Faculty of Medicine
Ain Shams University

Postgraduate Studies

Doctorate in Medical Microbiology and Immunology

Program Code: (MI 700)

Program Guide and Logbook
Candide 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 that will be useful in your job]

Filled by post graduate authorities

Date of Registration

First semester

Second semester

Third semester

Fourth semester

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      • Applied Medical Virology
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I – WELCOME STATEMENT:
The Department of Medical Microbiology and Immunology welcomes you to the Doctorate Degree in Medical Microbiology and Immunology. 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 the Doctorate Degree in Medical Microbiology and Immunology administered by the Medical Microbiology and Immunology Department, Faculty of Medicine, Ain Shams University.

II - MISSION STATEMENT:
The mission of the Faculty of Medicine, Ain Shams University is to prepare a competent graduate with managerial and technical skills in the field of Medical Microbiology and Immunology, capable of managing medical microbiology laboratory, and leading infection prevention and control at hospital and community basis.

III – SENIOR SUPERVISOR AND AFFILIATED DEPARTMENTS AND HOSPITALS

SENIOR SUPERVISORS

AFFILIATED DEPARTMENTS AND HOSPITALS

- Accredited training centers:
  - Central Labs of Ministry of Health
  - Microbiological Lab of Abbasia Fever Hospital
  - Microbiological Lab of Abbasia Chest Hospital
  - General Organization of Teaching Hospitals and Institutes (GOTHI)
Naser Institute Hospital

IV – PROGRAM SPECIFICATIONS

A- Basic Information

1. Programme title: Doctorate in Medical Microbiology and Immunology
2. Programme type: Single □ Double □ Multiple □
3. Faculty
   Ain Shams University – Faculty of Medicine
4. Department
   Department of Medical Microbiology and Immunology
5. Assistant co-ordinator
   ---------------------------------
6. Co-ordinator
   ---------------------------------
7. Last date of programme approval: July 2009

B- Professional Information

1. Programme aims:
   This objective based curriculum details the skills and knowledge a trainee should acquire to provide a high quality medical microbiology or virology or immunology service at consultant level.

   On completion of the programme the trainee will have acquired:-
   - A broad understanding of the management of infectious disease from a clinical and laboratory perspective.
   - The diagnostic techniques required in the practice of medical microbiology, virology and immunology
   - Understanding of the areas of applied medical microbiology, virology and immunology detailed in the curriculum.
   - Knowledge of specialist areas such as advanced medical microbiology and infection control, or advanced medical immunology, or advanced medical virology depending on the background and career aspirations of the trainee.
   - The communication skills required for the practice of medical microbiology, virology and immunology.
   - The acquisition of management skills required in the running of the microbiology, virology and immunology laboratory.
   - Understanding of research, audit and team working, which underpin medical microbiology, virology and immunology practice.
• Life-long habits of reading, literature searches, consultation with colleagues, attendance at scientific meetings, and the presentation of scientific work that are essential for continuing professional development
• Demonstrate the knowledge, skills and attitudes to provide appropriate teaching and to participate in effective research.

2. Intended learning outcomes (ILOs):

a. Knowledge and understanding:

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

a1. Diagnose and manage medically important clinical syndromes caused by bacteria, fungi and viruses.

a2 – Identify bacterial, viral and fungal infections of public health concern.

a3- Recognize the basis of management and quality assurance of medical microbiology, immunology and virology laboratory.

a4- Describe, the indication, optimal methods for collection, transport, storage, reception, identification and documentation of different clinical specimens.

a5- Describe different tests used in the laboratory diagnosis of microbial and viral infections and diseases together with an understanding of safe working practices and procedures.

a6- Acquire a core body of knowledge in molecular immunology that underpin clinical and laboratory practice.

a7- Explain details of diagnosis, natural history, outcome of immunologically mediated diseases and the required therapeutic measures.

a8. Understand the pathophysiology including molecular basis of immunodeficiency, autoimmune, and hypersensitivity diseases.

a9- Understand the evidence base behind current recommendations on management of device related infections and current measures for infection prevention and control in specific hospital units.

a10- Understand the principles and practice of surveillance and outbreak investigations for healthcare associated infections.

b. Intellectual skills:
By the end of the programme the candidate will be able to:

b1 - Formulate a systematic approach for laboratory diagnosis of medically important infectious syndromes
b2 – Provide clinicians with advice regarding diagnosis and treatment of infectious syndromes
b3- Assimilate clinical, epidemiological and laboratory information and to use this to differentiate between the different infectious syndromes
b4- Select, interpret and provide advice based on laboratory investigations relevant to the diagnosis, assessment and monitoring of patients with immunologically mediated diseases
b5- Recommend appropriate measures for preventing healthcare device related infections
b6- Initiate investigation and control measures for outbreaks
b7- Plan and evaluate research in the field of medical microbiology, virology and immunology.

c. Professional and practical skills:
By the end of the programme the candidate will be able to:
c1. Establish a rapport with both medical microbiology and virology laboratory and clinical staff with ability to explain the range of tests available, and the circumstances in which they are used.
c2. Recommend the appropriate method for sampling collection, transport and processing
c3. Plan and supervise the complete laboratory workup for dealing with different samples reaching medical microbiology and virology laboratory
c4- Plan and supervise procedures and investigations which are in routine use in the immunology lab
c5. Plan and supervise safe working practices in the lab
c6. Advice on situations requiring referral to reference lab
c7. Plan and carry out research in the field of medical microbiology, virology and immunology.

d. General and transferable skills:
By the end of the programme the candidate will be able to:
d1-Communicate effectively through oral presentation, computer processing, written reports and scientific publications
d2. Acquire management skills: decision processes, objective criteria, problem definition, research design and evaluation, team-work and coordination.
d3. Integrate and evaluate information from a variety of sources.
d4. Manage resources and time.
d5. Learn independently with open-mindedness and critical enquiry.

3. Academic standards: (Benchmarks)
Academic reference standards (ARS) guided by NAQAAE
- University of Arkansas Graduate Program, USA
- Curriculum for specialist training in medical microbiology and virology, The Royal College of Pathologists, UK
- Specialty training curriculum for immunology, Joint Royal Colleges of Physicians Training Board, UK
- APIC (Association for Professionals in Infection Control and Epidemiology)
- European core curriculum for training for infection control practitioners.
- IC guidelines of U.S. Centers for Disease Control and Prevention (CDC) and International Federation of Infection Control (IFIC)

4. Curriculum structure and contents:
4a- Programme duration: Three academic years (6 semesters)
4b- Programme structure:

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<th>المقررات الدراسية</th>
<th>متطلبات الكلية</th>
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- الميكروبيولوجيا الطبية و مكافحة العدوى التطبيقية
- الفيروسات الطبية التطبيقية
- المناعة الطبية التطبيقية
- التخصص الدقيق: برنامج متقدم في أحد المقررات السابقة

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- أخلاقيات مهنة الطب والبحث العلمي
- الإحصاء الطبي
- الجوانب القانونية التشريعية في الممارسات الطبية
5. Programme courses:
   a. Compulsory

<table>
<thead>
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<td>MI7005</td>
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<tr>
<td>MI7006</td>
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L: Lecture, C: Clinical, F: Field and SDL: Self directed learning

b. Elective

<table>
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<tr>
<th>Code</th>
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<tr>
<td>E7043</td>
<td>Medical Laws</td>
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6. Program admission requirements:

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

1- أن 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.

3- بالنسبة لدرجة الدكتوراه في جراحات القلب والصدر وجراحات التجميل والإصلاح والحروق وجراحة الأوعية وجراحة الأطفال يشترط الحصول على درجة الماجستير في الجراحة العامة.

4- بالنسبة لدرجة الدكتوراه في أمراض الدم العملية تعتمد درجة الدكتوراه في الباثولوجيا الإكلينيكية مؤهلة لها.

5- بالنسبة لدرجة الدكتوراه في الرعاية المركزية يعتبر ماجستير التخدير مؤهلاً لها.

6- بالنسبة لدرجة الدكتوراه في أمراض الدم الإكلينيكية والغدد الصماء والأيض وأمراض الكلى والأمراض الروماتيزمية وأمراض الجهاز الهضمي والكبد تعتبر أيضاً دكتوراه الأمراض الباطنة مؤهلة لها.
بالإضافة إلى ماجستير التخصص.

7- بالنسبة لدرجة الدكتوراه في الأمراض الروماتيزمية وأمراض الجهاز الهضمي والكبد تعتبر أيضاً دكتوراه طب الأطفال مؤهلة للاضافية إلى ماجستير التخصص.

8- بالنسبة لدرجة الدكتوراه في أمراض الجهاز الهضمي والكبد تعتبر أيضاً دكتوراه طب المناطق الحارة مؤهلة للاضافية إلى ماجستير التخصص.

9- تسديد الرسوم ومصاريف التدريب وإستهلاك الأجهزة وإستيفاء المستندات المطلوبة في الملحق.

ملحق (1): يقدم طالب الإلتحاق لدرجة الماجستير الأوراق التالية:

1- طلب إلتحاق.
2- شهادة البكالوريوس.
3- شهادة الإمتياز.
4- شهادة الميلاد أو مستخرج رسمي.
5- المؤقت من التخنيد.
6- موافقة جهة العمل على التسجيل والتفرغ المطلوب.
7- عدد 6 صور فوتوجرافية جديدة.
8- بالنسبة للوفادين يقدم الطالب موافقة السفارة وحدد جهة تحمل النفقات كما يقدم شهادة صحية.

ملحق (2): يقدم طالب الإلتحاق للحصول على درجة الدكتوراه الأوراق التالية:

1- كل الأوراق المطلوبة في ملحق (1).
2- شهادة الماجستير أو الشهادة المؤهلة.
3- بروتوكول شهادة الدكتوراه.

10- التفرغ للدراسة لمدة خمس فصول دراسية على الأقل قبل دخول امتحان الجزء الثاني. ويمكن أن يتم التدريب لنفس المدة على الأقل في أحد المستشفيات أو المراكز العلمية المعتمدة من الكلية بعد استيفاء الشروط التي تحددها الأقسام المختصة.

7. Regulation for progression and program completion

مادة (9): توزع الدراسة في كل عام جامعي على فصول دراسيين مدة كل منها خمسة عشر أسبوعاً. يبدأ الأول في أول أكتوبر ويبذل الثاني في منتصف فبراير. مع تنظيم فصل دراسي صيفي مكلف لمدة ستة أسابيع. و يتم التسجيل للفصل الدراسي قبل اسبوعين من بدايةه على الأقل بعد استيفاء الشروط حسب المقررات المسجلة. ولا ينبغي أن يزيد العبء الدراسي في الفصل الواحد عن 6 ساعات معتمدة. ويجوز للطالب تعديل
المقررات خلال اسبوعين من بداية الفصل الدراسي (بالحذف أو الإضافة). كما يجوز له الانسحاب خلال
ستة أسابيع من أحد المقررات دون احتمال راسبًا فيها.

مادة (17): مدة الدراسة للحصول على الدكتوراه ستة وثلاثون شهراً (ست فصول دراسية) يجتاز خلالهم
طالب برنامجًا تدريبيًا متكاملًا بالقسم طبقًا للساعات المعتمدة الموضحة بالباب الخامس ويستوفي خلالها
المطلوب منه في كتيب متابعة الأنشطة ولا يسمح له بدخول الامتحان 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 إمتحانًا ولا
يشترط النجاح فيه بالكامل للانتقال للدراسة في الجزء الثاني ويستوفي خلالها التدريب إحدى المستندات
الجامعية أو المراكز المعتمدة من القسم ولجنة الدراسات العليا بالكلية سواء بالداخل أو الخارجي على أن يتم
إستكمال الدراسة طبقًا 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 بписыва فصول دراسية باستيفاء متطلبات الجامعة قبل التسجيل ومتطلبات الكلية ومناقشة
الرسالة قبل دخول إمتحان الجزء الثاني. ومتطلبات الجامعة هي الحصول على شهادة التويفل في اللغة
الإنجليزية (مجمع 500 درجة) ومتطلبات الكلية هي حضور دورات معتمدة من لجنة الدراسات العليا بالكلية
في مجال التخطيط والدراسات الطبية والإحصاء الطبي وإجتياز اختبارات خاصة تحددها اللجنة.

مادة (21): الساعات المعتمدة لدرجة الدكتوراه ست و تسعون ساعة منها ست و ثلاثون ساعة تمت دراستهم
انشاء الماجستير و يضاف ستون ساعة معتمدة على الأقل و يخصص منها خمس عشرة ساعة لكتيب متابعة
الأنشطة وخمس عشرة ساعة للرسالة و ست ساعات على الأقل للجزء الأول إزجود.

مادة (22): تتلزم الإقسام العلمية بالاتصال مع أقسام المواد المرتبطة بوضع إمتحانات موضوعية تشمل
وسائل التقييم المختلفة من أسئلة طويلة و وقصيرة و متعددة الاختبارات، واختبارات إكلينيكية مقتية تقيس
المهارات المختلفة على أن تشمل أوراق المناهج تقاس ذلك و تعتمد من لجنة الدراسات العليا بالكلية.

مادة (23): يعقد إمتحان الدور الأول في أكتوبر و نوفمبر من كل عام و يعقد إمتحان الدور الثاني في أبريل
و ما بعد من كل عام.

مادة (24): يكون النجاح في كل مادة من الدبلوم العالي والماجستير بعد الحصول على 60% من الدرجة
الكلية لكل لجان المادة مجتمعة على أن لا تقل درجة التحصيلي عن 50% ويكون النجاح في مواد الدكتوراه
بعد الحصول على 60% من درجة التحصيلي والعملي والإكلينيكي والشفي كل على حد.

مادة (27): تقسم الدرجات التي يحصل عليها الطالب في كل مقرر على الوجه التالي:
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<tr>
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<tr>
<td>A^-</td>
<td>من 90% حتى أقل من 85%</td>
</tr>
<tr>
<td>A^+</td>
<td>من 85% حتى أقل من 80%</td>
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<td>A^-</td>
<td>من 80% حتى أقل من 75%</td>
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<tr>
<td>B</td>
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<td>B^-</td>
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<td>B^-</td>
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<tr>
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<tr>
<td>C^-</td>
<td>من 65% حتى أقل من 60%</td>
</tr>
<tr>
<td>C^-</td>
<td>من 60% حتى أقل من 55%</td>
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<tr>
<td>F</td>
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ويتم حساب معدل الفصل (GPA) على أساس مجموع حاصل ضرب نقاط كل مقرر مضروباً في عدد ساعات المعتمدة مقدماً على المقررات التي درسها الطالب في الفصل الدراسي. كما يتم حساب معدل التراكمي للطالب (CGPA) على أساس مجموع حاصل ضرب النقاط التي حصل عليها الطالب في كل مقرر مضروباً في عدد ساعات المعتمدة مقدماً على مجموع الساعات المعتمدة الكلية.

مادة (28):

في حالة الرسوب في مادة أو مجموعة من المقررات في البكالوريوس أو الماجستير أو الدكتوراه يتم الإعادة في المادة أو المجموعة فقط. ويتم حساب التقدير الفعلي الذي يحصل عليه في أول إعادة فقط أما إذا تكرر رسوبية فيحسب له عند النجاح تقدير 60% فقط (أي 1.17 نقاط أي C).

و يجوز في حالة الرغبة في زيادة المعدل التراكمي أن يسجل الطالب مقرراً احتياطياً إضافياً واحداً أو أن يعيد أحد المقررات السابق اجتيازها مرة واحدة على أن يتم حساب الدرجة الإلزامي عند حساب معدل التراكمي يتم إضافة الساعات المعتمدة الإضافية.

مادة (29): في حالة استفتاذ مدة القد ممكن لطالب الدراسات العليا إعادة التسجيل مرة أخرى ولا يعتد بالنجاح في الجزء الأول أو الرسالة ويجب إعادةهما.
Course Specifications
Applied Medical Microbiology and Infection control
Ain Shams University Faculty of Medicine

Course specifications

Programme(s) on which the course is given: Medical Doctorate in Medical Microbiology and Immunology

Major or minor element of programmes: Major

Department offering the programme: Medical Microbiology and Immunology
Department offering the course: Medical Microbiology and Immunology

Academic year / Level: 1st, 2nd, 3rd, 4th, and 5th semesters
Date of specification approval: .............July 2009..........................

A- Basic Information
Title: Applied Medical Microbiology and Infection control
Code: MI7001
Credit Hours: 19
Lectures: 115 Practical: 150 F: 380 Total: 645

Co-ordinator
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B- Professional Information

1 – Overall aims of course:
At the end of this course the candidate will be able to:

- Recognize the epidemiological characteristics, pathogenic mechanisms and clinical forms of common medically important infectious syndromes
- Lead the complete microbiological workup of common medically important infectious syndromes including hospital acquired device related infections
- Acquire knowledge and sufficient professional skills to manage a medical microbiology laboratory
- Participate in surveillance and outbreak investigations of healthcare associated infections
- Conduct infection prevention and control measures in specific health care units

2- Intended learning outcomes (ILOs) from the course:
A- Knowledge and understanding

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

a1. Outline the principles of pathogenesis, epidemiology and clinical forms of common medical infectious syndromes
a2. Understand clinical and epidemiological priorities for microbiological investigations
a3. Identify infections of public health concerns including food and water associated diseases and zoonotic and occupationally acquired infections
a4. Acquire basic knowledge of the current legislation and guidelines on the microbiological testing of food and water
a5. Possess knowledge of risk management issues pertinent to medical microbiology laboratory processing.
a6. Be aware of organization and structure of medical microbiology laboratory
a7. Understand basis of management and quality assurance in the medical microbiology laboratory
a8. Identify risk factors and describe the dynamics of healthcare device related infections
a9. Understand the evidence base behind current recommendations on management of device related infections.
a10. Understand the evidence base behind current measures for infection prevention and control in specific hospital units.
a11. Understand the principles and practice of surveillance and outbreak investigations for healthcare associated infections

B- Intellectual skills

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

b1. Assimilate clinical, laboratory and epidemiological information and to use this to differentiate between infections and other conditions.
b2. Demonstrate an understanding of the range of possible uses for clinical and epidemiological data and information for common medical infectious syndromes
b3. Achieve a specific or differential diagnosis for suspected infectious syndromes
b4. Select the appropriate tests for microbiological diagnosis of infectious syndromes
b5. Recommend additional specific diagnostic tests when indicated
  b6. Recommend antimicrobial treatment or prophylaxis appropriate to the clinical situation
b7. Recommend appropriate measures for preventing healthcare device related infections
b8. Initiate investigation and control measures for outbreaks
b9. Appreciate the role and function of reference laboratories

C- Professional and Practical skills

By the end of the course the candidate will be able to:
c1. Establish a rapport with both medical microbiology laboratory and clinical staff with ability to explain the range of tests available, and the circumstances in which they are used.
c2. Recommend the appropriate method for sampling collection, transport and processing
c3. Plan and supervise the complete microbiological workup for dealing with different samples reaching medical microbiology laboratory
c4- Select, interpret and provide clinical advice based on laboratory investigations of patients with suspected immunodeficiency, allergy or autoimmunity
c5- Advice on procedures and investigations which are in routine use in the immunology laboratory
c6. Plan and supervise safe working practices in the medical microbiology lab
c7. Advice on situations requiring referral to reference lab

D- General and transferable skills

By the end of the course the candidate will be able to:
d1-Communicate effectively through oral presentation, computer processing, written reports and scientific publications
d2. Acquire management skills: decision processes, objective criteria, problem definition, research design and evaluation, teem-work and coordination.
d3. Integrate and evaluate information from a variety of sources.
d4. Manage resources and time.
d5. Learn independently with open- mindedness and critical enquiry.
3- Course contents:

<table>
<thead>
<tr>
<th>Contents</th>
<th>No of hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>L</td>
</tr>
<tr>
<td><strong>Applied Medical Microbiology and Infection Control</strong></td>
<td></td>
</tr>
<tr>
<td>1. Microbiological diagnosis of infectious syndromes</td>
<td></td>
</tr>
<tr>
<td>Each will include the following:</td>
<td></td>
</tr>
<tr>
<td>• Overview of pathogenesis including host and microbial factors</td>
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<tr>
<td>• Clinical forms</td>
<td></td>
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<tr>
<td>• Specimen collection and transport</td>
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<tr>
<td>• Specimen processing</td>
<td></td>
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<tr>
<td>• Routine cultures</td>
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<tr>
<td>• Specialised diagnostic tests</td>
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<tr>
<td>• Reporting</td>
<td></td>
</tr>
<tr>
<td>1.1- Blood stream infections</td>
<td>4</td>
</tr>
<tr>
<td>1.2-Upper respiratory tract infections</td>
<td>4</td>
</tr>
<tr>
<td>1.3- Other infections of oral cavity and neck</td>
<td>4</td>
</tr>
<tr>
<td>1.4- Lower respiratory tract infections</td>
<td>4</td>
</tr>
<tr>
<td>1.5- Meningitis and other infections of CNS</td>
<td>4</td>
</tr>
<tr>
<td>1.6- Infections of eyes, ears and sinuses</td>
<td>4</td>
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<tr>
<td>1.7- Urinary tract infections</td>
<td>4</td>
</tr>
<tr>
<td>1.8- Genital tract infections</td>
<td>4</td>
</tr>
<tr>
<td>1.9- Gastrointestinal tract infections</td>
<td>4</td>
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<tr>
<td>1.10- Skin, soft tissue and wound infections</td>
<td>4</td>
</tr>
<tr>
<td>1.11- Normal sterile body fluids, Bone and bone marrow and solid tissues</td>
<td>4</td>
</tr>
<tr>
<td>2. Water Associated Diseases</td>
<td>2</td>
</tr>
<tr>
<td>3. Food Associated Diseases</td>
<td>3</td>
</tr>
</tbody>
</table>
### 4. Zoonotic Diseases

| 2 |

### 5. Occupational hazard related diseases

| 2 |

### 6. Practical Virology

#### 6.1- Introductions to bacteriophage, the viruses of bacteria whose study initiated modern molecular biology

| 1 | 5 |

#### 6.2- Virological Methods

A variety of assay formats that measure virus presence directly (plaque assay and bioassay) or through a key property such as receptor binding (red blood cell agglutination)

| 1 | 5 |

#### 6.3- Methods used to classify and quantitate viruses

| 1 | 5 |

#### 6.4- Virological techniques including virus isolation, amplification and quantitation.

| 1 | 10 |

#### 6.5- Tissue culture techniques & propagation of viruses & egg inoculation routes

(Tissue culture & how to grow viruses in cell culture.)
- Multi-nucleated giant cell
- Intranuclear inclusion bodies
- Intracytoplasmic inclusion bodies
- Cytopathic effects of HSV-1 & enteroviruses

| 1 | 10 |

#### 6.6- a range of practical virology techniques as:

- CFT
- Hemagglutination inhibition
- EIA & IFA
- Neutralization test

<p>| 1 | 10 |</p>
<table>
<thead>
<tr>
<th>6.7-Electron Microscopy</th>
<th>Electronmicrographs of DNA &amp; RNA viruses</th>
<th>1</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. Immunological practices field training</td>
<td></td>
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<tr>
<td>7.1- Serologic Assays</td>
<td></td>
<td>1</td>
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<tr>
<td>• Handling sera and obtaining fluid from different compartments</td>
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<tr>
<td>• Acute-phase proteins and inflammation</td>
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<tr>
<td>• Complement in health and disease</td>
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<tr>
<td>• Immunoglobulin titers and immunoglobulin subtypes</td>
<td></td>
<td></td>
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<tr>
<td>• Rheumatoid factors</td>
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<td></td>
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<tr>
<td>• Autoantibodies</td>
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<td></td>
<td></td>
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<tr>
<td>• SLE-associated tests</td>
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<td></td>
<td></td>
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<tr>
<td>• Tumor markers</td>
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<td></td>
<td></td>
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<tr>
<td>• Multiplexed serum assays</td>
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<tr>
<td>7.2- Cellular Enumeration and Phenotyping</td>
<td></td>
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<tr>
<td>• Handling and storage of cells and sera: practical</td>
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<tr>
<td>• Phenotypic and functional measurements on circulating immune cells and their subsets</td>
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<tr>
<td>• Natural killer cells</td>
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<td>• Peripheral blood naive and memory B cells</td>
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<td>• Dendritic cells</td>
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<td>• Monocytes and macrophages</td>
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<tr>
<td>• Tumor cells</td>
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<tr>
<td>• Regulatory T. cells</td>
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<tr>
<td>• Intracellular cytokine assays</td>
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<tr>
<td>7.3- Cellular Function and Physiology</td>
<td></td>
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<td></td>
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<tr>
<td>• Cytolytic assays</td>
<td></td>
<td></td>
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<tr>
<td>• Mixed leukocyte reactions</td>
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</tr>
</tbody>
</table>
- Antigen/mitogen-stimulated lymphocyte proliferation
- Monitoring cell death
- Cytokine enzyme linked immunosorbent spot (ELISPOT) assay
- Testing natural killer cells

### 7.4-Other Assays for:

<table>
<thead>
<tr>
<th>Assay</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hematologic disorders</td>
<td>2</td>
</tr>
<tr>
<td>Autoimmunity</td>
<td>10</td>
</tr>
<tr>
<td>Transplantation</td>
<td></td>
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<tr>
<td>Immunodeficiencies</td>
<td></td>
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<tr>
<td>Asthma and allergy</td>
<td></td>
</tr>
</tbody>
</table>

### 8. Medical microbiology laboratory management

#### 8.1-Medical microbiology laboratory physical design

#### 8.2-Medical microbiology laboratory Management

#### 8.3-Medical microbiology laboratory Organization

#### 8.4-Quality in medical microbiology laboratory

#### 8.5-Sentinel laboratory response to bioterrorism

### 9. Applied Infection prevention and Control

#### 9.1- Infection Prevention and Control of Device Related Infections

<table>
<thead>
<tr>
<th>Infection Type</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ventilator associated pneumonia (VAP)</td>
<td>2</td>
</tr>
<tr>
<td>Intra vascular catheter related Infections (IVCRIs)</td>
<td>2</td>
</tr>
</tbody>
</table>
● Surgical site infection (SSI)  
● Catheter related urinary tract infections (CRUTIs)  
● Cardiac catheterization and electrophysiology  
● Safe injection  
● Body Piercing, Tattoos, and Electrolysis

<table>
<thead>
<tr>
<th>9.2- Unit specific Infection Prevention and Control Measures:</th>
</tr>
</thead>
<tbody>
<tr>
<td>● IC measures in Operating rooms (OR)</td>
</tr>
<tr>
<td>● IC measures in Intensive care units (ICU)</td>
</tr>
<tr>
<td>● IC measures in Neonatal ICU</td>
</tr>
<tr>
<td>● IC measures in dentistry unit</td>
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<tr>
<td>● IC measures in hemodialysis unit</td>
</tr>
<tr>
<td>● IC measures in endoscopy unit</td>
</tr>
</tbody>
</table>

| 9.3- Surveillance of hospital acquired infections | 6 | 6 | 60 |

| 9.4- Outbreak investigations | 4 | 4 |

| TOTAL | 115 | 150 | 380 |

L: Lecture P: Practical F: Field training and SDL: Self directed learning

4 - Student Assessment Methods:

- Written exam. to assess knowledge and intellectual skills
- Oral exam to assess knowledge and intellectual skills
- Practical exam to assess practical skills

5- Weighing of Assessment :

5.1- Written exam 350
    Clinical exam 450
    Oral exam 150
6 -- List of References
6.1- Essential Books (Text Books)
- Jawetz, Melnick & Adelberg’s Medical Microbiology
- Medical Microbiology, Greenwood D., Slack R., Peutherer J., and Barer M.
- Mackie & McCartney Practical Medical Microbiology
- Medical Immunology, Tristram G. Parslow, Daniel P. Sites, Abba I. Terr and John B. Imboden. McGRAW- Hill Companies, Inc.
- International Federation of Infection Control: Basic Concepts (www.theific.org).
- APIC Text of Infection Control and Epidemiology, Association for Professionals in Infection Control and Epidemiology, INC.

6.2- Recommended Books
- Manual of Clinical Microbiology
- Bailey & Scott’s Diagnostic Microbiology
- Basic Virology, Edward K. Wagner R. and Atinez J.
- Fundamental Virology, Bernard N. and david M. Publisher: Lippincott Williams & Wilkins.
- Fields Virology: (Vol.1&2) by Bernard N. Fields (Editor), David M. Knipe (Editor), Peter M. Howley
- Cellular and Molecular Immunology, Abul K. Abbas, Andrew H. Lichman. Elsevier Science (USA).
- CDC, Infection Control in Healthcare Settings
  http://www.cdc.gov/ncidod/dhqp/
- WHO, Infection Control Health topics
  http://www.who.int/topics/infection_control/en/
- Information Resources in Infection Control
  http://www.theific.org/pdf_files/damani_IFIC_resource_5theditiodf
Applied Medical Virology  
Ain Shams University Faculty of Medicine

Course specifications

Programme(s) on which the course is given: Medical Doctorate in Medical Microbiology and Immunology

Major or minor element of programmes: Major

Department offering the programme: Medical Microbiology and Immunology
Department offering the course: Medical Microbiology and Immunology
Academic year / Level: 1st and 2nd semesters
Date of specification approval: July 2009

A- Basic Information
Title: Applied Medical Microbiology and Infection control
Code: M17002
Credit Hours: 3.5
Lectures: 52.5 hours

Co-ordinator

B- Professional Information

1- Course Aims:

This course aims to provide a comprehensive knowledge of medical virology including common viral clinical syndromes and infections caused by viruses of major significance to public health as regards disease causation, epidemiology, pathogenesis, diagnosis and treatment. The course also provides the candidate with practical training in this diverse field.

2- Intended Learning Outcomes (ILOs) from the Course:

a- Knowledge and understanding

By the end of the course the candidate will be able to:
a1- Outline the principles of epidemiology, clinical spectrum, diagnosis and management of clinical syndromes caused by viruses of medical importance with special emphasis on viruses of public health concern.
a2- Recognize the viral infections that can be transmitted from mother to baby during the antenatal, peri-natal and postnatal period.
a3- Be aware of the role of risk avoidance, therapeutic interventions, immunization and Caesarian section in the prevention of viral congenital infections.
a4- Investigate, and advise on following ascertainment of a healthcare worker with blood-borne viral infections
a5- Describe, the indication, optimal methods for collection, transport, storage, reception, identification and documentation of different clinical specimens of viral infections.
a6- Describe different tests used in the laboratory diagnosis of viral infections and diseases together with an understanding of safe working practices and procedures

b- Intellectual skills

By the end of the course the candidate will be able to:
b1- Provide clinicians with advice regarding diagnosis and treatment of viral infections, when requested.
b2- Assimilate clinical, laboratory and epidemiological information and to use this to differentiate between the different viral infections.
b3- Interpret results of different laboratory tests for diagnosis and follow up of different viral infections.
b4- Advise on need for urgent testing versus delayed testing.
b5- Perform risk assessment when required for all procedures undertaken in the virology laboratory.
b6- Plan, carry out and evaluate research in the field of medical virology.

c- Professional skills

By the end of the course the candidate will be able to:
c1- Perform and interpret investigations relevant to the patient and achieve specific or differential diagnosis of viral infections.
c2- Supervise collection, and safe handling of all routine specimens in the virology lab.
c3- Plan and supervise the complete laboratory workup for dealing with different samples reaching the virology lab.
d- General and transferable skills

By the end of the course the candidate will be able to:
d1. Communicate effectively through oral presentation, computer processing, written reports and scientific publications.
d2. Acquire management skills: decision processes, objective criteria, problem definition, research design and evaluation, teamwork and coordination.
d3. Integrate and evaluate information from a variety of sources.
d4. Manage resources and time.
d5. Learn independently with open-mindedness and critical enquiry.

3- Course contents:

<table>
<thead>
<tr>
<th>Contents</th>
<th>No of hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Viral infections of the respiratory tract</td>
<td>4</td>
</tr>
<tr>
<td>2. Viral infections of the central nervous system (meningitis &amp; encephalitis)</td>
<td>4</td>
</tr>
<tr>
<td>3. Human viral gastroenteritis</td>
<td>4</td>
</tr>
<tr>
<td>4. Viral infections of the foetus, neonate</td>
<td>4</td>
</tr>
<tr>
<td>5. Viral infections of childhood</td>
<td>4</td>
</tr>
<tr>
<td>6. Transfusion transmitted virus infections</td>
<td>4</td>
</tr>
<tr>
<td>7. Sexually transmitted viral infections</td>
<td>4</td>
</tr>
<tr>
<td>8. Viral infections of the immunocompromised patients</td>
<td>4</td>
</tr>
<tr>
<td>9. Virus infections and cancer</td>
<td>4</td>
</tr>
<tr>
<td>10. Viral zoonoses</td>
<td>4</td>
</tr>
<tr>
<td>11. Viral lesions of the skin (exanthems) and mucosa (exanthems)</td>
<td>3.5</td>
</tr>
<tr>
<td>12. Acute &amp; chronic viral hepatitis</td>
<td>3</td>
</tr>
<tr>
<td>13. Arboviral infections of humans &amp; non-arboviral zoonotic infections, including hemorrhagic fevers</td>
<td>3</td>
</tr>
<tr>
<td>14. Human Prion Diseases</td>
<td>3</td>
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<tr>
<td>TOTAL</td>
<td>52.5</td>
</tr>
</tbody>
</table>

L: Lecture  P: Practical  F: Field training and SDL: Self directed learning

4 - Student Assessment Methods:

- Written exam. to assess knowledge and intellectual skills
• Knowledge, intellectual and practical skills will be assessed through oral and practical exams of Applied Medical Microbiology and Infection Control course (MI7001)

5- Weighing of Assessment :
Written exam 180

6 - List of References
6.1- Essential Books (Text Books)
• Jawetz, Melnick & Adelberg’s Medical Microbiology
• Medical Microbiology, Greenwood D., Slack R., Peutherer J., and Barer M.
• Viruses and Human Diseases: James H. Strauss and Ellen G. Strauss

6.2- Recommended Books
• Basic Virology, Edward K. Wagner R. and Atinez J.
• Fundamental Virology, Bernard N. and david M. Publisher: Lippincott Williams & Wilkins,
• Fields Virology: (Vol.1&2) by Bernard N. Fields (Editor), David M. Knipe (Editor), Peter M. Howley
Applied Medical Immunology
Ain Shams University Faculty of Medicine

Course specifications

Programme(s) on which the course is given: Medical Doctorate in Medical Microbiology and Immunology

Major or minor element of programmes: Major

Department offering the programme: Medical Microbiology and Immunology
Department offering the course: Medical Microbiology and Immunology
Academic year / Level: 3rd and 4th semesters
Date of specification approval: ………….July 2009…………………………..

A- Basic Information
Title: Applied Medical Microbiology and Infection control
Code: MI7003
Credit Hours: 3.5
Lectures: 52.5 Practical: Total:

Co-ordinator
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B- Professional Information

1 – Overall aims of course:

- The course helps the candidate to integrate the immunological pathophysiology in the diagnosis and management of various human diseases including cancer immunology, autoimmune diseases, infectious diseases, allergy and immunodeficiency diseases. Also to introduce candidates to active research topics, to bridge the basic immunology to clinical immunology, and motivate them for the selection of their own research topics related to important human diseases

2- Intended learning outcomes (ILOs) from the course:

A- Knowledge and understanding

By the end of the course the candidate will be able to:
a1- Explain details of diagnosis, natural history, outcome of immunologically mediated diseases and required therapeutic measures.
a2- Describe the immunological aspects of selected diseases that affect humans and outline the clinical aspects of these conditions or diseases.
a3- Describe and compare what is known about the origins and progression of the diseases, with special reference to the immune abnormalities, or reactions, involved in terms of the important genes, cells and mediators.
a4- Identify the strategies for manipulation of the immune response for immunotherapy of disease.
a5- Understand the pathogenic mechanisms involved in immune-mediated diseases and the role of host response in immunopathology.
a6- Explain the concept of immune surveillance, molecular basis of oncogenesis and how the immune system can be mobilized as well as manipulated to eradicate tumor cells.
a7- Understand the molecular basis and the principles governing immune reconstitution of immunodeficiency diseases.
a8- Recognize the cellular basis of the transplant rejection phenomena and introduction of drugs and antisera effective in the control of rejection.
a9- Explain the principles of immunoprophylaxis with special emphasis on potential advances in the field.

B- Intellectual skills

By the end of the course the candidate will be able to:
b1- Apply immunological mechanisms in clinical and research problems.
b2- Correlate different immune component deficiency with disease process.
b3- Evaluate, analyze and interpret laboratory tests related to applied medical immunological problems.
b4- Plan, carry out and evaluate research in the field of medical immunology.
b5- Classify different immunodeficiency diseases according to risk groups.
b6- Differentiate types of lymphocyte and plasma cell malignancies and correlate them with different laboratory findings.

C- Professional and Practical skills

By the end of the course the candidate, in close co-operation with other clinical colleagues will be able to:
c1- Provide advice for immunoglobulin replacement therapy, including evidence-based indications, the methods of delivery, potential hazards and managing complications of this therapy.
c2- Anticipate, prevent, detect and manage infections in immuno-compromised patients

c3- Provide advice on immunosuppressive and immunomodulatory drugs.

c4- Provide advice on immunization including indications, adverse reactions, contraindications and immunization of patients with immunodeficiency.

c5- Select and interpret laboratory investigations relevant to the diagnosis, assessment and monitoring of patients with suspected immunodeficiency, allergy or autoimmunity.

c6- Write succinct, relevant and understandable reports in response to a request for investigation.

c7- Recommend and supervise procedures and investigations which are in routine use in the immunology laboratory.

c8- Assess children with recurrent or unusual infections or failure-to-thrive (in close collaboration with pediatric colleagues) in order to exclude immunodeficiency diseases.

c9- Provide advice on the diagnosis and management of (in association with a rheumatologist or relevant organ-based specialists) patients with autoimmune rheumatic disease.

c10- Direct a diagnostic immunology laboratory at consultant level.

D- General and transferable skills

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

d1. Communicate effectively through oral presentation, computer processing, written reports and scientific publications

d2. Acquire management skills: decision processes, objective criteria, problem definition, research design and evaluation, team-work and coordination.

d3- Extract of knowledge from the text books and webs that help in construct the objectives and strategies.

d4. Integrate and evaluate information from a variety of sources.

d5. Manage resources and time.

d6. Learn independently with open-mindedness and critical enquiry.

d7- Have self confidence and leadership skills
### 3- Course contents:

<table>
<thead>
<tr>
<th>Contents</th>
<th>No of hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Basic Concepts for Applied Immunology</strong></td>
<td></td>
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<tr>
<td>- Cells of the immune system</td>
<td></td>
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<tr>
<td>- Cytokines, chemokines and other inflammatory mediators including lipid mediators</td>
<td></td>
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<tr>
<td>- Phagocytic cells and their function</td>
<td></td>
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<tr>
<td>- Antibody mediated immunity</td>
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<tr>
<td>- Complement system</td>
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<td>- Cell mediated immunity</td>
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<td>- Natural immunity</td>
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<tr>
<td>- Regulation of the immune system</td>
<td>10</td>
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<td><strong>2. B cell development:</strong></td>
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<td>- Immunoglobulin gene structure and rearrangement</td>
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<td>- B cell selection and export</td>
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<td><strong>3. T cell development:</strong></td>
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<tr>
<td>- T cell subsets, cellular interactions</td>
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<tr>
<td>- T cell selection and export</td>
<td></td>
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<tr>
<td><strong>4. Infection and Immunity</strong></td>
<td>2</td>
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<td><strong>5. Tolerance and Autoimmunity</strong></td>
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<td><strong>6. Organ-Specific Autoimmune Diseases</strong></td>
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<td><strong>7. Systemic Lupus Erythromatosus- Rheumatoid Arthritis</strong></td>
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<td><strong>8. Hypersensitivity Reactions</strong></td>
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<td><strong>9. Immunoglobulin E-Mediated (Immediate) Hypersensitivity</strong></td>
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<td><strong>10. Immunoematology</strong></td>
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<td><strong>11. Immune Complex Diseases</strong></td>
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<td><strong>12. Transplantation Immunology</strong></td>
<td>3</td>
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<td><strong>13. Tumor Immunology</strong></td>
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<td><strong>14. Lymphocyte and Plasma Cell Malignancies</strong></td>
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<tr>
<td><strong>15. Diagnosis of Immunodeficiency Diseases</strong></td>
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Primary Immunodeficiency Diseases- AIDS and Other Acquired Immunodeficiency Diseases

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<tr>
<td>16. Immune System Modulators</td>
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<td>17. Vaccination and Passive Immunization</td>
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<tr>
<td>18. Immunology of some important gastrointestinal and hepato-biliary diseases</td>
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<tr>
<td>19. Immunology of some important respiratory diseases and neurological diseases</td>
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L: Lecture  P: Practical  F: Field training and SDL: Self directed learning

**4 - Student Assessment Methods:**
- Written exam. to assess knowledge and intellectual skills
- Knowledge, intellectual and practical skills will be assessed through oral and practical exams of Applied Medical Microbiology and Infection Control course (MI7001)

**5- Weighing of Assessment :**
Written exam  180

**6 -- List of References**

6.1- Essential Books (Text Books)
- Medical Immunology, Tristram G. Parslow, Daniel P. Sites, Abba I. Terr and John B. Imboden. McGRAW- Hill Companies, Inc.

6.2- Recommended Books
- Cellular and Molecular Immunology, Abul K. Abbas, Andrew H. Lichman. Elsevier Science (USA).
- Fundemental Immunology, Paul, William E. Lippincott Williams & Wilkins
Course Specifications

**Advanced Medical Microbiology and Infection control**
Ain Shams University Faculty of Medicine

**Course specifications**

Programme(s) on which the course is given: Medical Doctorate in Medical Microbiology and Immunology

Major or minor element of programmes: Major

Department offering the programme: Medical Microbiology and Immunology

Department offering the course: Medical Microbiology and Immunology

Academic year / Level: 6th semester

Date of specification approval: July 2009

**A- Basic Information**

Title: Advanced Medical Microbiology and Infection control

Code: MI700

Credit Hours: 2

Lectures: 15  
Practical: -  
Field: 60  
Total: 75

**Co-ordinator**

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**B- Professional Information**

1 – Overall aims of course: help the candidate to

- Understand molecular mechanisms behind pathogenesis of medically important microorganisms and antimicrobial resistance in order to be able to participate in effective research
- Acquire knowledge and sufficient professional skills to lead infection prevention and control programs at hospital and community bases.
- Experience the practice of governance and audit through evaluation of practice against the standards of evidence-based medicine, which underpin medical microbiology and infection prevention and control practice.

2- Intended learning outcomes (ILOs) from the course:

**A- Knowledge and understanding**
By the end of the course the candidate will be able to:

a1. Understand molecular mechanisms behind pathogenesis of medically important microorganisms and antimicrobial resistance

a2. Recognize the consequences of severe infection including disseminated intravascular coagulation (DIC) and sepsis syndrome

a3. Recognize specific infection problems in critically ill patients and in special health care settings

a4. Identify reservoirs and sources for infection transmission in hospital environment

a5. Identify infection prevention strategies and control hierarchy for epidemiologically important organisms and emerging infections

a6. Describe the principles of hospital water and air quality

b7. Understand the issues around patient safety

b8. Recognize the basics of quality management in healthcare organizations (HCO)

B- Intellectual skills

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

b1. Plan, and evaluate research including pathogenesis and antimicrobial susceptibility of medically and epidemiologically important microorganisms at molecular level

b2. Direct the infection prevention and control planning activities

b4. Appreciate the role of multidisciplinary team working in hospital design and construction

b5. Evaluate patient care environments for infection risk and hazards

b6. Assess infection risk associated with special care settings

b7. Contribute to evaluation and accreditation of HCO

b8. Advocate the importance of rational use of antibiotics including prophylactic and therapeutic use

b9. Integrate risk management concepts and methods (e.g adverse event reporting and analysis for its root causes) in IC activities

C- Professional and Practical skills

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

c1. Carry out research including pathogenesis and antimicrobial susceptibility of medically and epidemiologically important microorganisms at molecular level
c2- Develop strategies to prevent, monitor and control spread of epidemiologically important organisms and multidrug resistant pathogens e.g. MRSA, VRE, ESβLs Gram negative bacilli

c3- Participate in antimicrobial use monitoring and evaluation

c4- Prepare a plan to control antibiotic resistance and involve key members in the implementation of this plan

c5- Assist facility engineering in the development of infection control plans for hospital construction, renovation and maintenance

c6- Develop IC policies and procedures for support services and for special care settings in health care facilities

c7- Evaluate performance with appropriate data collection tools, data analysis and interpretation of results

c8- Conduct infection control educational and training programs for healthcare workers and non medical care givers including pre-employment and ongoing training.

D- General and transferable skills

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

d1. Communicate effectively through oral presentation, computer processing, written reports and scientific publications

d2. Acquire management skills: decision processes, objective criteria, problem definition, research design and evaluation, team-work and coordination.

d3. Integrate and evaluate information from a variety of sources.

d4. Manage resources and time.

d5. Learn independently with open- mindedness and critical enquiry.
### 3- Course contents:

<table>
<thead>
<tr>
<th>Contents</th>
<th>No of hours</th>
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<tbody>
<tr>
<td><strong>Advanced Medical Microbiology and Infection Control</strong></td>
<td></td>
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<tr>
<td><strong>A. Advanced Medical Microbiology</strong></td>
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<tr>
<td>1. Molecular pathogenesis of medically important organisms</td>
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<tr>
<td>• Adherence</td>
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<td>• Internalisation and invasion</td>
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<td>• Intracellular signalling</td>
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<td>• Quorum sensing</td>
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<td>• Biofilm formation</td>
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<td>• Toxin production and cytotoxicity</td>
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<td>• Evasion of immune response</td>
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<td>• Pathogenicity islands</td>
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<td>2. Antimicrobial resistance at molecular level</td>
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<td><strong>B. Advanced infection prevention and control Issues</strong></td>
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<td><strong>A. Infection prevention and Control in Vulnerable Groups and Special Settings</strong></td>
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<td>• Perinatal, neonatal and pediatric care</td>
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<td>• Geriatrics and long term care</td>
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<td>• Burns</td>
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<td>• Ambulatory care</td>
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<td>• Post mortem care</td>
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<td>• Imaging Services and Radiation Oncology</td>
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<tr>
<td>• Central sterilization services, reprocessing of single use items</td>
<td>4</td>
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<tr>
<td>• Pharmacy</td>
<td>4</td>
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<tr>
<td>• Public Health and Travel Health</td>
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<td><strong>B. Hospital water quality</strong></td>
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<td>C.</td>
<td>Hospital air quality</td>
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<td>D.</td>
<td>Laundry</td>
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<td>E.</td>
<td>Dietary services</td>
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<td>F.</td>
<td>Hospital construction and renovation</td>
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<td>G.</td>
<td>Infection prevention and control for epidemiologically important organisms and MDROs</td>
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<td>H.</td>
<td>Infection prevention and control for emerging infections</td>
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<td>I.</td>
<td>Infection prevention and control program management and quality improvement</td>
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<td>J.</td>
<td>Patient safety</td>
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<td>TOTAL</td>
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</tbody>
</table>

**6 -- List of References**

6.1- Essential Books (Text Books)
- Jawetz, Melnick & Adelberg’s Medical Microbiology
- Medical Microbiology, Greenwood D., Slack R., Peutherer J., and Barer M.
- Mackie & McCartney Practical Medical Microbiology
- Manual of Clinical Microbiology
- International Federation of Infection Control: Basic Concepts (www.theific.org).
- APIC Text of Infection Control and Epidemiology, Association for Professionals in Infection Control and Epidemiology, INC.

6.2- Recommended Books
- Bailey & Scott’s Diagnostic Microbiology
- CDC, Infection Control in Healthcare Settings
- WHO, Infection Control Health topics
  [http://www.who.int/topics/infection_control/en/](http://www.who.int/topics/infection_control/en/)
- Information Resources in Infection Control
  [http://www.theific.org/pdf_files/damani_IFIC_resource_5thedition](http://www.theific.org/pdf_files/damani_IFIC_resource_5thedition)
Course Specifications
Advanced Medical Virology
Ain Shams University Faculty of Medicine

Course specifications

Programme(s) on which the course is given: Medical Doctorate in Medical Microbiology and Immunology

Major or minor element of programmes: Major

Department offering the programme: Medical Microbiology and Immunology

Department offering the course: Medical Microbiology and Immunology

Academic year / Level: 6th semester

Date of specification approval: July 2009

A- Basic Information
Title: Advanced Medical Microbiology and Infection control
Code: MI7005
Credit Hours: 2
Lectures: 30 Practical: Total: 30

Co-ordinator

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B- Professional Information

1 – Overall aims of course: help the candidate to
1- Course Aims:

By the end of the course the candidate will be able to:
1) Organize, manage and direct a diagnostic medical virology laboratory.
2) Carry out surveillance activities related to viral infections of public health importance, and investigate and manage outbreaks of viral diseases.
3) Undertake teaching in medical virology for undergraduates, post-graduates and paramedical personnel

2- 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 principles of viral genetics in clinical and research problems
a2- Identify types of host virus interactions and mechanisms of viral evasion of immune response and understand immunology and epidemiology in virus-host relationships
a3- Explain different viral pathogenic mechanisms with disease process
a4- Identify antiviral chemotherapeutic agents, their classification, mechanism of action, uses, mechanisms for development of resistance and limitations.
a5- Recognize existing vaccines and schedules of immunization and new trends in vaccine development
a6- Discuss viral induced oncogenesis.
a7- Recognize the impact made by immunology and molecular biology on diagnostic medical virology
a8- Understand the principles of prophylaxis, both with antiviral drugs and with immune globulins.
a9- Understand evolving laboratory methods for the diagnosis, treatment and monitoring of viral diseases

b- Intellectual skills

By the end of the course the candidate will be able to:
b1- Classify different viruses according to risk groups
b2- Differentiate types of host virus interactions and mechanisms of viral evasion of immune response
b3- Correlate different viral pathogenic mechanisms with disease processes
b4- Appreciate the danger of handling and use of infectious agents on community and environment with special emphasis on hemorrhagic viral diseases
b5- Apply principles of viral genetics in clinical and research problems

c- Professional skills

By the end of the course the candidate will be able to:
c1- Develop policies and procedures of infection prevention and control regarding medically and epidemiologically important viral infections
c2- Raise awareness about the emergence of viruses responsible for human diseases
c3- Design and carry out research projects in the field of medical virology

d- General and transferable skills

By the end of the course the candidate will be able to:
d1- Communicate effectively through oral presentation, computer processing, written reports and scientific publications
d2. Acquire management skills: decision processes, objective criteria, problem definition, research design and evaluation, team-work and coordination.
d3. Integrate and evaluate information from a variety of sources.
d4. Manage resources and time.
d5. Learn independently with open-mindedness and critical enquiry.

3- Course contents:

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<thead>
<tr>
<th>Contents</th>
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<tr>
<td>1. Molecular Virology (Recombinant viruses &amp; viral vectors)</td>
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<td>2. Viral Genetics</td>
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<td>3. Antiviral Therapy</td>
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<td>4. Virus Vaccines</td>
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<td>5. Viral evasion of the immune response</td>
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<tr>
<td>6. Epidemiology of viral diseases</td>
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<tr>
<td>7. Pathogenesis of Viral infections and Virus-Host Interactions</td>
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<tr>
<td>8. Viruses and Oncogenesis</td>
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<tr>
<td>9. Viral Evolution (“emerging viruses”)</td>
<td>4</td>
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<td>TOTAL</td>
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</table>

L: Lecture  P: Practical  F: Field training and SDL: Self directed learning

4 - Student Assessment Methods:

- Written exam. to assess knowledge and intellectual skills

5- Weighing of Assessment:

Written exam 90

6 - List of References

6.1- Essential Books (Text Books)
- Jawetz, Melnick & Adelberg’s Medical Microbiology
- Viruses and Human Diseases Authors: James H. Strauss and Ellen G. Strauss

6.2- Recommended Books
- Basic Virology, Edward K. Wagner R. and Atinez J.
- Fundamental Virology, Bernard N. and David M. Publisher: Lippincott Williams & Wilkins,
- Fields Virology: (Vol.1&2) by Bernard N. Fields (Editor), David M. Knipe (Editor), Peter M. Howley
Advanced Medical Immunology
Ain Shams University Faculty of Medicine

Course specifications

Programme(s) on which the course is given: Medical Doctorate in Medical Microbiology and Immunology

Major or minor element of programmes: Major

Department offering the programme: Medical Microbiology and Immunology
Department offering the course: Medical Microbiology and Immunology
Academic year / Level: 6th semester
Date of specification approval: ……………July 2009…………………………..

A- Basic Information
Title: Advanced Medical Microbiology and Infection control
Code: MI7006
Credit Hours: 2
Lectures: 30 hours Practical: - Total: 30

Co-ordinator
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B- Professional Information

1 – Overall aims of course:
The course approaches the subject of immunology from the viewpoints of molecular immunology, genetics and cell adhesion molecules, cytokines, lymphocyte activation, gene regulation, signal transduction, apoptosis, immunological diseases, and immune aspects of gene therapy

2- Intended learning outcomes (ILOs) from the course:

A- Knowledge and understanding

By the end of the course the candidate will be able to:
a1- Identify the commonalities of T and B lymphocyte development and activation as well as the unique aspects of their development
a2- Identify and characterize the molecular mechanisms that are involved in MHC-restricted antigen presentation.
a3- Discuss TCR and BCR specific downstream signaling pathways
a4- Discuss the different types of B and T cell subsets with respect to cytokine production.
a5- Discuss dendritic cell differentiation in response to a wide variety of interacting signals.
a6- Discuss pathogenesis of autoimmunity and identify factors that potentiate or down-regulate the autoimmune process.
a7- Understand the principles governing immune reconstitution of immunological diseases, using Gene Therapy.

**B- Intellectual skills**

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

b1- Apply principles of molecular immunology in clinical and research problems
b2- Differentiate stages of development, activation and effector functions of B and T cells.
b3- Demonstrate the different modern laboratory techniques for isolation and identification of different components of the immune cells.
b4- Correlate different mechanisms of cellular suicide with disease process
b5- Criticize the use of gene therapy in immune-mediated diseases and the strategies that may be used to prevent and combat disease

**C- Professional and Practical skills**

**By the end of the course the candidate, in close co-operation with other clinical colleagues will be able to:**

c1- Interpret different immunological laboratory tests with molecular basis.
c2- Apply immunological molecular practices to achieve a definitive diagnosis of diseases.
c3- Design and carry out research projects in the field of medical immunology.

**D- General and transferable skills**

**By the end of the course the candidate will be able to:**
d1. Communicate effectively through oral presentation, computer processing, written reports and scientific publications
d2. Acquire management skills: decision processes, objective criteria, problem definition, research design and evaluation, team-work and coordination.
d3. Integrate and evaluate information from a variety of sources.
d4- Be familiar with and respecting the ethics and ethical standards of using genetic engineering tools
3- Course contents:

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<tr>
<td><strong>1. MHC-restricted antigen presentation</strong></td>
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<td>- Molecular interactions between the T cell</td>
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<td><strong>2. Dendritic cell function</strong></td>
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<td>- Adaptive vs Innate immunity</td>
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<td>- Toll receptors</td>
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<td><strong>3. Adhesion molecules and Homing</strong></td>
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<td>- Cytokines: function and regulation</td>
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<td>- Signaling events in B cell activation</td>
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<td>within germinal centers</td>
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<td><strong>7. Effector Functions of B and T cells</strong></td>
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<td>- Intracellular and extracellular pathogen</td>
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<td>- Definition of protective immunity</td>
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<td>- T cell and B cell effector function and</td>
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<td>- T cell memory</td>
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<td><strong>8. Mechanisms and Genes of Cellular Suicide</strong></td>
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<td>- Apoptotic cell death as an effector component of the immune system</td>
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<td>**9. The Genetic and Environmental Basis of</td>
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<td>- Role of T cell subsets</td>
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<td><strong>10. Immune Aspects of Gene Therapy</strong></td>
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<td><strong>11. Reproduction and the immune system</strong></td>
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<td><strong>13. Immunology of neurological diseases</strong></td>
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</table>

**L: Lecture  P: Practical  F: Field training and SDL: Self directed learning**

**4 - Student Assessment Methods:**

- Written exam. to assess knowledge and intellectual skills

**5 - Weighing of Assessment:**

Written exam  90 marks

**6 -- List of References**

6.1 Essential Books (Text Books)

- Cellular and Molecular Immunology, Abul K. Abbas, Andrew H. Lichman. Elsevier Science (USA).

6.2 Recommended Books

- Medical Immunology, Tristram G. Parslow, Daniel P. Sites, Abba I. Terr and John B. Imboden. McGRAW- Hill Companies, Inc.
- Fundamental Immunology, Paul, William E. Lippincott Williams & Wilkins
Elective courses:

1- Medical and Research Ethics Course:

University: Ain Shams University  
Faculty: of Medicine

Course specifications
Program on which the course is given: Master of Science Degree in Medical Microbiology and Immunology
Major or minor element of programs: Minor

Department offering the program: Medical Microbiology and Immunology Department

Department offering the course: Medical Microbiology and Immunology Department

Academic Level: 6th semester

Date of specification approval: July 2009

A- Basic Information

Title: Medical and Research Ethics Course
Code: E7050
Credit Hours: 2
Coordinator: Medical Microbiology and Immunology Department

B - Professional Information

1- Course Aim:

- To foster candidates commitment to ethical standards of medical practice to be able to protect the dignity, rights and welfare of patients, patients' families and staff.
- To enable the candidate to plan and conduct a medical research in his specific field complying with legal and ethical aspects of medical research.

2- Intended Learning Outcomes (ILOs) from the Course:

a- Knowledge and understanding
By the end of the course the candidate will be able to:

a1- Define key terms of medical and research ethics.
a2- Recognize the principles and importance of medical ethics that guide the doctor-patient and doctor-doctor relationship in different levels of health care services and their impact on the patient, physician, family and community.
a3- Define Professionalism, misconduct in science, Fabrication, Falsification, Plagiarism
a4- Identify ethical dilemma encountered in routine medical and research practice
a5- Outline the social and moral dimensions of ethical dilemmas in healthcare
a6- Describe the framework of solving ethical dilemmas in medical and research practice
a7- Explain ethical aspects of medical research including those specifically applied to clinical trials
a8- Discuss the medico legal legislations in Egypt and its impact on medical and research practice.
a9- Recognize the developments in ethics and their implications on medical and research practice.
a10- Demonstrate how ethical issues specifically affect physicians, patients, and patients' families.
a11- Demonstrate critical awareness and detailed knowledge of current ethical issues in their close area of professional practice
a12- Describe the threats to medical professionalism, and common medical errors, which can occur during practice of medicine

b- Intellectual skills

By the end of the course the candidate will be able to:
b1- Interpret new knowledge, principally through the production of their own research theses to be good enough to satisfy peer review and to merit publication
b2- Integrate information on medical and research ethics principally through the production of their own research theses, that they are able to conceptualize, design and implement a project for the generation of new knowledge and to adjust the project design in the light of unforeseen problems
b3- Critically appraise research articles, and interpret and assess the methodology applied in light of medical research ethics.
b4- Comprehend, analyze and interpret texts (including both official policy documents and moral-philosophical material) in the area of medical ethics
b5- Assess critically the cogency of ethical arguments and to formulate and defend their own substantially independent arguments and positions on major topics in medical ethics

**c- Professional skills**

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

c1- Solve some common ethical dilemmas based on the framework and personnel experience

c2- Balance between professional and personal demands and anticipate the situations that might damage this balance and seeks to minimize its adverse effects.

c3- Provide appropriate counseling in different situations.

c4- Support safe medical practice through early recognition, reporting and correction of medical errors.

c5- accept constructive feedback and respond appropriately.

c6- Show appropriate professional attitudes with the patients, patients' family and staff including empathy, trust worthiness, respect for the dignity, and privacy.

c7-- Demonstrate originality in the application of knowledge, together with a practical understanding of how established techniques of research and enquiry are used to create and interpret knowledge in medical ethics

c8- Devise, manage, and execute an independent scheme of research

c9-Comply with and implement all moral criteria and guidelines as well as the social and religious values laid down by the competent authority for conducting medical research on human beings.

c10- comply with fully informing the volunteers in a clear way of the targets of the research, the research approaches which will be used in it, the benefits expected therefrom, the probable risks and the extent of their effect on the volunteers.

c11- comply with obtaining a written consent (built on knowledge) from the volunteer to conduct the research on him officially in the presence of a prosecution witness.

c12- Respect the right of the volunteer to cease his voluntariness to conduct the experiments and research or the full withdrawal from the research without sustaining any negative consequences as a result of his cessation or withdrawal must be emphasized.

c13- Prepare a detailed and clear report on the targets of the research and the justifications for conducting it on human beings. This report shall be submitted to the quarter legally competent with approving to conduct the research in order to obtain such approval.

c14- guarantee the privacy of the individuals, the secrecy of the results and keeping them as well as minimizing the negative effects on the physical, mental and psychological safety of the volunteers
c15- Exercise appropriate caution in the conduct of medical research that may harm the environment.

C16- Conduct properly medical research using identifiable human material or data, by seeking consent for the collection, analysis, storage and/or reuse. In situations where consent would be impossible or impractical to obtain for such research or would pose a threat to the validity of the research, research may be done only after consideration and approval of a research ethics committee.

**d- General and transferable skills**

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

d1 - Work effectively in a team from different backgrounds, either as a member or a leader, accepting principles of collective responsibility, and to consult colleagues when appropriate.

d2 - Respects the role of staff and co-staff members regardless of degree or occupation.

d3 - Communicate effectively with professional microbiologists and wider medical community

d4 - Present their own research thesis through written and oral presentations

d5 - Learn independently with open-mindedness and critical enquiry.

**3- Course Contents**

<table>
<thead>
<tr>
<th>TOPICS</th>
<th>HOURS</th>
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<tbody>
<tr>
<td><strong>L</strong></td>
<td><strong>C/P</strong></td>
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<tr>
<td>1. Introduction to medical and research ethical principles</td>
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<tr>
<td>2. Ethical theories and how they apply to medical and research practice</td>
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<tr>
<td>3. Ethical reasoning</td>
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<td>4. Belmont report and the code of medical ethics</td>
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<tr>
<td>5. Framework for recognition and solving ethical dilemmas</td>
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<tr>
<td>6. Real ethical scenarios</td>
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</tbody>
</table>

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

4-1 Written exam to assess knowledge and understanding and will concentrate on problem solving questions

4-2 Weighing of assessment
   Written exam 100

5 - List of References
2- Medical statistics course specification
University: Ain Shams University  Faculty: of Medicine

Course specifications
Program on which the course is given: Master of Science Degree in Medical Microbiology and Immunology

Major or minor element of programs: Minor

Department offering the program: Medical Microbiology and Immunology Department

Department offering the course: Community, Environmental and Occupational Medicine

Academic Level: 6th semester

Date of specification approval: ......July 2009.........................

A- Basic Information

Title: Medical statistics course
Code: E7024
Credit Hours: 2 hours
Coordinator: Community, Environmental and Occupational Medicine Department

B - Professional Information

1- Course Aim:

To enable the 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.

2- Intended Learning Outcomes (ILOs) from the Course:

a- Knowledge and understanding
By the end of the course the candidate will be able to:
a1 - Define medical statistics and identify uses and importance of medical statistics in medical research
a2 – 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:
b1 - Interpret correctly the results of statistical analyses and critically evaluate the use of statistics in the medical literature.
b2 - Integrate and evaluate information from a variety of sources.

c- Professional skills

By the end of the course the candidate will be able to:
c1 - 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.
d- General and transferable skills

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

d1 - Work effectively in a group from different backgrounds.

d2 - Respects the role of staff and co-staff members regardless of degree or occupation.

d3 - Communicate effectively with professional statisticians and the wider medical community, including the ability to present results of statistical analyses through written and oral presentations.

d4 - Use of computer data bases and other computer skills.

d5 - Handle data appropriately and analyze them through: decision processes, objective criteria, problem definition, project design and evaluation, risk management, teamwork and coordination.

d6 - Learn independently with open-mindedness and critical enquiry.

3- Course content:

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<thead>
<tr>
<th>Topics</th>
<th>Hours</th>
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<tr>
<td></td>
<td>T</td>
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<tr>
<td>1. Introduction to medical statistics and its uses</td>
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<td></td>
<td>Types of variables and Descriptive statistics</td>
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<td>Graphic presentation of data</td>
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<tr>
<td>2. Introduction to probability theory and rules</td>
<td>2</td>
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<td>3. Sample and population: sampling distribution of mean and proportion</td>
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<td>4. Confidence interval of a mean and a proportion</td>
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<td>Confidence interval of a difference between two mean/ proportion</td>
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<td>5. Testing a hypothesis about population mean/proportion</td>
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<td>6. Testing a hypothesis about the difference between two means/proportion</td>
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<tr>
<td>7. Comparing between more than two means-Introduction to factorial analysis</td>
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<tr>
<td>8. Cross-tabulation and introduction to categorical data analysis</td>
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<td>9. Simple correlation and simple regression</td>
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<tr>
<td>10. Introduction to multivariable and multivariate analysis</td>
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</tbody>
</table>
11. Study designs: observational studies
   Study designs: Intervention studies: clinical trials
   Study designs: Experimental animal studies
   Study designs: Bias and Confounding

12. Ethical issues in medical research

13. Sample size estimation for continuous and binary outcome measures.


T: Tutorial and C/P: Clinical or Practical and SDL: Self directed learning

4 - Student Assessment Methods

4-1 Written exam to assess knowledge and understanding and will concentrate on problem solving questions

4-2 Weighing of assessment
   Written exam 100

5 - List of References

5.1- 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.

5.2- Essential Books (Text Books)

5.3- Recommended Books
   Handbook of Epidemiology. Springer 2005

5.4- Periodicals, Web Sites, etc
   - www.brettscaife.net/statistics/introstat/
   - onlinestatbook.com/rvls/
   - www. Epidemiolog.net
   - http://www.shef.ac.uk/scharr/spss/
Medical laws Course specifications

Program on which the course is given: Master Science in Nephrology
Major or minor element of programs: Major
Department offering the program: Internal Medicine department Nephrology Division
Department offering the course: Internal Medicine department Nephrology Division
Academic Level: 6th semester
Date of specification approval: .................July 2009.................

A- Basic Information

Title: Medical ethics course Code: E7043
Credit Hours: 2 hours Lecture: 2h/week Total: 30

Coordinator
Public health department

B - Professional Information

1- Course Aims:
The aim of this course is to know both the doctors and patient rights

2- Intended Learning Outcomes (ILOs) from the Course:

a- Knowledge and understanding
   By the end of the course the candidate will be able to:
   a1-Take patient consent for examination, intervention and therapy
   a2-Protect staff members, people and environment inside and outside the institute

d- General and transferable skills

By the end of the course the candidate will be able to:
   d1- Communication Skills:
   d1-1- Patient-Doctor Relationship:
   d1-2 - Demonstrate respect to all patients irrespective of their socioeconomic levels, culture or religious beliefs and use language appropriate to the patient’s culture (P.ILO. 34).
d2-Collaboration with healthcare professionals: Communicate effectively with other health care professionals to maximize patient benefits and minimize the risk of errors.

d3- Life-long learning:
d3-1 Understand the importance of life-long self-learning and show a strong commitment to it.

d4-Ethical behavior:
d4-1 Respect patient’s beliefs, values and privacy (P.ILO 63 and 64).
d4-2. Recognize and effectively deal with unethical behavior of other members of healthcare team

Course content:

<table>
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<tr>
<th>Topics</th>
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<td>قانون رقم ١٥ لسنة ١٩٤٩ في شأن مزاولة مهنة الطب</td>
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<td>قانون تنظيم المنشآت الطبية</td>
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<td>قانون نقابة الأطباء</td>
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<td>قانون بتنظيم إدارة المؤسسات العلاجية</td>
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<td>لائحة أداء مهنة الطب</td>
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<td>الاضطرابات المزمنة موجودة في المجتمع</td>
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<td>الاضطرابات المزمنة موجودة في المجتمعات العلاجية</td>
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<td>بتنظيم إجراءات الترخيص للخبراء الأجاني في مجال الطب و الجراحة</td>
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<td>في شأن إعادة تنظيم مزاولة مهنة تجهيز النظامات الطبية وبيعها في إقليمي الجمهورية</td>
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<tr>
<td>في شأن تنظيم المؤسسات العلاجية والاضطرابات العامة الواجب توافرها في المؤسسات العلاجية</td>
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<td>في شأن قواعد تكليف الأطباء البشريين</td>
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<td>تنظيم استيراد واستخدام أجهزة الليزر في الأغراض الطبية</td>
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<td>بحظر ختان الإناث</td>
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</table>

L: Self directed learning
4 - Student Assessment Methods
4.1 written exam to assess knowledge, skills

Weighing of assessment
4.1 written exam 100

5 -- List of References
5.1- Course Notes (paper and / or electronic)
None
5.2- Essential Books (Text Books)
5.3- Recommended Books
# Modules

## 1st semester:

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
<th>Credit hours</th>
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</thead>
<tbody>
<tr>
<td>Applied Medical Microbiology and Infection control</td>
<td>MI7001 Section 1 (1.1-1.5)</td>
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<tr>
<td>Applied Medical Virology</td>
<td>MI7002 (1-7)</td>
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## 2nd semester:

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<th>Course</th>
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<tbody>
<tr>
<td>Applied Medical Microbiology and Infection control</td>
<td>MI7001 Section 1 (1.6-1.11)</td>
<td>5.6</td>
</tr>
<tr>
<td>Applied Medical Virology</td>
<td>MI7002 (8-14)</td>
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## 3rd semester:

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<th>Course</th>
<th>Code</th>
<th>Credit hours</th>
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</thead>
<tbody>
<tr>
<td>Applied Medical Microbiology and Infection control</td>
<td>MI7001 (2-6)</td>
<td>5.3</td>
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<tr>
<td>Applied Medical Immunology</td>
<td>MI7003 (1-15)</td>
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## 4th semester:

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<tr>
<th>Course</th>
<th>Code</th>
<th>Credit hours</th>
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<tbody>
<tr>
<td>Applied Medical Microbiology and Infection control</td>
<td>MI7001 (7-9.1)</td>
<td>5.7</td>
</tr>
<tr>
<td>Applied Medical Immunology</td>
<td>MI7003 (16-19)</td>
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## 5th semester:

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<tr>
<th>Course</th>
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<th>Credit hours</th>
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</thead>
<tbody>
<tr>
<td>Applied Medical Microbiology and Infection Control</td>
<td>MI7001 section 9 (9.2-9.4)</td>
<td>4.2</td>
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### 6th semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
<th>Credit hours</th>
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<tbody>
<tr>
<td><strong>2. Only one Advanced course of the following:</strong></td>
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<tr>
<td>• Advanced Medical Microbiology and Infection control</td>
<td>MI7004</td>
<td>2</td>
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<tr>
<td>• Advanced Medical Virology</td>
<td>MI7005</td>
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<tr>
<td>• Advanced Medical Immunology</td>
<td>MI7006</td>
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<tr>
<td><strong>3. Only one elective course of the following:</strong></td>
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<tr>
<td>• Medical and Research Ethics</td>
<td>E7050</td>
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<tr>
<td>• Medical and research Statistics</td>
<td>E7024</td>
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<tr>
<td>• Medical Laws</td>
<td>E7043</td>
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</table>
V. GENERAL INFORMATION

1. 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 -------------------------. If exposure occurs after regular working hours or during a weekend or holiday; please call the ------------------------------.
   For injury, please report to the Emergency Department.
   Please also be sure to inform the supervisors of an exposure incident and/or injury.

3. ACTION ON 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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VI – 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 or
2. Tutorials
or
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 (According to each degree)
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.

2 - Supervisors

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3–Tables for Training Records
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.
Medical Microbiology, Immunology and Infection Control
Conferences attendance
(NB. Minimum number required is 6)

<table>
<thead>
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<th>No</th>
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<th>Topics</th>
<th>Supervisor signature</th>
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Department Weekly Seminars Attendance
(NB. Minimum number required is 20)

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## Department Weekly Seminars Presentation
(NB. Minimum number required is 6)

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

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Web CME certificates in the field of Medical Microbiology, Immunology and Infection Prevention and Control
(NB. Minimum number required is 20)

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</tbody>
</table>
### Practical Skills
#### I. Microbiological Workup of Infectious Syndromes
(Minimum number is 3 for each)

<table>
<thead>
<tr>
<th>Infectious syndrome</th>
<th>1ˢᵗ</th>
<th>2ⁿᵈ</th>
<th>3ʳᵈ</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Blood stream infections</td>
<td>Supervisor sig./date</td>
<td>Supervisor sig./date</td>
<td>Supervisor sig./date</td>
</tr>
<tr>
<td>2. Upper respiratory tract infections</td>
<td></td>
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<tr>
<td>4. Lower respiratory tract infections</td>
<td></td>
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<tr>
<td>5. Meningitis and other infections of CNS</td>
<td></td>
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<tr>
<td>6. Infections of eyes, ears and sinuses</td>
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<tr>
<td>7. Urinary tract infections</td>
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<tr>
<td>8. Genital tract infections</td>
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<tr>
<td>9. Gastrointestinal tract infections</td>
<td></td>
<td></td>
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<tr>
<td>10. Skin, soft tissue and wound infections</td>
<td></td>
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</tbody>
</table>
## II. Unit Specific Infection Control Field Training

<table>
<thead>
<tr>
<th>Observation structure and audit process related to</th>
<th>Site/sig of unit head/date</th>
<th>Final reporting and discussion with senior staff/ sig./date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating rooms (OR)</td>
<td></td>
<td></td>
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<tr>
<td>Intensive care units (ICU)</td>
<td></td>
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<tr>
<td>Neonatal ICU</td>
<td></td>
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<tr>
<td>Dentistry unit</td>
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<tr>
<td>Hemodialysis unit</td>
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<tr>
<td>Endoscopy unit</td>
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</tr>
</tbody>
</table>
### III. Device related infection case studies
(Minimum number is 3 for each)

<table>
<thead>
<tr>
<th>Case</th>
<th>1&lt;sup&gt;st&lt;/sup&gt; Case presentation and discussion: Date/supervisor sig.</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt; Case presentation and discussion: Date/supervisor sig.</th>
<th>3&lt;sup&gt;rd&lt;/sup&gt; Case presentation and discussion: Date/supervisor sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ventilator associated pneumonias (VAP)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2. Intra vascular catheter related Infections (IVCRIs)</td>
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<tr>
<td>3. Surgical site infection (SSI)</td>
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<tr>
<td>4. Catheter related urinary tract infections (CRUTIIs)</td>
<td></td>
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</tbody>
</table>
IV. Surveillance Field Training

Incidence of **ONE** of the following indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Data collection Data/Sig.</th>
<th>Data compiling Data/Sig.</th>
<th>Data analysis Data/Sig.</th>
<th>Data interpretation Data/Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ventilator associated pneumonia (VAP)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2. Intra vascular catheter related Infections (IVCRIIs)</td>
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<tr>
<td>3. Surgical site infection (SSI)</td>
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<tr>
<td>4. Catheter related urinary tract infections (CRUTIs)</td>
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</tbody>
</table>
V. Applied Medical Immunology Field Training
(Minimum 10 cases including at least one of each of:
Allergic diseases, Immunodeficiency disorders, Systemic
autoimmune disorders, Organ specific autoimmune diseases,
Lymphocyte and plasma cell malignancies)

<table>
<thead>
<tr>
<th>Case</th>
<th>Name of clinic and location</th>
<th>Patient data</th>
<th>Case presentation and discussion: Date/supervisor sig.</th>
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</thead>
<tbody>
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</tbody>
</table>
VI. Applied Medical Virology Field Training  
(Minimum 6 cases of different viral infections)

<table>
<thead>
<tr>
<th>Case</th>
<th>Name of clinic and location</th>
<th>Patient data</th>
<th>Case presentation and discussion: Date/supervisor sig.</th>
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<tbody>
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</tbody>
</table>
VII. Infection Control Field Training for ADVANCED COURSE  
(Special Settings)

<table>
<thead>
<tr>
<th>Observation of structure and audit process related to</th>
<th>Site/sig of unit head/date</th>
<th>Final reporting and discussion with senior staff/ sig./date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laundry</td>
<td></td>
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<tr>
<td>Dietary services</td>
<td></td>
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<tr>
<td>Central sterilization services</td>
<td></td>
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<tr>
<td>Burn unit</td>
<td></td>
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<tr>
<td>Hospital Emergency</td>
<td></td>
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<tr>
<td>Imaging Services</td>
<td></td>
<td></td>
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<tr>
<td>Onchology unit</td>
<td></td>
<td></td>
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<tr>
<td>Hospital pharmacy</td>
<td></td>
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<tr>
<td>Geriatric medicine unit</td>
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</tbody>
</table>
VIII. Infection Control Field Training for ADVANCED COURSE  
(Multidrug resistance case studies)  
(Minimum number is 5)

<table>
<thead>
<tr>
<th>case</th>
<th>Final reporting and discussion with senior staff/ sig./date</th>
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<tbody>
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</tbody>
</table>
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

<table>
<thead>
<tr>
<th>Semester Activities</th>
<th>1\textsuperscript{st}</th>
<th>2\textsuperscript{nd}</th>
<th>3\textsuperscript{rd}</th>
<th>4\textsuperscript{th}</th>
<th>5\textsuperscript{th}</th>
<th>6\textsuperscript{th}</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical Microbiology, Immunology and Infection Control Conferences attendance (6)</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
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<tr>
<td>Department Weekly Seminars attendance (20)</td>
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<tr>
<td>Department Weekly Seminars preparation and presentation (6)</td>
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<tr>
<td>Thesis attendance (10)</td>
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<tr>
<td>Web CME certificates (20)</td>
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<tr>
<td>Microbiological Workup of Infectious Syndromes (30 specimens)</td>
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<tr>
<td>Unit Specific Infection Control Field Training (6 units)</td>
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<tr>
<td>Device related infection case studies (12 cases)</td>
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<tr>
<td>Surveillance study stage</td>
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<tr>
<td>Applied Medical Immunology Field training (10 cases)</td>
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<tr>
<td>Applied Medical Virology Field training (6 cases)</td>
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<tr>
<td>Infection Control Field Training for ADVANCED COURSE (Special Settings) (9)</td>
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<tr>
<td>Infection Control Field Training for ADVANCED COURSE (Multidrug resistance case studies) (6)</td>
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</tbody>
</table>
VII - HEAD OF DEPARTMENT APPROVAL FOR THE EXAM ENTRY
VIII – THESIS FOLLOW UP

التقرير النصف السنوي لعام /
عن الطالب /
القيد لدرجة ( ماجستير / الدكتوراه ) / بقسم /

تقرير السنة الإضافية المشرفون

جمع المادة العلمية و كتابة المقدمة

قطع شوطا محدودا

بدأ □ 

أوشك على الانتهاء □

إنتهى من الجماع □

الجزء العملي

قطع شوطا محدودا

بدأ □

أوشك على الانتهاء □

إنتهى من التحليل □

مناقشة النتائج

قطع شوطا محدودا

بدأ □

أوشك على الانتهاء □

إنتهى من التحرير □

المراجعة النهائية مع المشرف

قطع شوطا محدودا

بدأ □

أوشك على الانتهاء □

إنتهى تماما □

رأى السنة المشرفون

مد القياد □

إستمرار قيد الطالب □

شطب قيد الطالب □

تم تشكيل لجنة المناقشة /

نعم لا 

تاريخ التشكيل /

مد / شطب القياد
VIII – THESIS FOLLOW UP

التقرير النصف السنوي لعام / عن الطالب / القيد لدرجة ( ماجستير / الدكتوراة ) / بقسم /

تقرير السنة الاساتذة المشرفون

جمع المادة العلمية وكتابة المقدمة

- بداية
- انتهاء من الجمع

الجزء العملي

- بداية
- انتهاء من التحليل

مناقشة النتائج

- بداية
- انتهاء من التحرير

المراجعة النهائية مع المشرف

- بداية
- انتهاء تماما

رأى السنة المشرفون

- مر القيد
- تم تشكيل لجنة المناقشة

- لا

تاريخ التشكيك / نعم

/ شطب القيد / مر القيد / شطب القيد
VIII – THESIS FOLLOW UP

التقرير النصف السنوي لعام / عن الطالب / الرائد لدرجة ( ماجستير / الدكتوراة ) / بقسم /

تقرير السنة الاستاذة المشرفون

جمع المادة العلمية وكتابة المقدمة

- □ بدأ □ أشلك على الانتهاء □ إنتهى من الجمع

الجزء العملي

- □ بدأ □ أشلك على الانتهاء □ إنتهى من التحليل

مناقشة النتائج

- □ بدأ □ أشلك على الانتهاء □ إنتهى من التحرير

المراجعة النهائية مع المشرف

- □ بدأ □ أشلك على الانتهاء □ إنتهى تماما

رأي السنة المشرفون

- □ إستمرار قيد الطالب □ شطب قيد الطالب □

تم تشكيل لجنة المناقشة / تاريخ التشكيل /

نعم / لا

مد / شطب القيد

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VIII – THESIS FOLLOW UP

التقرير النصف السنوي لعام /
عن الطالب /
القيد لدرجة ( ماجستير / الدكتوراة )
قسم /

تقرير السنة الاساتذة المشرفون

جمع المادة العلمية و كتابة المقدمة

أوشك على الانتهاء

الجزء العملي

أوشك على الانتهاء

مناقشة النتائج

أوشك على الانتهاء

المراجعة النهائية مع المشرف

أوشك على الانتهاء

رأى السنة المشرفون

مد القياد

استمرار قيد الطالب

شطب قيد الطالب

تم تشكيل لجنة المناقشة

نعم لا

تاريخ التشكيل /

مد / شطب القياد

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VIII – THESIS FOLLOW UP

التقرير النصف السنوي لعام
عن الطالب
القيد لدرجة ( ماجستير / الدكتوراه )
بقسم

قرر السيد الإساتذة المشرفون

جمع المادة العلمية و كتابة المقدمة

تابع شوطا محدودا
بegan □
انتهى من الجمع □
أوشك على الإنتهاء □

الجزء العملي

تابع شوطا محدودا
بegan □
انتهى من التحليل □
أوشك على الإنتهاء □

مناقشة النتائج

تابع شوطا محدودا
بegan □
انتهى من التحرير □
أوشك على الإنتهاء □

المراجعة النهائية مع المشرف

تابع شوطا محدودا
بegan □
انتهى تماما □
أوشك على الإنتهاء □

رأى السيد المشرفون

مدد القيد □

تم تشكيل لجنة المناقشة

لام

فاريخ التشكيل □

مدد / شطب القيد

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VIII – THESIS FOLLOW UP

التقرير النصف السنوي لعام / عن الطالب / القيد لدرجة ( ماجستير / الدكتوراة ) / بقسم /

تقرير السنة الإساتذة المشرفون

جمع المادة العلمية و كتابة المقدمة

- بدأ
- إنهي من الجمع
- أشك على الإنتهاء

الجزء العملي

- بدأ
- إنهي من التحليل
- أشك على الإنتهاء

مناقشة النتائج

- بدأ
- إنهى من التحرير
- أشك على الإنتهاء

المراجعة النهائية مع المشرف

- بدأ
- إنهت تماما

رأى السنة المشرفون

- تم تشكيل لجنة المناقشة
- لا

تاريخ التشكيك / نعم
- / لا
- شطب القيد
- شطب القيد

87
VIII – EVALUATION FORMS

To be completed at -------------------------------------

Candidate
Supervisor
Location

Aim of training

Agreed educational objectives and timescale in which objectives should be achieved.

Comments by Candidate

Comments by Supervisor

Date of next meeting

Signed by candidate
Signed by Supervisor
Date
VIII – EVALUATION FORMS

To be completed at -------------------------------------

Candidate
Supervisor
Location

Aim of training
__________________________________________________________________
__________________________________________________________________
__________________________________________________________________

Agreed educational objectives and timescale in which objectives should be
achieved.
__________________________________________________________________
__________________________________________________________________
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Comments by Candidate
__________________________________________________________________
__________________________________________________________________
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Comments by Supervisor
__________________________________________________________________
__________________________________________________________________
__________________________________________________________________

Date of next meeting

Signed by candidate
Signed by Supervisor
Date
VIII – EVALUATION FORMS

To be completed at -------------------------------------

Candidate
Supervisor
Location

Aim of training
__________________________________________________________________
__________________________________________________________________
__________________________________________________________________

Agreed educational objectives and timescale in which objectives should be achieved.
__________________________________________________________________
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Comments by Candidate
__________________________________________________________________
__________________________________________________________________
__________________________________________________________________

Comments by Supervisor
__________________________________________________________________
__________________________________________________________________
__________________________________________________________________

Date of next meeting

Signed by candidate
Signed by Supervisor
Date
VIII – EVALUATION FORMS

To be completed at -------------------------------------

Candidate  
Supervisor  
Location

Aim of training
__________________________________________________________________
__________________________________________________________________
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Agreed educational objectives and timescale in which objectives should be achieved.
__________________________________________________________________
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Comments by Candidate
__________________________________________________________________
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Comments by Supervisor
__________________________________________________________________
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__________________________________________________________________

Date of next meeting

Signed by candidate

Signed by Supervisor

Date
VIII – EVALUATION FORMS

To be completed at -----------------------------

Candidate
Supervisor
Location

Aim of training

________________________________________________________________________
________________________________________________________________________

Agreed educational objectives and timescale in which objectives should be achieved.

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Comments by Candidate

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Comments by Supervisor

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Date of next meeting

Signed by candidate
Signed by Supervisor
Date


Degree Program Evaluation Form By The Candidate
Please consider each pair of statements and decide which most clearly reflects your view and tick one box or answer the question.

I. Individual Information
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?
   □ yes □ no □ to some degree

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?
   □ yes □ 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?
VIII – EVALUATION FORMS

To be completed at ------------------------------

Candidate
Supervisor
Location

Aim of training

__________________________________________________________________
__________________________________________________________________
__________________________________________________________________

Agreed educational objectives and timescale in which objectives should be achieved.

__________________________________________________________________
__________________________________________________________________
__________________________________________________________________

Comments by Candidate

__________________________________________________________________
__________________________________________________________________
__________________________________________________________________

Comments by Supervisor

__________________________________________________________________
__________________________________________________________________
__________________________________________________________________

Date of next meeting

Signed by candidate
Signed by Supervisor
Date
4. In your opinion, does the degree program offer a good balance of lectures, seminars, conferences, and book exams?
   □ yes □ no □ 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)?
   □ 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. Concluding Points**
1. Did the degree program meet your expectations?
   □ yes □ no □ to some degree

2. What aspects of the degree program do you particularly like?

3. What aspects of the degree program do you particularly dislike?

4. What are your suggestions on how to improve the program?

Thank you!