state of art knowledge of advanced hearing and balance tests.
- 4. Utilizing hands on and the lab for self intended training.

#### **Intended Learning Outcomes (ILOs) from the Course:**

### a. Knowledge and understanding:

# By the end of the course the candidate will be able to:

- a.1 Recognize the indications & needs for advanced tests.
- **a.2** Understand the various techniques for each of the advanced tests.
- a.3 Recognize and get training to use the audiological and vestibular instruments in labs.
- **a.4** Recognize the possible hazards and pitfalls and the preventive precautions and measures to avoid or deal with them.
- **a.5** Identify the interpretation of various test findings.
- **a.6** Correlate the results of various tests to help in proper diagnosis and management.

#### b. Intellectual skills:

#### By the end of the course the candidate will be able to:

- **b.1.** Choose the proper advanced test for every patient.
- **b.2.** Acquire proper assessment of test findings.
- **b.3.** Acquire proper decision making for difficult situations.
- **b.4.** Acquire proper and confident dealing multiple tests.

#### c. Professional skills:

# By the end of the course the candidate will be able to:

- **c.1.** Recognize and interpret the basic principles.
- **c.2.** Select appropriate instrument and protocol for every patient.
- c.3. Perform the evaluation within reasonable time with reliable test results.
- **c.4.** Interpret various advanced test results.

#### d. General and transferable skills:

# By the end of the course the candidate will be able to:

- **d.1.** Acquire the ability of assisting and teaching younger audiologists.
- **d.2.** Acquire the ability of arranging sets for teaching through hands on and labs
- **d.3.** Present a research assignment orally and deliver it in both written and electronic form.
- **d.4.** Understand the importance of continuing professional development.
- **d.5.** Contribution in organization of seminars and conferences.
- **d.6.** Demonstrate knowledge of the importance of ethical approval and patient consent for clinical research.
- **d.7.** Work cooperatively and show respect for other opinions.

# **Course content:**

	No of hours				
	L & SDL	C	F		
Advanced Hearing & Balance Tests	45hrs	15hrs	150hrs		
Electrophysiological tests: Introduction &	2				
Principles					
Auditory Brainstem Response	2				
Electrocochleography	1				
Middle latency response	1				
Cortical evoked potentials	1				
Event related potentials	2				
Speech evoked potentials	1				
Facial neurography	1				
Electrophysiological tests :Clinical evaluation in	1				
adults					
Electrophysiological tests: Clinical applications in	1				
pediatrics					
Intraoperative monitoring	1				
Otoacoustic emissions: Principles and Clinical	2				
applications)					
Newborn hearing screening.	2				
Screening in children	2				
Industrial hearing screening	1				
Industrial hearing conservation program	2				
Central auditory tests: Introduction and Principles	2				
Central auditory tests: Evaluation of adults	2				
Central auditory tests: Evauation of children	2				
Central auditory tests: Evaluation of elderly	1				
Central auditory tests: Protocol for intervention	2				
Advanced balance tests: Introduction & Principles	2				
Rotational chair	2				
Otolith function tests.	2				
VEMP	2				
Dynamic posturography	2				
VORTEQ	1				
Clinical applications & Protocols	2				

L: Lecture, SDL: Self directed learning and F: Field (Practical)

#### **Student Assessment Methods**

- 1. MCQs to assess knowledge & understanding.
- 2. Problem solving questions to assess intellectual & analytical skills.
- 3. Essay questions to assess the ability of the student to organize their knowledge & discuss issues related to a certain topics.
- 4. Oral exam to assess knowledge, general & tranferable skills.
- 5. Clinical exam to assess competence in decision making, analytical skills and choice of management plan.

# Weighing of assessments:

Written examination: 150 marks
Oral examination: 50 marks
Clinical examination 100 marks
Total: 300 marks
End semester exam 80 marks

#### List of References

- 1. Course Notes (paper and / or electronic)
- 2. Essential Books (Textbooks):

#### **Electrophysiological references:-**

- Hall, III, J. W. (2006) New Handbook of Auditory Evoked Responses. Boston: Allyn and Bacon. ISBN 0-205-36104-8.
- Roeser, R. J., Valente, M., Hosford-Dunn, H. (2000). Audiology: Diagnosis. New York: Thieme Medical Publishers, Inc. Chapters 3 and 19.
- Jacobson, J. T. (1994). Principles & Applications in Auditory Evoked Potentials. Boston: Allyn and Bacon.
- Hall, III, J. W., Mueller, III, H. G. (1997). Audiologists' Desk Reference, Volume 1, Diagnostic Audiology, Principles, Procedures, and Practices. San Diego: Singular Publishing Group, Inc. Articles:
- Jewett, D. L., & Williston, J. S. (1971). Auditory evoked far fields averaged from the scalp of humans. Brain, 4, 681-696.
- Hashimoto, I., Ishiyama, Y., & Nemoto, S. (1981). Brainstem auditory evoked potentials recorded directly from human brainstem and thalamus. Brain, 104, 841-859.
- Hall, J. W., III, Gray, l. C., Brown, D. P., & Tompkins, S. M. (1986). Clinical application of new concepts in auditory brainstem response measurement. Hearing Instruments, 37, 11-21.
- Hall, III, J. W. (1996). Handbook of Auditory Evoked Responses. Boston: Allyn and Bacon. ISBN 0-205-36104-8. Roeser, R. J.,

Valente, M., Hosford-Dunn, H. (2000). Audiology:Diagnosis. New York: Thieme Medical Publishers, Inc., Chapter 2 – Anatomy and Physiology of the Peripheral Auditory System. Chapter 18 – Electrocochleography.

- Katz,J (2002) Handbook of clinical audiology.
- Jacobson,(1999) Auditor brainstem response.

#### **Otoacoustic emission references:-**

- Hall, J.W. (2000). Handbook of Otoacoustic Emissions. Singular Publishing Company, New York, NY. ISBN 1-56593-873-9.
- Berlin, C. (1998). OAEs Basic Science for Clinical Applications.
- Singular Publishing Company, New York, NY. ISBN 1-56593-975-1.
- Robinette, M& Glattke, T. (1997) Otoacoustic emission: clinical application
- Gorga, M., Neely, S., Ohlrich, B., Hoover, B., Redner, J., & Peters, J. (1997). From laboratory to clinic: A large scale study of distortion product otoacoustic emissions in ears with normal hearing and ears with hearing loss. Ear and Hearing, 18(6), 440-455.
- Gorga, M., Neely, S., & Dorn, P. (1999). Distortion product otoacoustic emission test performance for a-priori criteria and for multifrequency audiometric standards. Ear and Hearing, 20(4), 345-362.
- Dorn, P., Piskorski, P., Gorga, M., Neely, S., & Keefe, D. (1999). Predicting audiometric status from distortion product otoacoustic emissions using multivariate analyses. Ear and Hearing, 20(2), 149-

# **Central auditory tests references:-**

- Bellis, TJ, Assessment and Management of Central Auditory Processing Disorders in the Educational Setting: from Science to Practice, 2nd ed., Singular Publishing, 2003, ISBN 0769301304.
- Recommended Bibliography:
- Bellis, T.J, and Ferre, J.M., Assessment and management of central auditory processing disorders in children. Educational Audiology Monograph, 4, 1996.
- Bellis, T.J., and Ferre, J.M., Multidimensional approach to the differential diagnosis of central auditory processing disorders in children, J Am Acad Audio, 10,319-328, 1999.
- Cacace, A.T., and McFarland, D.J., Central auditory processing disorders in school-age children: a critical review, J. Sp Hear Res, vol 1, 355-373, April, 1998.
- Chermak, G.D., Hall, J.W., and Musiek, F.E., Differential diagnosis and management of central auditory processing disorders and attention deficit hyperactivity disorder, J. Am Acad Audiol, vol 10, 289-303, June, 1999.

- Chermak, G.D., and Musiek, F.E., Managing central auditory processing disorders in children and youth, Am J. Audiol, 61-65, July, 1992.
- Chermak, G.,D., Somas, E.K., and Seikel, J.A., Behavioral signs of central auditory processing disorders and attention deficit hyperactivity disorder, J. Am Acad Audiol, vol 9, #1, 78-84, February, 1998.
- Gascon, G., Johnson R., and Burd, L., Central auditory processing in attention deficit disorder, J. Childhood Neurology, vol 1, 27-33, 1986.
- Hall, J.W., and Mueller, H.G., Central auditory processing disorder, chapter 11, in Audiologists' desk reference, Hall and Mueller (ed.), Singular Publishing, 1997.
- Hall, J.W., Central auditory processing disorder in Y2K: an introduction to audiologic assessment and management. The Hear J, vol 53, #10, 35-42, October, 1999.
- Katz, J., and Wilde, L., Auditory processing disorders, In Katz (ed.) Handbook of clinical audiology, fourth edition, chapter 32, 490-502, Williams and Wilkens, 1994.
- Katz, J., and Ivey, R.G., Spondaic procedures in central testing, In Katz (ed.) Handbook of clinical audiology, fourth edition, chapter 17, 239-255, Williams and Wilkens, 1994.
- Keith, R., Understanding central auditory processing disorders: diagnosis and remediation. The Hear J, vol 49, #1, 19-28, November, 1996.
- McFarland, D.J., and Cacace, A.T., Modality specificity as a criterion for diagnosing central auditory processing disorders, Am J Audiol, vol 3, #4, 36-48, November, 1995.
- Musiek. F.E., and Baran J.A., Central auditory assessment: thirty years of challenge and change, Ear and Hear, vol 8 #4, 22S-35S, 1987.
- Musiek, F.E., and Chermak, G.D., Three commonly asked questions about central auditory processing disorders: assessment, Am J. Audiol, vol 3, 23-27, November, 1994.
- Musiek, F.E., and Chermak, G.D., Three commonly asked questions about central auditory processing disorders: management. Am J. Audiol, vol 4, 15-18, March 1995.
- Musiek, F.E., and Lamb, L., Central auditory assessment: an overview, In Katz, J, (ed) Handbook and Clinical Audiology, fourth edition, chapter 14, 197-211, 1994.
- Page, J.M., Central auditory processing disorders in children, Otolaryngologic Clinics of North America, Symposium on central auditory disorders, vol 12, #2,May 1985.
- Phillips, D.P., Central auditory processing: a view from auditory neurosciences, Am J. Otol., vol #3, 338-352, May 1995.
- Rees, N., and Shulman M., I don't understand what you mean by

- comprehension, J.SP. Hear Dis, Vol XLIII, 209-219, May 1978.
- Task Force on Central Auditory Processing Consensus Development, Central auditory processing: current status of research and implications for clinical practice, Am J. Audiol, vol 5, #2, 41-54, 1996.
- Willeford, J.A., and Burleigh, J. M., Sentence procedures in central testing. In Katz (ed) Handbook of Clinical Audiology, Fourth Edition, chapter 18, 256-271, Williams and Wilkens, 1994.

### Advanced balance tests:-

- Robert W. Baloh and Vicente Honrubia, Clinical Neurophysiology of the Vestibular System, 3rd edition, Contemporary Neurology Series, Oxford University Press, New York 2001.
- Recommended (Required from your ENG Course): Handbook of Balance Function Testing -- Gary P. Jacobson, Craig W. Newman, Jack M. Kartush. Singular Publishing Group, 1997, First Ed.
- Shepard,N . & Telian,S. (1997): Practical management of the balance diorders.
- Herdmann, S. (2007) Vestibular rehabilitation. Third edition

# AUDITORY AND VESTIBULAR REHABILITATION COURSE SPECIFICATIONS (ORL7204):

University: Ain Shams Faculty of Medicine

**Program on which the course is given:** Medical Doctorate in Audiology **Major or minor element of programs:** Major

Department offering the program:

Otorhinolaryngology department, Audiology unit

Department offering the course:

Otorhinolaryngology department, Audiology unit

**Academic year:** Medical Doctorate – 4<sup>th</sup> semester

Date of specification approval:

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Title: Auditory & Vest	ibular Rehabilitation	Code: ORL7204
Credit Hours: 6 hrs	Lectures Threlw	Total: 30 h

Clinical: 2hrs/w Total: 30hrs

**Field:** 12hrs/w **Total:** 180hrs

Coordinator .....

#### D. Professional Information:

#### **Course Aims:**

- 1. To know the theoretical and methodological approaches to aural rehabilitation of adults and children with hearing impairment.
- To prepare a trained rehabilitative audiologist efficient to offer advanced techniques in aural rehabilitation including family-based management, multidiscipline approaches and complex assistive devices.
- To prepare a trained physician capable of formulating an appropriate treatment plan including measurable goals for patients with vestibular and balance disorders.
- **4.** To acquire the ability for conducting research related to rehabilitative audiology.
- To develop teaching skills in the field of aural and vestibular rehabilitation.

#### **Intended Learning Outcomes (ILOs) from the Course:**

#### a. Knowledge and understanding:

#### By the end of the course the candidate will be able to:

- a.1 Know the basic communication process
- **a.2** Understand the concept of intervention in infants, children and adults.
- **a.3** Identify the components comprising a classroom acoustical environment and understand its relation to hearing devices and assistive listening tools.
- a.4 Acquire in-depth knowledge in various methods of auditory training
- a.5 Understand the different mechanisms of recovery of the vestibular system and how they impact the course and content of rehabilitation.
- **a.6** Acquire the knowledge necessary to select the appropriate rehabilitation programs for vestibular and balance problems.

#### b. Intellectual skills:

# By the end of the course the candidate will be able to:

- b.1 Plan different rehabilitation strategies & decide type of devices for audio-vestibular and communicative disorders.
- **b.2** Contribute in planning of education of hearing impaired including classroom acoustics & assistive listening devices.
- **b.3** Implement structured counseling tools and communication strategies in rehabilitation.

#### c. Professional skills:

# By the end of the course the candidate will be able to:

- **c.1** Formulate an appropriate rehabilitation plan including measurable goals for hearing-impaired subjects.
- c.2 Guide an assessment of a given classroom's acoustical characteristics and propose remedies for improving classroom acoustics.
- c.3 Develop, implement and measure the progress of an intervention program based on examination, findings and knowledge
- c.4 Implement latest developments in computer-assisted speech and auditory training.

#### d. General and transferable skills:

### By the end of the course the candidate will be able to:

- **d.1** Prepare & share in scientific presentations & workshops.
- **d.2** Contribute in organization of seminars & conferences.
- **d.3** Acquire time management skills in rehabilitation planning and implementation

#### **Course content:**

Topics	No of hours			
	L & SDL	C	F	
Auditory & Vestibular Rehabilitation	30hrs	30hrs	180hrs	
Models of Communication	1			
Rehabilitative needs of children	1			
Rehabilitative needs of adults	1			
Rehabilitative needs of aged population	1			
Rehabilitative approaches: Principles	1			
Auditory training methods	3			
Speech reading methods	1			
Manual communication	1			
Total communication	1			
Assistive technology for enhancement of	2			
communication				
Educational setting for hearing impaired child	2			
Rehabilitation of special population	2			
Computer-assisted auditory rehabilitation	3			
Vestibular compensation	1			
Vestibular rehabilitation programs	2			

Balance rehabilitation programs	2	
Planning a vestibular & balance rehabilitation	2	
program		
Measures of outcome of a rehabilitation program	3	

L: Lecture, SDL: Self directed learning, C: Clinical and F: field

#### **Student Assessment Methods**

- 1. MCQs to assess knowledge & understanding.
- 2. Problem solving questions to assess intellectual & analytical skills.
- **3.** Essay questions to assess the ability of the student to organize their knowledge & discuss issues related to a certain topics.
- **4.** Oral exam to assess knowledge.
- 5. Clinical exam to assess competence in decision making, analytical skills and choice of management plan.

# Weighing of assessments:

Written examination: 150 marks
Oral examination: 30 marks
Clinical examination 100 marks
Total: 280 marks

End semester exam 80 marks

#### List of References

- 1. Course Notes (paper and / or electronic)
- 2. Essential Books (Textbooks):
  - Introduction to aural rehabilitation (Schow, R. & Nerbonne, M. 1980)
  - Foundation of aural rehabilitation.
  - Manual communication.
  - Communication assessment and intervention strategies (Lioyd, L. 1976)
  - Communication for the hearing handicapped (Oyer, H. 1976)

# HEARING AIDS & ELECTRONICS COURSE SPECIFICATIONS (ORL7205):

University: Ain Shams Faculty of Medicine

Program on which the course is given: Medical Doctorate in Audiology Major or minor element of programs: Major

**Department offering the program:** 

Otorhinolaryngology department, Audiology unit

**Department offering the course:** 

Otorhinolaryngology department, Audiology unit

**Academic year:** Medical Doctorate – 5<sup>th</sup> semester

Date of specification approval:

#### A. Basic Information:

Title: Hearing Aids & Electronics
Credit Hours: 4 hrs
Lectures: 1.5hrs/w
Clinical: 2hrs/w
Field: 6hrs/w
Total: 20.5 hrs
Total: 30hrs
Total: 90hrs

Coordin	ator				

#### **B. Professional Information:**

#### **Course Aims:**

- 1. To give essential knowledge of hearing aids and audiological equipment.
- **2.** To help to give the candidate the confidence to understand the prinicples of hearing aids and audiological equipment.
- 3. To cover all the components of hearing aids and audiological equipment
- **4.** To get theoretical, clinical and practical information on hearing aid selection, fitting, adjustment and evaluation.
- **5.** To get theoretical, clinical and practical knowledge on cochlear implants.
- **6.** to get updated knowledge in the areas of hearing aids, assistive listening devices and cochlear implants

# **Intended Learning Outcomes (ILOs) from the Course:**

# a. Knowledge and understanding:

By the end of the course the candidate will be able to:

- **a.1** Recognize the clinical and technical relevance of audiological equipment.
- **a.2** Understand the theory and terminology of hearing aids & cochlear implants.
- **a.3** Understand the basic properties of hearing aids & cochlear implants.
- **a.4** Know the state of the art in digital hearing aid technology and cochlear implant strategies.
- **a.5** Clear understanding of the relationship between signal processing and characteristics of the damaged cochlea.
- **a.6** Outline the principles of hearing aid & cochlear implant function and evaluation of its performance.
- a.7 List the indications for prescribing hearing aids & cochlear

- implants in adults and children.
- **a.8** Understand the basic methods of calculating hearing aid parameters.
- **a.9** Understand the basic methods of evaluation of hearing aid & cochlear implant performance.

#### b. Intellectual skills:

### By the end of the course the candidate will be able to:

- **b.1** Identify different circuits of hearing aids.
- **b.2** Identify the electroacoustic characteristics of hearing aids.
- **b.3** Describe the hearing aids suitable for every patient
- **b.4** Understand the indications for prescribing specific electroacoustic characteristics of hearing aids.
- **b.5** Review the materials and fitting parameters of different hearing aids
- **b.6** State the steps for hearing aid fitting and adjustment.
- b.7 Discuss the basic methods of calculating hearing aid gain and output (formulae) and the advantages and disadvantages of the different methods.
- **b.8** Summarize the steps for evaluation of hearing aid performance.
- **b.9** Identify different circuits of audiolgocial equipment.
- **b.10** Identify proper use of audiological instruments.
- **b.11** Troubleshooting of problems within audiological equipment.

#### c. Professional skills:

# By the end of the course the candidate will be able to:

- c.1 Identify different types of hearing aids.
- **c.2** Properly measure, adjust and evaluate different types of hearing aids.
- **c.3** Verify the hearing aid performance.
- c.4 Know and select the suitable type of hearing aid for each patient
- **c.5** Know and select the suitable type of hearing aid to treat different patients.
- **c.6** Discern the differences among types of hearing aids to selct the most appropriate to the individual patient.

#### d. General and transferable skills:

# By the end of the course the candidate will be able to:

**d.1** Maintain honesty and integrity in all interactions with teachers, colleagues and others with whom physicians must interact in their professional lives.

- **d.2** Recognize the scope and limits of their role as students as well as the necessity to seek and apply collaboration with other workers.
- **d.3** Demonstrate knowledge of the importance of ethical approval and patient consent for clinical research.
- **d.4** Use database to collect material needed for research.
- **d.5** Gather and organize material from various sources (including library, electronic and online resources).
- **d.6** Understand the importance of continuing professional development.
- **d.7** Demonstrate knowledge of the importance of ethical approval and patient consent for clinical research.
- d.8 Work cooperatively and show respect for other opinions.
- **d.9** Appraise responsibility towards work.

#### Course content:

Course content:							
Topics	No of						
	L & SDL	C	F				
Hearing aids &electronics	22.5hrs	30	90				
Types and components of hearing aids & cochlear	1.5						
implants.							
Hearing aids standards	1.5						
Electro acoustic characteristics of hearing aids	1						
Signal processing in hearing aids.	1.5						
Hearing aid coupling system	1						
Candidates for hearing aids	1						
Hearing aid selection and fitting	1.5						
Verification of hearing aid performance	1						
Recent technology in hearing aids.	2						
Counselling issues in hearing aid fitting	1						
Pediatric hearing aid fitting.	1						
Audiological instrument circuits & principles	2						
Running of audiological equipment.	1.5						
Cochlear implant selection criteria	1						
Preoperative evaluation	2						
Introperative monitoring	1						
Postoperative fitting and fine tuning	1						

L: Lecture, SDL: Self directed learning, C: Clinical and F: field

#### **Student Assessment Methods**

- 1. MCQs to assess knowledge & understanding.
- 2. Problem solving questions to assess intellectual & analytical skills.

- **3.** Essay questions to assess the ability of the student to organize their knowledge & discuss issues related to a certain topics.
- 4. Clinical exam to assess competence in decision making, analytical skills and choice of management plan.

## Weighing of assessments:

Written examination: 100 marks
Practical examination: 100 marks
Clinical examination 50 marks
Total: 250 marks

End semester exam 80 marks

#### List of References

- 1. Course Notes (paper and / or electronic)
- 2. Essential Books (Textbooks):
  - Dillon, Harvey (2001). Hearing Aids. Thieme Publishers.
  - Katz, J. (2002) Handbook of clinical audiology.
  - Cochlear Implant: A practical guide (Huw Cooper, 1991)
  - Cochlear Implant: Audiological Foundation (Tyler,1993)
  - Cochlear Implant: (Niparko, 2000).
  - Handbook of clinical audiology (Katz, 2002).
  - Cumming's otolaryngology & Head & Neck Surgery 2005.
- 3. Hearing aids journals.

# BEHAVIORAL & PSYCHOLOGICAL DISORDERS RELATED TO HEARING & BALANCE COURSE SPECIFICATIONS (ORL7206 A)

University: Ain Shams Faculty of Medicine

Program on which the course is given: Medical Doctorate in Audiology

Major or minor element of programs: Major

Department offering the program:

Otorhinolaryngology department, Audiology unit

Department offering the course:

Otorhinolaryngology department Audiology unit

& Neuropsychiatry department

**Academic year:** Medical Doctorate – 6<sup>th</sup> semester

Date of specification approval:

#### A. Basic Information:

Title: Psychology Code: ORL7206a

Credit Hours: 2 hrs Lectures: 1.5hrs/w Total: 22.5 hrs

**Practical**: 2hrs/2w **Total**: 15 hrs

Coordinator .....

#### **B.** Professional Information:

#### **Course Aims:**

- 1. To prepare audiologists who understand the psychology of hearing which is essential to understand impact of hearing problems.
- **2.** To understand the psychological, social and spiritual effects of acquired and longstanding hearing loss.
- **3.** To develop the skills needed to understand the psychological effects of hearing impairment and balance problems.

# Intended Learning Outcomes (ILOs) from the Course:

- a. Knowledge and understanding:
  - By the end of the course the candidate will be able to:
- a.1 Describe the relation of hearing to normal psychological development .
- **a.2** Describe the psychological, social and spiritual effects of acquired and longstanding hearing loss in adults.
- **a.3** Describe the psychological, social and academic effects of hearing loss in children.
- **a.4** Describe the effects of acquired hearing loss on couples and families.
- **a.5** Distinguish between issues commonly associated with deafness verses being hard-of-hearing.
- **a.6** Specify how and when a person with a hearing loss is likely to experience trauma.
- a.7 Describe the psychological and social effects of hearing loss in elderly.
- **a.8** Describe the fuctional, physical and emotional impact of balance disorders on adults.tissues.
- **a.9** Outline the effect of balance disorders on lifestyle of subjects particularly elderly subjects.
- **a.10**Delineate the psychological and sociological issues associated with cochlear implantation.
- a.11Describe the neuropsychiatric disorders

#### **b.** Intellectual skills:

#### By the end of the course the candidate will be able to:

**b.1** Identify the psychological, social and spiritual factors that affect the hearing impaired subjects.

- **b.2** Correlate these factors to the shape and lifestyle of hearing impaired subjects.
- **b.3** Identify the impact of balance problems on the patients.
- **b.4** Correlate physical, emotional and functional factore in balance disordered patients and how they shape the lifestyle of patients.
- **b.5** Correlate neuropsychiatric disorders with hearing disorders.
- **b.6** Describe a plan for management of patients with hearing disorders in association with neuropsychiatric disorders.

#### c. Professional skills:

## By the end of the course the candidate will be able to:

- c.1 Detect behavioral, social and emotional changes associated with hearing loss
- **c.2** Identify and detect different neuropsychiatric disorders that coexist with hearing problems.
- **c.3** Examine and detect any abnormalities in the behavior of balance disordered patients.
- **c.4** Plan the appropriate management of psychic problems associated with hearing and balance disorders

#### d. General and transferable skills:

### By the end of the course the candidate will be able to:

- **d.1** Maintain honesty and integrity in all interactions with teachers, colleagues and others with whom physicians must interact in their professional lives.
- **d.2** Recognize the scope and limits of their role as students as well as the necessity to seek and apply collaboration with other workers.
- **d.3** Use database to collect material needed for research.
- **d.4** Gather and organize material from various sources (including library, electronic and online resources).
- **d.5** Understand the importance of continuing professional development.
- **d.6** Demonstrate knowledge of the importance of ethical approval and patient consent for clinical research.
- **d.7** Work cooperatively and show respect for other opinions.
- d.8 Appraise responsibility towards work.

#### **Course content:**

Topics	No of hours		
	L & SDL	C	
Behavioral & psychological disorders related to hearing & balance	22.5hrs	15hrs	
Psychology	1		
Normal hearing and psychological development	2.5		

Psychological impact of hearing loss in children.	1	
Psychological impact of hearing loss in adults	2	
Psychological impact of hearing loss in elderly	2	
The psychological impact of hearing loss on families.	3	
Psychological and sociological issues associated with cochlear implantation.	2	
Diagnosis of pervasive developmental disorders	3	
Management of pervasive developmental disorders	2	
Psychological impact of dizziness in adults.	2	
The risk of falls in elderly and psychological impact.	2	

L: Lecture, C: Clinical or Practical and SDL: Self directed learning

### **Student Assessment Methods**

1. MCQs to assess knowledge & understanding.

**2.** Essay questions to assess the ability of the student to organize their knowledge & discuss issues related to a certain topics.

## Weighing of assessments:

Written examination: 75marks
Total: 75marks
End semester exam 35marks

#### **List of References**

- 1. Course Notes (paper and / or electronic)
- 3. Essential Books (Textbooks):
  - Harvey, M.A. (1999). Odyssey of hearing loss: tales of triumph. San Diego, CA: Dawnsign Press. Chapters 1-6, 8-11. (800-549-5350). ISBN 1-58121-006-X.
  - Lane, H., Hoffmeister, R & Bahan, B. (1996). A Journey into the Deaf-World. San Diego, CA: Dawnsign Press. Chapters 1, 2, 12, 14, 15. (800-549-5350). ISBN 0-915035-62-6.
  - Harvey, M.A. (2001), Listen with the heart: relationships and hearing loss, San Diego, CA: Dawn Sign Press. Chapters 1-4, 6-10, (800) 549-5350. ISBN.
  - Shepard, N. (2004): Practical management of dizzy patient.

# ENT OTOLARYNGOLOGY COURSE SPECIFICATIONS (ORL7206B)

University: Ain Shams Faculty of Medicine

Program on which the course is given: Medical Doctorate in Audiology

**Major or minor element of programs:** Major

**Department offering the program:** 

Otorhinolaryngology department, Audiology unit

### **Department offering the course:**

Otorhinolaryngology department

**Academic year:** Medical Doctorate – 6<sup>th</sup> semester

Date of specification approval:

C. Basic Information:

Title: Otolaryngology Code: ORL7206b

Credit Hours: 1.5 hrs Lectures: 2hrs/2w Total: 15 hrs Clinical: 1hrs/w Total: 15hrs

Coordinator .....

#### D. Professional Information:

#### **Course Aims:**

- To prepare physicians, specialized in audiology, to offer a high quality and efficient service in diagnosis and management of subjects with otologic disorders.
- 2. To develop the skills necessary to understand the clinical correlations between otologic disorders, nasopharyngeal disorders, neck structures and base of the skull.

## **Intended Learning Outcomes (ILOs) from the Course:**

## a. Knowledge and understanding:

## By the end of the course the candidate will be able to:

- a.1 Recognize and describe diseases of the external, middle and inner ear.
- **a.2** Recognize and describe diseases of the nasopharynx.
- **a.3** Understand the anatomical structures in the head and neck that may be involved in otologic disorders.
- **a.4** Correlate theoretical learning to practical surgical procedures.

#### **b.** Intellectual skills:

# By the end of the course the candidate will be able to:

- **b.1** Identify subjects with otologic disease and decide the proper investigations.
- **b.2** Plan & apply comprehensive diagnostic and treatment services for patients with otologic disorders.
- **b.3** Identify subjects with nasopharyngeal diseases and to direct them to proper investigations and management by ENT specialist.
- **b.4** Recognize the possible surgical hazards and the post operative complications of ear surgery.

### c. Professional skills:

# By the end of the course the candidate will be able to:

c.1 Select the diagnostic approaches which will be most appropriate and informative in a given clinical situation related to otologic problems.

- **c.2** Interpret the audiological investigations and correlate their findings with otological clinical and theoretical knowledge.
- c.3 Select appropriate management approach whether medical or surgical
- d. General and transferable skills:

## By the end of the course the candidate will be able to:

- **d.1** To prepare & share in scientific presentations & workshops in the field of otology.
- **d.2** To contribute in organization of seminars & conferences of shared interest between physician audiologists and neuro- otologists.

#### **Course content:**

Topics	No of	No of hours			
	L & SDL	C			
ENT	15hrs	15hrs			
External ear diseases: diagnosis & management	1				
Middle Ear diseases: diagnosis & management	2				
Medical treatment of inner ear diseases	1				
Surgical treatment of inner ear diseases	2				
Diseases of the nasopharynx	1				
Investigations and Treatment of nasopharyngeal	2				
diseases					
Surgical treatment of dizziness	2				
Tumors of petrous bone	2				
Trauma	2				

# L: Lecture, C: Clinical or Practical and SDL: Self directed learning Student Assessment Methods

- 1. MCQs to assess knowledge & understanding.
- **2.** Essay questions to assess the ability of the student to organize their knowledge & discuss issues related to a certain topics.

## Weighing of assessments:

Written examination: 75marks
Total: 75marks

End semester exam 35marks

#### List of References

- 2. Course Notes (paper and / or electronic)
- 4. Essential Books (Textbooks):
  - Cumming's Otolaryngology- Head and neck surgery, Charles W. Cummings, M.D., 2005, Mosby, Inc
  - Scott-Brown Othorhinolaryngology Head & Neck Surgery, Michael Gleeson, 2008, Edward Arnold, ltd

## DIAGNOSTIC RADIOLOGY COURSE SPECIFICATIONS (ORL7206C)

University: Ain Shams Faculty of Medicine

Program on which the course is given: Medical Doctorate in Audiology

Major or minor element of programs: Major

Department offering the program:

Otorhinolaryngology department, Audiology unit

**Department offering the course:** Radiology department **Academic year:** Medical Doctorate – 6th semester

Date of specification approval:

A. Basic Information:

Title: Radiology (

Code: ORL7206c

Credit Hours: 0.5hrs Clinical: 2hrs/2w

Total: 15hrs

Coordinator .....

### **B. Professional Information:**

#### **Course Aims:**

- 1. To understand the scientific principles of radiological studies.
- 2. To provide an appropriate background covering the basic concepts of radiological studies.
- 3. To prepare student to select the appropriate radiological investigation.
- 4. To enable the audiologist to read and interpret the radiological studies related to his speciality.

# **Intended Learning Outcomes (ILOs) from the Course:**

# a. Knowledge and understanding:

# By the end of the course the candidate will be able to:

- **a.1** Determine the candidates and type of radiological studies
- **a.2** Identify the common radiological findings in different audio vestibular disorders.
- a.3 Identify & differentiate between different types of radiological studies
- **a.4** State the radiological findings and correlate with the clinical and audio vestibular findings.

#### b. Intellectual skills:

# By the end of the course the candidate will be able to:

- **b.1** Identify the indications and logistics of referring patients to radiological evaluation
- **b.2** Select the appropriate radiological investigation for each patient
- **b.3** Accurately interpret the results of the radiological studies.
- **b.4** Design an appropriate management plan based on correlation of radiology and audio vestibular findings.

#### c. Professional skills:

By the end of the course the candidate will be able to:

- c1. Acquire skills in identification, evaluation and interpretation of different types of radiological studies
- d. General and transferable skills:

By the end of the course the candidate will be able to:

**d.1** Work within the organisational, interpersonal and interprofessional dynamics of the clinical team.

#### Course content:

Topics	No of hours		
	C/P		
Radiology in audio vestibular disorders			
1. Different types of radiological studies			
2. Ct scan in audiovestibular disorders			
3. MRI in audiovestibular disorders			
4. MR spectroscopy			
5. Functional MRI			
6. Intervention radiology			

# C/P: Clinical or Practical Student Assessment Methods

Oral exam to assess knowledge & understanding

Weighing of assessments:

Oral examination: 20 marks
Total: 20 marks
End semester exam: 10 marks

**List of References** 

- Course Notes (paper and / or electronic):
- Lecture handouts.

## GENETICS COURSE SPECIFICATIONS (£7041)

University: Ain Shams Faculty of Medicine

Program on which the course is given: Medical Doctorate in Audiology

Major or minor element of programs: Minor

Department offering the program:

Otorhinolaryngology department, Audiology unit

**Department offering the course:** Genetics unit, department of pediatrics.

**Academic year:** Medical Doctorate – 1st semester

Date of specification approval:

#### C. Basic Information:

Title: Genetics Code: E7041

Credit Hours: 2hrs Lecture: 2hrs/w Total: 30hrs

Coordinator

### D. Professional Information:

#### **Course Aims:**

- 1. To know the principles and practice of Medical Genetics which will allow them to evaluate, choose and interpret appropriate genetic investigations for individuals, families and populations with genetic disease.
- **2.** To recognize role of genetics in hearing loss and balance disorders.
- **3.** To work with family information and diagnostic data in order to provide genetic risk assessment and best genetic advice to individuals and their families in an ethical way.

### **Intended Learning Outcomes (ILOs) from the Course:**

## e. Knowledge and understanding:

By the end of the course the candidate will be able to:

- **a1.** Recognize chromosomal disorders and methods used to characterize the underlying chromosomal abnormality.
- **a2.** Understand the molecular basis of inherited disease, diagnostic methods which are used to identify the causative mutations in patients or carriers.
- **a3.** Understand treatments and therapy for inherited disease, including novel therapies such as gene therapy.
- **a4.** Recognize the principles and practice of population screening programs for inborn errors of metabolism, prenatal identification of pregnancies at risk of chromosomal disorders.
- **a5.** Recognize the ethical issues which are an inherent part of Medical Genetics.

#### f. Intellectual skills:

# By the end of the course the candidate will be able to:

- **b.1** Identify children with suspected genetic condition and to direct them to the proper investigation.
- **b.2** Interpret family pedigree.

## g. Professional skills:

# By the end of the course the candidate will be able to:

c2. Apply their knowledge base in Medical Genetics in using clues from pedigree, family history and other information to suggest

- likely inheritance patterns and / or diagnoses.
- c3. Select of the diagnostic or screening methods which will be most appropriate and informative in a given clinical situation whilst taking into account referring them to a geneticist.

#### h. General and transferable skills:

## By the end of the course the candidate will be able to:

- **d.1** Acquire time management skills to accomplish individual designated tasks by a given date;
- d.2 Write scientific report and gain oral presentation skills.
- d.3 Use online databases and e-journals.

#### **Course content:**

Topics	No of hor	urs
_	L & SDL	C/P
Genetics	30 hrs	
Gene structure and gene function	2	
Chromosomes and chromosomal aberrations	2	
Mutations and teratogens	2	
Pedigree construction, Patterns of inheritance: traditional	2	
patterns & non-traditional patterns of inheritance.		
Molecular Diagnostic Techniques.	2	
Cytogenetic Diagnostic Techniques.	2	
Biochemical Diagnostic Techniques.	2	
Dietary therapy: restriction – supplementation	2	
Drug therapy	2	
Transplantation therapy: cell - tissue - organ	2	
Stem cell therapy	2	
Surgical intervention	2	
Gene therapy	2	
Genetics of diseases related to hearing & balance disorders	2	
Management of genetic abnormality and diagnostic	2	
approach		<u> </u>

# L: Lecture, C/P: Clinical or Practical and SDL: Self directed learning Student Assessment Methods

- 3. Short essays to assess knowledge
- 4. MCQs to assess knowledge and intellectual skills

## Weighing of assessments:

Written examination: 100 marks
Total: 100 marks
End semester exam: 30 marks

#### List of References

- 1. Course Notes (paper and / or electronic)
- 2. Essential Books (Textbooks)

### STATISTICS COURSE SPECIFICATIONS (£7024)

University: Ain Shams Faculty of Medicine

Program on which the course is given: Medical Doctorate in Audiology

Major or minor element of programs: Minor

**Department offering the program:** 

Otorhinolaryngology department, Audiology unit

**Department offering the course:** 

Department of Community, Environmental and

Occupational Medicine

**Academic year:** Medical Doctorate – 1st semester

Date of specification approval:

E. Basic Information:

Title: Medical statistics Code: E7024

Credit Hours: 2hrs Lecture: 2hrs/w Total: 30hrs
Coordinator

F. Professional Information:

#### **Course Aims:**

To enable the doctorate candidate to plan, conduct, analyze and interpret the results of a research in his specific field. This course unit introduces the application of statistical ideas and methodology to medical research.

# **Intended Learning Outcomes (ILOs) from the Course:**

a. Knowledge and understanding:

By the end of the course the candidate will be able to:

- **a.1.** Define medical statistics and identify uses and importance of medical statistics in medical research
  - a.2.Define:
  - Types of variables.
  - Descriptive statistics.
  - Presentation and summarization of data.
  - Measures of central tendency and scatter.
  - Principles of probability and probability distributions.
  - Concepts of inferential statistics: confidence interval and hypothesis testing.
  - Different tests of statistical significance.

- Difference between parametric and nonparametric tests of significance.
- Correlation and regression
- Concept of statistical modeling using multivariable and multivariate statistical methods.
- Combining evidence from different studies and meta-analysis
- Importance and methods of sampling and how to determinate the suitable sample size.
- Different types of research methodology: observational and intervention studies and the different statistical issues related to the design, conduct, analysis and interpretation of the results of each study type.
- Ethical aspects of medical research including those specifically applied to clinical trials.

#### b. Intellectual skills:

### By the end of the course the candidate will be able to:

- **b.1.** Interpret correctly the results of statistical analyses and critically evaluate the use of statistics in the medical literature.
- b.2. Integrate and evaluate information from a variety of sources.

#### c. Professional skills:

## By the end of the course the candidate will be able to:

- Select appropriate study designs to address questions of medical relevance
- **c2.** Select and apply appropriate statistical methods for analyzing data typically encountered in medical applications.
- c3. Use selected software packages for statistical analysis and data management.

### General and transferable skills:

# By the end of the course the candidate will be able to:

- **d.1** Work effectively in a group from different backgrounds.
- **d.2** Respect the role of staff and co-staff members regardless of degree or occupation.
- **d.3** Communicate effectively with professional statisticians and the wider medical community, including the ability to present results of statistical analyses through written and oral presentations
- d.4 Use of computer data bases and other computer skills.
- **d.5** Handle data appropriately and analyze them through: decision processes, objective criteria, problem definition, project design and evaluation, risk management, teamwork and coordination.
- **d.6** Learn independently with open-mindedness and critical enquiry.

#### **Course content:**

Topics	Т	C/P
Introduction to medical statistics and its uses	X	X
Types of variables and Descriptive statistics	X	X
Graphic presentation of data	X	X
Introduction to probability theory and rules	X	X
Sample and population: sampling distribution of mean and	X	X
proportion		
Confidence interval of a mean and a proportion	X	X
Confidence interval of a difference between two mean /proportion	X	X
Testing a hypothesis about population mean/proportion	X	X
Testing a hypothesis about the difference between two	X	X
means/proportion		
Comparing between more than two means-Introduction to	X	X
factorial analysis		
Cross-tabulation and introduction to categorical data analysis	X	X
Simple correlation and simple regression	X	X
Introduction to multivariable and multivariate analysis	X	X
Study designs: observational studies	X	X
Study designs: Intervention studies: clinical trials	X	X
Study designs: Experimental animal studies	X	X
Study designs: Bias and Confounding	X	X
Ethical issues in medical research	X	X
Sample size estimation for continuous and binary outcome	X	X
measures.		
Meta-analysis and publication bias.	X	X

# T: Tutorial and C/P: Clinical or Practical and SDL: Self directed learning Student Assessment Methods

Written exam to assess knowledge and understanding and will concentrate on problem solving questions

# Weighing of assessments:

Written examination: 100 marks Total: 100 marks

End semester exam 30 marks

### List of References

1. Course Notes (paper and / or electronic): Student Notes on Medical Statistics and Research Methods. Prof. Mohsen Abdel Hamid and Dr Moustafa El Houssinie. Department of Community, Environmental and Occupational Medicine.

- **2. Essential Books (Text Books):** Statistics in Clinical Practice. David Coggon. BMJ Books. 2<sup>nd</sup> edition 2003
- 3. Recommended Books: Handbook of Epidemiology. Springer 2005
- 4. Periodicals, Web Sites, etc
  - www.brettscaife.net/statistics/introstat/
  - onlinestatbook.com/rvls/
  - www. Epidemiolog.net
  - http://www.shef.ac.uk/scharr/spss/

# OCCUPATIONAL HEARING-RELATED DISORDERS COURSE SPECIFICATIONS (£7088)

University: Ain Shams Faculty of Medicine

Program on which the course is given: Medical Doctorate in Audiology

Major or minor element of programs: Minor

**Department offering the program:** 

Otorhinolaryngology department, Audiology unit

**Department offering the course:** 

Otorhinolaryngology department, Audiology unit Department of Community, Environmental and Occupational Medicine

**Academic year:** Medical Doctorate – 1st semester

Date of specification approval:

A. Basic Information:

Title: Occupational Hearing-Related Disorders
Credit Hours: 2hrs Lecture: 2hrs/w
Coordinator
Coordinator
Coordinator

#### **B. Professional Information:**

### **Course Aims:**

- 1. To identify different forms of occupational hearing-related disorders
- 2. To be able to measure noise levels and define hazardous levels
- 3. To recognize the importance of hearing conservation programs
- 4. To help in implementation of hearing conservation programs
- 5. To be able to conduct a survey study to identify risk factors of hearing loss among population
- 6. To be able to differentiate between occupational hearing loss and organic hearing loss

# **Intended Learning Outcomes (ILOs) from the Course:**

### a. Knowledge and understanding:

### By the end of the course the candidate will be able to:

- **a.1** Understand the risk factors for occupational hearing loss
- **a.2** Understand the patho-physiological mechanisms of occupational hearing loss.
- **a.3** Recognize methods of noise and hearing measurements.
- a.4 Recognize different types of ear protectors
- **a.5** Know the medico-legal aspects related to occupational hearing loss

#### b. Intellectual skills:

## By the end of the course the candidate will be able to:

- **b.1** Identify different sources of occupational hearing-related hazards in a work place
- **b.2** Interpret audiometric and noise measurements data
- **b.3** Integrate audiometric and noise measurement data to design a hearing conservation program
- **b.4** Plan hearing conservation campaigns through different media.

### c. Professional skills:

### By the end of the course the candidate will be able to:

- c.1 Identify work places at risk for occupational hearing loss
- c.2 Perform noise measurements
- c.3 Conduct hearing measurement tests
- c.4 Implement the appropriate occupational hearing conservation programs
- c.5 Manage hearing loss secondary to occupational hazards

### d. General and transferable skills:

# By the end of the course the candidate will be able to:

- d.1 Acquire time management skills to accomplish occupational hearing conservation programs
- **d.2** Gather and organize material from various sources (including library, electronic and online resources).

#### Course content:

Topics	No of hours			
	L & SDL C F			
Occupational Hearing -related Disorders	15hrs	15hrs	30hrs	
Hearing and occupational Hazards	1			
International & Local guidelines :Hearing &Noise	4			
International & Local guidelines: Hearing & Heavy	2			
Metals				
International & Local guidelines: Risk of Falls	2			
Audiometric Measures	2			
Hearing Conservation Programs	2			

Medico-legal regulations	2	

# L: Lecture, T: Tutorial, C/P: Clinical or Practical and SDL: Self directed learning

### **Student Assessment Methods**

- 1. Short essays to assess knowledge
- 2. MCQs to assess knowledge and intellectual skills

## Weighing of assessments:

Written examination: 100 marks
Total: 100 marks
End semester exam: 30 marks

#### **List of References**

- 1. Course Notes (paper and / or electronic)
- 2. Essential Books (Textbooks):
- Noise induced Hearing Loss: Basic Mechanisms, Prevention and Control, Henderson D. Prasher D.,Kopke R. and Hamerink RP. London: NRN 2003.
- Handbook of Clinical Audiology, Jack Katz, Williams & Wilkins, 2002.
  - -Noise levels of common army equipment. {on line} :http://chppm-www.apgea.army.mil/hcp/<u>Book:</u>

## V- General Information

# **Monitoring Of Training and Submission Of Training Reports**

You must keep proper and updated records in your logbook to reflect the activities encountered in your training. Your logbook must be duly endorsed by an authorized signatory at the end of each semester.

You will be continuously assessed by your supervisors, in consultation with head of department. An assessment will be submitted within 2 weeks of completion of each semester.

## 2 - Miscellaneous Information:

# Injury and/or Blood or Body Fluid Exposure:

During regular working hours, you should immediately report an exposure incident to infection control unit. If exposure occurs after regular working hours or during a weekend or holiday; please report to the Emergency Department.

# <u>Please also be sure to inform the supervisors of an exposure incident and/or injury.</u>

# 3 - Action Completion Of Clinical Training

Once all training sessions are completed the log book should be signed by the senior supervisor and the head of the department and then should be submitted to post graduate Secretariat.

### 4- Reference

The Training Guide is available at the post graduate Secretariat and could be downloaded from the following website is

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Topics	No of	hours
	L &	C
	SDL	

## Your log book

## 1- Introduction

The aim of this book is to give you a guide to the expectations for each item. It will be a guide for both you and your teachers to what you should be seeing and doing.

It will give you a list of the important topics that you should think about and should be covered in:

- 1. Clinical or practical sessions
- 2. Tutorials
- 3. Self-directed learning (SDL)

### For each item there is also a list of

- 1. Clinical conditions or Practical sessions to be seen or attended
- 2. Practical procedures to be seen and done

#### Remember

This document is *only a guide*. It is not an exhaustive list. It is not just a checklist to score points. It is a guide to encourage you to read and learn more. *This book is for your benefit*. It will form a record of your clinical training and experience.

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## 3-Tables for Training Records

The candidate will record the details and date of each activity, and the authorized staff member signature.

Candidates are required to fulfill 75% of the listed activities in order to be eligible for the exam entry. The minimum number required for each activity = 75%. You are free to attend more and record your extra attendance.

# Weekly Unit Plan

linic	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday
Basic	9:00-	9:00-	11:00-	9:00 -	9:00-	9:00-
	14:00	14:00	14:00	14:00	14:00	14:00
Evoked	11:00-	11:00-		11:00 -	11:00 -	11:00 -
Potentials	13:00	13:00		13:00	13:00	13:00
Central			9:00-		9:00-	
			14:00		14:00	
Vestibular		9:00-		9:00-		9:00-
		14:00		14:00		14:00
Hearing				9:00-		9:00-
Aids				14:00		14:00
Tinnitus	9:00-					
	14:00					
Cochlear					9:00-	
<b>Implants</b>					14:00	
					(ASUH)	
Conference			9:00-			
& Journal			11:00			
club			(ASUH)			

- Monthly activity:

Two days search in Audiology unit library (books – audiovisual)

- Yearly activity

Advanced vestibular workshop

# Weekly Conference Attendance (NB. Minimum number required is 35)

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# Journal club attendance (NB. Minimum number required is 15)

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Case presentation with review article (NB. Minimum number required is 10)

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# Thesis attendance (NB. Minimum number required is attending 10)

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# Patients' Case Log

Adult Cases seen with the following diagnoses

				8	
Conductive Hearing Lo	OSS	□Ototoxicity	5	Balance Disorders	
☐ Adhesive OM	10	□Post febrile	3	□Unilateral uncompens	sated
□ CSOM	20			vestibular weakness	15
☐ OME / ET dysfunction	n 10	Retrocochear Hearing	Loss	□Unilateral compensat	ed
☐Otitis Externa	5		10	vestibular weakness	15
☐Traumatic	5			□Bilateral vestibular	
□Otosclerosis	15	Miscellaneous		weakness	10
☐Glomus tumor	2	☐ Auditory Neuropathy	10	□Central vestibular	
		☐Facial nerve palsy	5	dysfunction	3
Sensorineural Hearing		□M.S	3	□ Combined	3
Loss		□Dysphasia	2	☐Multi-factorial	3 5
□Heredofamilial	10	$\Box$ CAPD	3	□Non vestibular	10
□Presbyacusis	10	☐Brain Tumours	3		
□Noise-induced	5				
☐Meniere's Disease	5				
□Auto-immune	5				
□Sudden SNHL	5				
□Preilymphatic Fistula	1				
☐Cochlear Otoscelerosis	s 3				
□Traumatic	5				

# Patients seen with any of the above listed diagnoses

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Pediatric Cases seen with the following diagnoses

Pediatric Cases seen w	ith the	e following diagnoses	
<b>Conductive Hearing Loss:</b>		Miscellaneous:	
☐ Chronic suppurative OM	5	☐ Auditory Neuropat	hy
☐ OME / ET dysfunction	15		20
□Traumatic	5	$\Box CAPD$	10
□Microtia	3	$\Box DLD$	25
□Syndromes	5	$\square$ ADHD	5
□Congenital Cholesteatoma	2	☐ Mental Retardation	ı
☐ Congenital Ossicular Fixat	ion1	with possible HL	10
		☐BDMH with possib	ole
Sensorineural Hearing Los	S	HL	15
☐ Heredofamilial "congenita"	l" 25	□Dizziness	5
☐ Heredofamilial "late onset"	' 25	☐ Facial nerve palsy	2
□Postfebrile	10		
☐ Syndromes	10		
□Traumatic	3		
□Ototoxicity	5		

# Patients seen with any of the above listed diagnoses

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# **Auditory & Vestibular Rehabilitation**

Adults Children
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Rehabilitation of	Vestibular	Rehabilitation of	Rehabilitation of
Hearing Impaired	Rehabilitation	Hearing Impaired	CAPD
Hearing Aids	□Peripheral	Hearing Aids	□Informal 10
☐ Selection 50	dizziness 30	☐ Selection 30	□Formal 20
□Fitting 30	Central dizziness	☐Fitting 30	
□Verification 30	5	□ Verification 30	
Cochlear Implants	Combined 5	Cochlear Implants	
☐ Selection 10	Multifactorial	☐ Selection 20	
$\Box$ Fitting 3	dizziness 10	□Fitting 5	
□Verification 5	dizziness 10	☐ Verification 20	
Rehabilitation of			
CAPD			
□Informal 5			
□Formal 5			

## Procedures' Log

Level of trainees participation in different procedures

- 1. Observation of the procedure O
- 2. Assistance in the procedure A
- 3. Performance of the Procedure (supervised) Ps
- 4. Performance of the procedure (independent) P

# Evoked Potentials (Minimal number required 70)

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# Otoacoustic Emissions (Minimal number required 20)

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# Tinnitus Management Procedures (Minimal number required 15)

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# Hearing Aid Fitting (Minimal number required 60)

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# Hearing Aid Verification (Minimal number required 60)

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# Cochlear Implant Mapping (Minimal number required 8)

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## **Neural Response Telemetry** (Minimal number required 5)

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# Speech Perception Tests (Minimal number required 20)

No	Date	Age of patient	Tests	Supervisor signature
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### VNG / ENG (Minimal number required 40)

No	Date	Age of patient	Indications	Findings	Supervisor signature
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### Dynamic Posturography (Minimal number required 10)

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## Rotational Chair (Minimal number required 5)

No	Date	Age of patient	Indication	Supervisor signature
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## Psychophysical tests (Minimal number required 40)

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# Computer-based Programs for Remediation of CAPD (Minimal number required 30)

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## Basic Clinic Attendance (NB. Minimum number required is 100)

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9		
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1		
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3		
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10		

### **Specialized Clinics Attendance**

(Observation of the test: O; Performance of the test: P)

1. Evoked Potentials Clinic

(NB. Minimum number required is 40)

No	Date	Age of patient	Diagnosis	Supervisor signature
1				
2				
3				
4				
5				
6				
7				

8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
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30		
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34		
35		
36		
37		
38		
39		
40		

# Vestibular Clinica) Diagnosis(NB. Minimum number required is 30)

No	Date	Test	Diagnosis	Supervisor
			0	

		signature
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
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21		
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28		
29		
30		
31		
32		
33		
34		
35		
36		
37		
38		
39		

40		
40		

## b) Rehabilitation (NB. Minimum number required is 20)

No	Date	Technique	Diagnosis	Supervisor signature
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

#### 3. Central Clinic a) Diagnosis (NB. Minimum number required is 10)

No	Date	Age of patient	Diagnosis	Supervisor signature
1				
2				
3				
4				
5				

6		
7		
8		
9		
10		

## b) Remediation (NB. Minimum number required is 10)

No	Date	Ability	Supervisor signature
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

## 4. Hearing Aids Clinic (NB. Minimum number required is 50)

No	Date	Age of patient	Supervisor signature
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			

14		
15		
16		
17		
18		
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34 35		
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37		
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39		
40		
41		
42		
43		
44		
45		
46		
47		
48		
49		
50		

5. Tinnitus (NB. Minimum number required is 10)

No	Date	Diagnosis	Supervisor signature
1			
2			
3			
4			
5			
6			
7			
8	_		
9			
10	_		

## 6. Cochlear implants7. (NB. Minimum number required is 10)

No	Date	Age of patient	Supervisor signature
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

### 5 - Log book preview

The candidate logbook will be reviewed and patients seen/ skills performed summarized by diagnosis groups during the semester evaluation and at the end of the course in the table below. The results of this review will be totaled in the summary chart below.

Summary

	1	11	- I	TI a	W 41	T a	1
Semester	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>	Total
Activity	No	No	No	No	No	No	
Department conferences							
attendance (35)							
Journal club attendance (15)							
Case presentation with review							
article (8)							
Thesis attendance (10)							
Basic clinic attendance (100)							
Evoked Potentials clinic							
attendance (40)						1	
Vestibular clinic attendance							
(30)						1	
Central clinic attendance (10)							
Hearing aids clinic attendance							
(50)							
Cochlear implant clinic							
attendance (10)							
Tinnitus clinic attendance (10)							
ABR observed (10)							
ABR assisted (5)							
ABR done independently (5)							
MLR & SSEP observed (5)							
MLR & SSEP assisted (3)							
MLR & SSEP done							
independently (2)							
P300 observed (5)							
P300 assisted (3)							
P300 done independently (2)							
MMN observed (5)							
MMN assisted (5)							
MMN done independently (3)						1	
ECoG observed (3)						1	
ECoG assisted (1)							
ECoG done independently (1)							
VEMP observed (5)							
VEMP assisted (3)				1	1	1	
VEMP done independently (2)							
<u>F</u>				1			1

Facial Neurography observed		
(2)		
Tinnitus matching observed		
(3)		
Tinnitus matching assisted (2)		
Tinnitus matching done		
independently (5)		
Tinnitus masking observed (2)		
Tinnitus retraining therapy		
observed (3)		
Tinnitus cognitive therapy		
observed (1)		
Hearing aid fitting observed		
(20) Hearing aid fitting assisted		
(20)		
Hearing aid fitting done		
independently (20)		
Hearing aid verification		
observed (20)		
Hearing aid verification		
assisted (20)		
Hearing aid verification done		
independently (20)		
Cochlear Implant Mapping		
observed (8)		
NRT observed (5)		
Speech perception tests		
observed (15)		
Speech perception tests assisted (5)		
VNG/ENG observed (20)		
VNG/ENG assisted (10)		
VNG/ENG done		
independently (10)		
CDP observed (6)		
CDP assisted (4)		
Rotational chair observed (3)		

Rotational chair assisted (2)				
Gaze Stabilization observed (20)				
Gait and Posture stabilization				
observed (15)				
Repositioning maneuver				
observed (5)				
Repositioning maneuver				
assisted (5)				
High tech rehab exercise				
observed (5)				
Temporal processing tests				
observed (8)				
Temporal processing tests				
assisted (2)				
Binaural integration tests				
observed (8)				
Binaural integration tests				
assisted (2)				
Monaural low redundancy				
tests observed (5)				
Monaural low redundancy				
tests assisted (3) Auditory memory tests				
observed (5)				
Auditory memory tests (5)	+	+		
assisted (2)				
Phonological awareness tests				
observed (4)				
Phonological awareness tests				
assisted (1)				
Temporal processing				
remediation observed (5)				
Binaural integration				
remediation observed				
(5)				
Auditory selective attention				
remediation observed				
(5)				

Interhemispheric transfer				
remediation observed				
(5)				
Auditory memory remediation				
observed				
(5)				
Auditory phonological				
awareness remediation				
observed (5)				

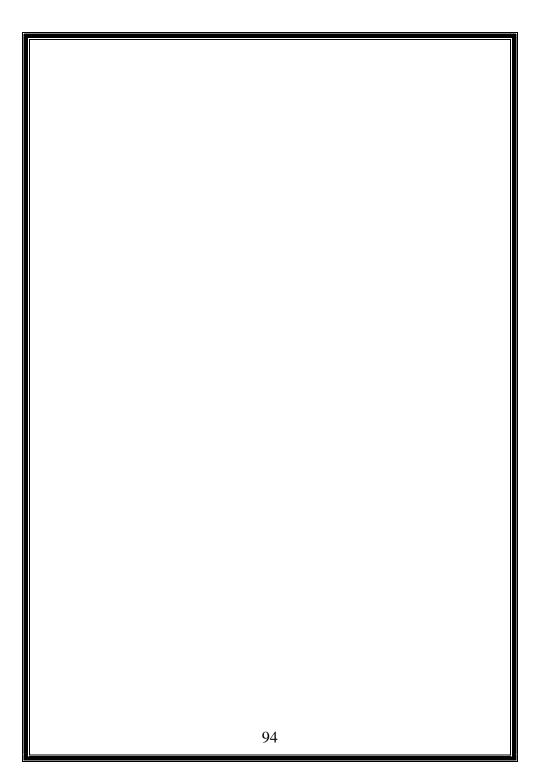
## Summary

### Patients' Log

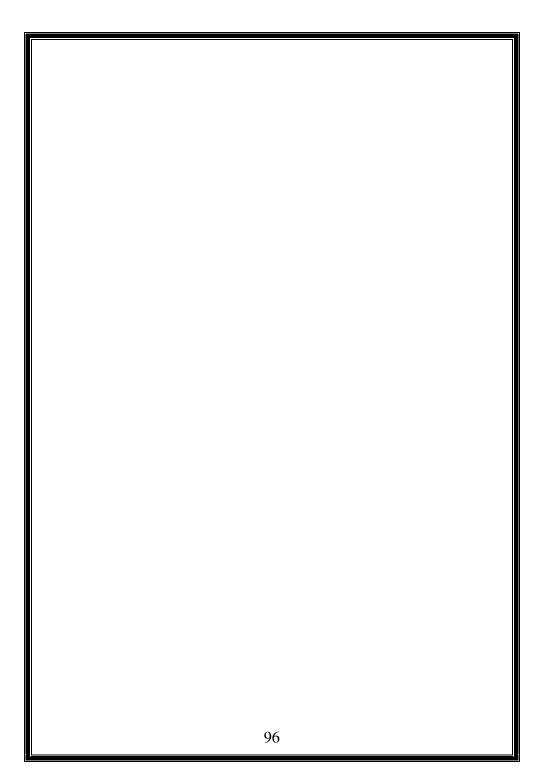
Semester	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>	Total
Activity (Minimum number required)	No	No	No	No	No	No	
Adult cases seen with the following	diagr	oses		•		•	•
Adhesive OM 10							
CSOM 20							
OME / ET dysfunction 10							
Otitis Externa 5							
Traumatic 5							
Otosclerosis 15							
Glomus tumor 2							
Heredofamilial 10							
Presbyacusis 10							
Noise-induced 5							
Meniere's Disease 5							
Auto-immune 5							
Sudden SNHL 5							
Cochlear Otoscelerosis 3							
Traumatic Preilymphatic Fistula 15							
Unilateral uncompensated vestibular weakness 15							

Unilateral compensated vestibular			
weakness 15			
Bilateral vestibular weakness			
Central vestibular dysfunction			
3			
Combined 3			
Multi-factorial 5			
Non vestibular 10			
Ototoxicity 5			
Post febrile 3			
Retrocochear Hearing Loss			
Auditory Neuropathy 10			
Facial nerve palsy 5			
M.S 3			
Dysphasia 2			
CAPD 3			
Brain Tumours 3			
Pediatric cases seen with the followi	ng diagno	ses	
Chronic suppurative OM 5			
OME / ET dysfunction 15			
Traumatic 5			
Microtia 3			
Syndromes 5			
Congenital Cholesteatoma 2			
Congenital Ossicular Fixation 1			
Heredofamilial "congenital" 25			
Heredofamilial "late onset" 25			
Postfebrile 10			
Syndromes 10			
Traumatic 3			
Ototoxicity 5			
Auditory Neuropathy 20			
CAPD 10			
DLD 25			
Mental Retardation with possible			
HL 10			

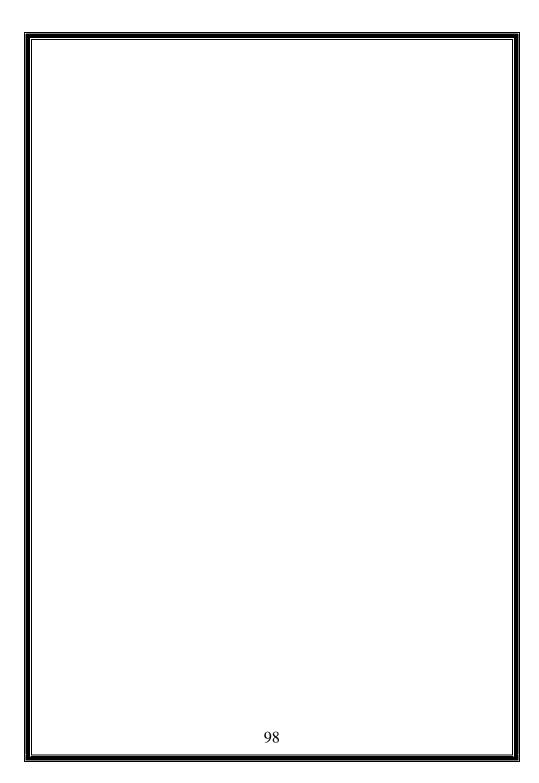
BDMH with possible HL							
	15						
Dizziness	5						
Facial nerve palsy	2						
Supervisor signature							
•			1				
VII - Head Of Departme	ent Annro	val Fo	r The l	Fvam	Entr	<b>5</b> 7	
VII - Head Of Departing	си Аррго	vairu	1 THE	LXaIII	EIIII	<u>y</u>	



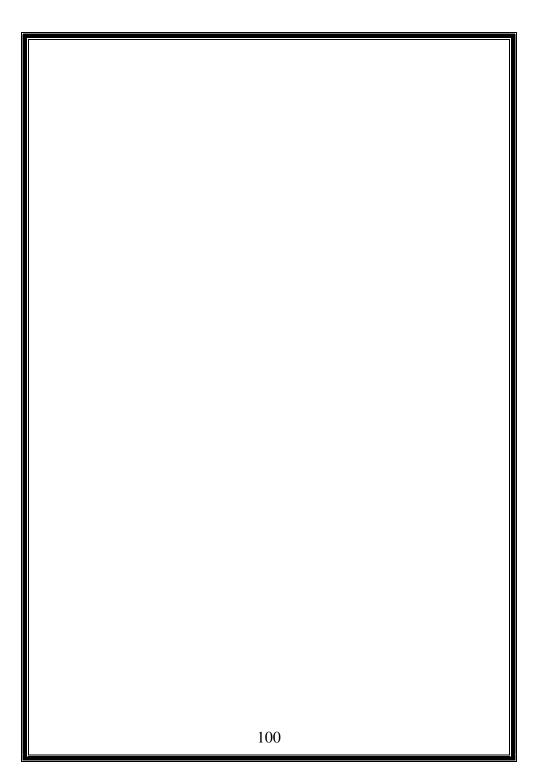
VIII – Thesis Follow up						
التاريخ/			التقرير النصف السنوى لعام / عن الطالب / المقيد لدرجة (دكتوراه) بقسم / تقرير السادة الاساتذة المشرفين			
قطع شوطا محدودا		بدأ	جمع المادة العلمية و كتابة المقدمة			
إنتهى من الجمع		أوشك على الإنتهاء				
قطع شوطا محدودا ا		بدأ أوشك على الإنتهاء	الجزء العملى			
قطع شوطا محدودا [		بدأ أوشك على الإنتهاء	مناقشة النتائج			
قطع شوطا محدودا ا		بدأ أوشك على الإنتهاء	المراجعة النهائية مع المشرف			
مد القيد		إستمرار قيد الطالب شطب قيد الطالب	رأى السادة المشرفين			
تاریخ التشکیل / /		نعم لا	تم تشكيل لجنة المناقشة			
" bak b a		مد / شطب القيد توقيع السادة المشرفين				
وكيل الكلية		95	<u>توقیح اساده المسرحیر</u>			



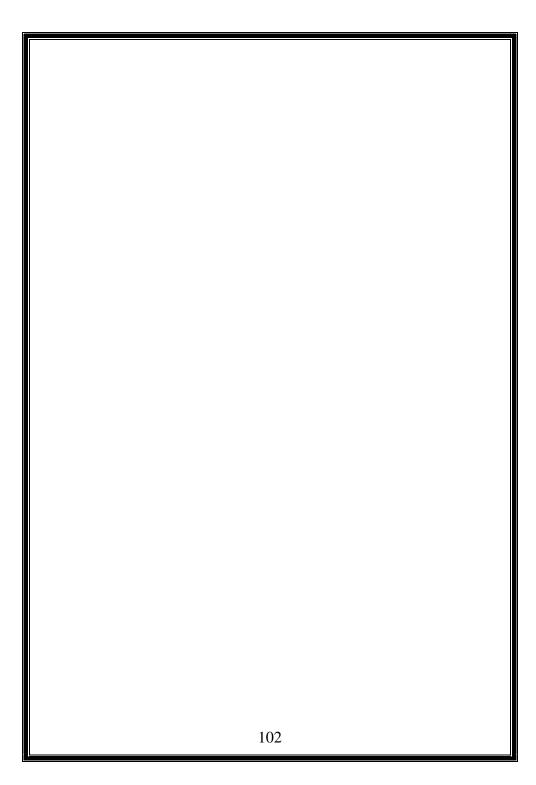
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قطع شوطا محدودا	بدأ	جمع المادة العلمية و كتابة المقدمة
إنتهى من الجمع	أوشك على الإنتهاء	
قطع شوطا محدودا التحليل التحليل التحليل	بدأ أوشك على الإنتهاء	الجزء العملى
قطع شوطا محدودا التحرير التحرير	بدأ أوشك على الإنتهاء	مناقثىة النتائج
قطع شوطا محدودا الله المحدودا المحدودا المحدودا المحدودا	بدأ أوشك على الإنتهاء	المراجعة النهائية مع المشرف
مد القيد	إستمرار قيد الطالب شطب قيد الطالب	رأى السادة المشرفين
تاریخ التشکیل / /	نعم لا	تم تشكيل لجنة المناقشة مد / شطب القيد
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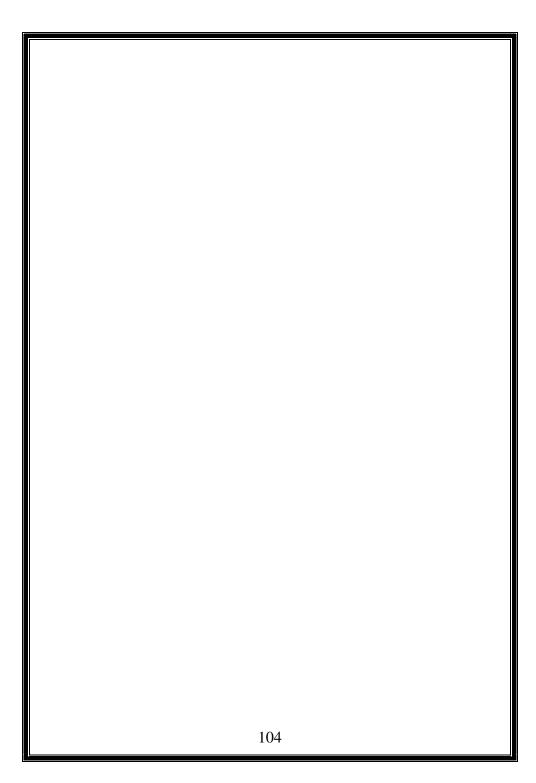
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إنتهى من الجمع	أوشك على الإنتهاء	
قطع شوطا محدودا التحليل التحليل التحليل	بدأ أوشك على الإنتهاء	الجزء العملى
قطع شوطا محدودا التحرير التحرير	بدأ أوشك على الإنتهاء	مناقثىة النتائج
قطع شوطا محدودا الله المحدودا المحدودا المحدودا المحدودا	بدأ أوشك على الإنتهاء	المراجعة النهائية مع المشرف
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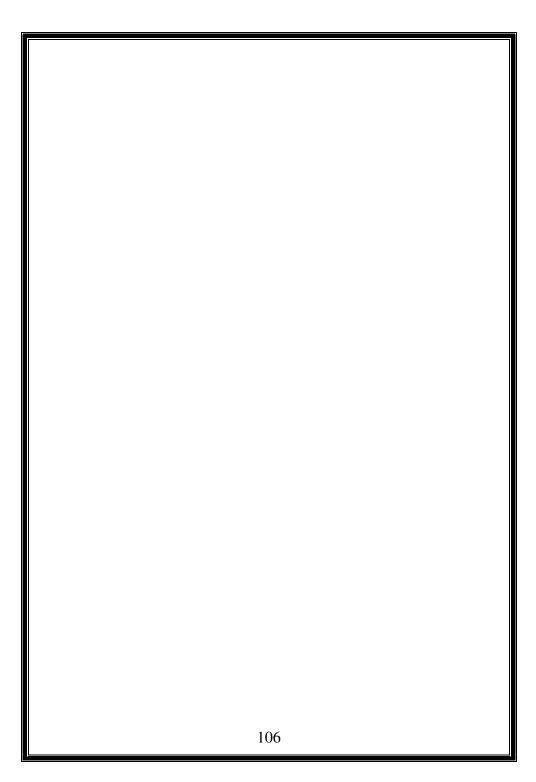
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قطع شوطا محدودا	بدأ	جمع المادة العلمية و كتابة المقدمة
إنتهى من الجمع	أوشك على الإنتهاء	
قطع شوطا محدودا التحليل التحليل	بدأ أوشك عل <i>ى</i> الإنتهاء	الجزء العملى
قطع شوطا محدودا [	بدأ أوشك على الإنتهاء	مناقشة النتائج
قطع شوطا محدودا ا	بدأ أوشك على الإنتهاء	المراجعة النهائية مع المشرف
مد القيد	إستمرار قيد الطالب شطب قيد الطالب	رأى السادة المشرفين
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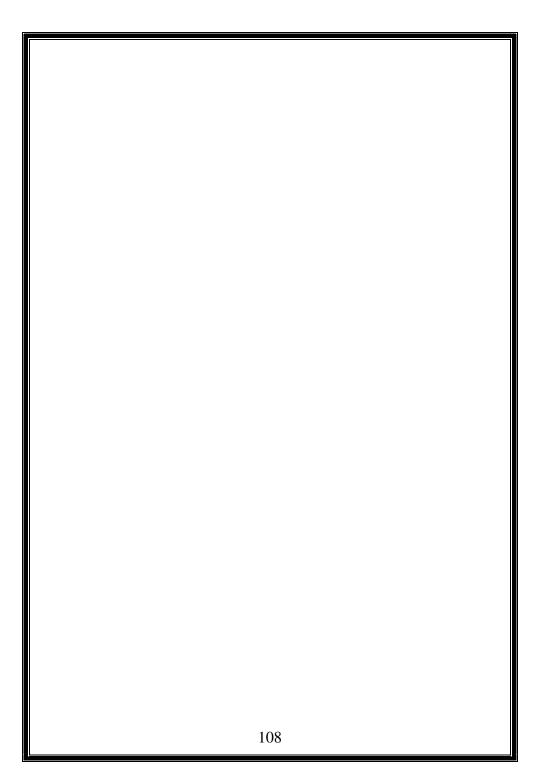
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قطع شوطا محدودا		بدأ	جمع المادة العلمية و كتابة المقدمة
إنتهى من الجمع	1 1	أوشك ع الإنتهاء	
قطع شوطا محدودا التحليل التحل	1 1	بدأ أوشك ع الإنتها:	الجزء العملى
قطع شوطا محدودا [	⊔ لی ∏	بدأ أوشك ع الإنتها:	مناقشة النتائج
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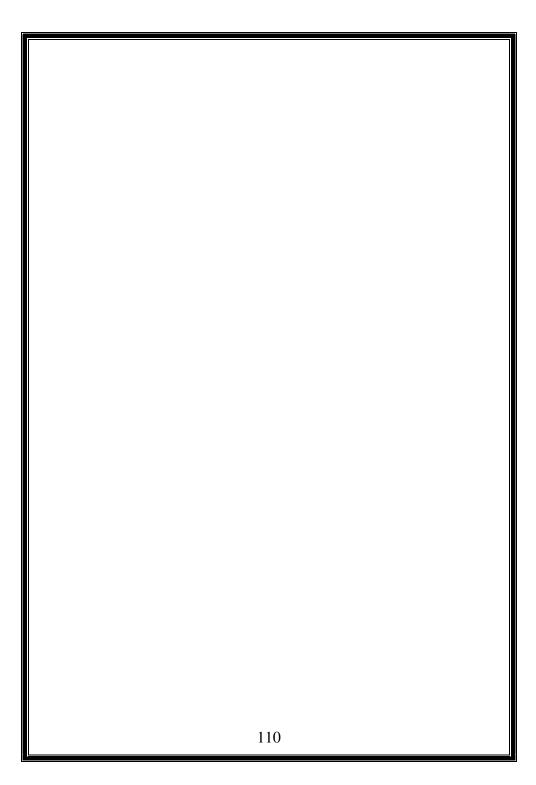
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إنتهى من الجمع	أوشك على الإنتهاء	<b></b> /
قطع شوطا محدودا [	بدأ أوشك على الإنتهاء	الجزء العملى
قطع شوطا محدودا الله التحرير المتحرير التحرير	بدأ أوشك على الإنتهاء	مناقشة النتائج
قطع شوطا محدودا ا	بدأ أوشك على الإنتهاء	المراجعة النهائية مع المشرف
مد القيد <u> </u>	إستمرار قيد الطالب شطب قيد الطالب	رأى السادة المشرفين
تاریخ التشکیل / /	نعم لا	تم تشكيل لجنة المناقشة مد / شطب القيد
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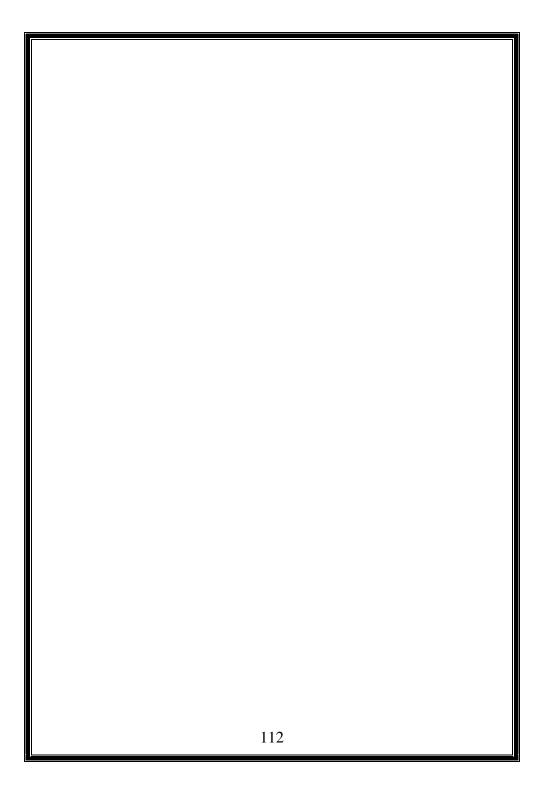
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Candidate Supervisor Location									
Aim of train	ing								
Agreed edu achieved.	cational	objectives	and	timescale	in	which	objectives	should	be
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Comments b	y Candid	iate 							
Comments b	y Superv	risor							



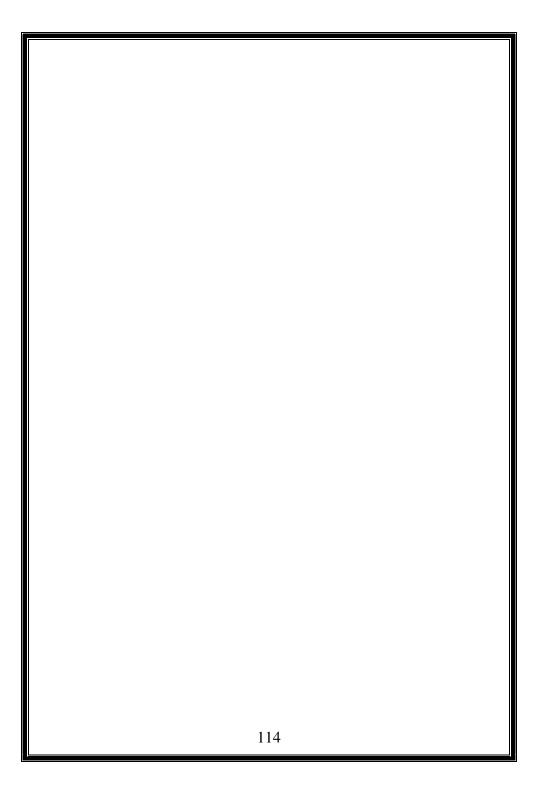
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Comments		iate 							
Comments	by Superv	visor							



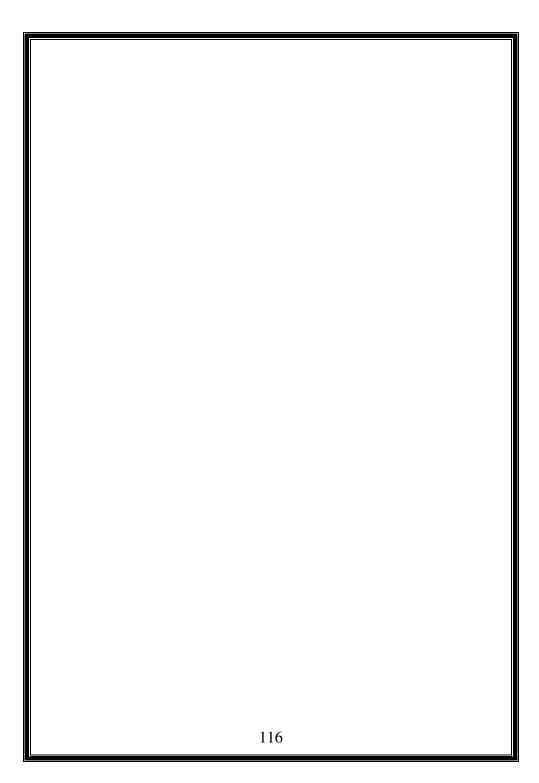
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Comments	s by Superv	visor							



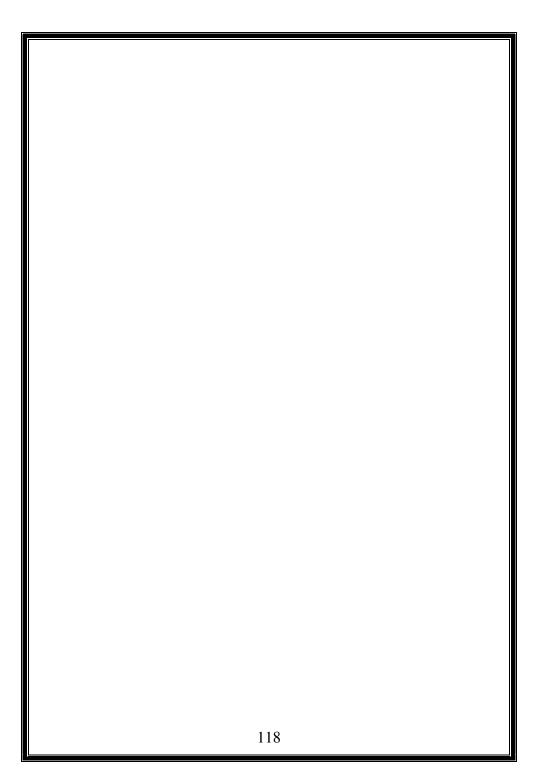
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Candida Supervis Location	or								
Aim of tr	aining								
Agreed achieved	educational	objectives	and	timescale	in	which	objectives	should	— be
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Candidate								
Supervisor Location								
Aim of training								
Agreed educational achieved.	objectives	and	timescale	in	which	objectives	should	_ be
Comments by Candid	late							_
Comments by Superv	visor							_



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## Degree Program Evaluation Form by The Candidate To be completed at the end of your degree.

I. Individual Information

Please consider each pair of statements and decide which most clearly reflects your view and **tick one box or answer the question**.

1. Are you a graduate of ASU?
yes no to some degree
2. Year and semester when studies began:
II. General Questions
1. What are the advantages/disadvantages of the general study environment at the University ASU?
2. What were your expectations when you applied to the degree?
3. Do you feel that the degree program prepares you well for your future studies or employment according to the demands and expectations of those institutions?  Output  Description:
4. Has the time limit of the program (two or three academic years) caused you any difficulties or inconveniences?
yes no to some degree
III. Structure of Degree Program  1. Did you receive enough guidance in planning your study schedule in the beginning of the program?  O yes o no to some degree
2. What were the main difficulties in the planning of your study schedule?
3. What is your general opinion on the structure of the degree program?

4. In your opinion, does the degree program offer a good balance of lectures, seminars, conferences, and book exams?  O yes O no C to some degree
a) General Studies
i) Do you feel that you have received enough guidance on academic writing?  yes no to some degree
ii) Do you feel that you have acquired sufficient knowledge on research skills (eg. quantitative and qualitative research methods)?  O yes no to some degree
b) Courses i) Have you had some special difficulties in completing some of the courses? Please specify.
ii) Has there been a sufficient variety of courses offered for your optional studies?  yes no to some degree
iii) Have you received enough guidance for the preparation of your thesis?  yes no to some degree
IV. Concluing Points  1. Did the degree program meet your expectations?  Output  Outpu
3. What aspects of the degree program do you particularly dislike?
4. What are your suggestions on how to improve the program? Thank you!