



ANDROLOGY COURSE SPECIFICATION

MD Dermatology, Andrology and STDs

Faculty of Medicine- Mansoura University

(A) Administrative information

(1) Programme offering the course.	MD Dermatology, Andrology and STDs
(2) Department offering the programme.	Dermatology, Andrology and STDs
(3) Department responsible for teaching the course.	Dermatology, Andrology and STDs
(4) Part of the programme.	Second part
(5) Date of approval by the Department's council	3/4/2016
(6) Date of last approval of programme specification by Faculty council	
(7) Course title.	Andrology
(8) Course code.	DERM 615 AST
(9) Credit hours	12 lectures 7.5 clinical
(10) Total teaching hours.	180 lectures 225 clinical

(B) Professional information

(1) Course Aims:

The broad aims of the course are as follows:

- 1- Provides MD students with advanced and detailed knowledge about most cases of erectile dysfunction (ED) and male infertility.
- 2- Provides MD students with detailed andrologic clinical skills such as obtaining a patient's full history, full clinical examination of male and female genital system.
- 3- Learns MD students to classify the different causes of ED and male infertility and make an appropriate differential diagnosis.
- 4- Learns MD students how to perform certain diagnostic tests like microscopic and computerized examination of semen and prostatic fluid, testicular biopsy, intracavernosal injection (ICI), Rigiscan monitoring of penile erections, and Doppler exam for varicocele, assessment of nerves and vessels.
- 5- Makes MD students Be able to do certain therapeutic procedures like: semen processing, correction of priapism, tactical sperm extraction (TESE) and percutaneous sperm aspiration (PESA)
- 6- Learns MD students how to Propose treatment strategies for most cases ED and male infertility
- 7- Provides MD students with the ethical attitude in general and towards patients, relatives, seniors, tutors and colleagues.
- 8- Learns MD students how to adopt a scientific way of thinking even in the presence of administrative or logistic limitations.
- 9- Learns MD students how to recognize the importance of scientific research and how to conduct a community service
- 10- Learns MD students how to develop a point for clinical trial and how to lead a research team.

(2) Intended Learning Outcomes (ILOs):

On successful completion of the course, the candidate will be able to:

A- Knowledge and Understanding

A1- Recognize Physiology of Testicular Function, Sperm Maturation and Fertilization.

A2- Outline the Classification of Andrological Disorders

A3- Explain techniques, results and indications of different diagnostic methods:

1. Imaging Diagnostics
2. Endocrine Laboratory Diagnosis.

3. Cytogenetic and Molecular Genetic Investigations.
4. Semen Analysis.
5. Sperm Quality and Function Tests
6. Testicular Biopsy and Histology.

A4- Describe Normal and Abnormal pubertal development.

A5- Explain the etiology, pathogenesis, diagnosis, differential diagnosis and management of Diseases of the Hypothalamus and the Pituitary Gland.

A6- Discuss etiology, pathogenesis, diagnosis, differential diagnosis and management of Disorders affecting male fertility at the Testicular Level.

A 7- Explain etiology, pathogenesis, diagnosis, differential diagnosis and management of Disorders affecting male fertility at the level of Androgen Target Organs.

A8- Outline etiology, pathogenesis, diagnosis, differential diagnosis and management of the Diseases of the Seminal Ducts.

A 9- Describe Testicular Dysfunction in Systemic Diseases and Iatrogenic factors and effect of STDs on male infertility.

A10–Describe different types of treatment of male infertility

A11- Identify Male contribution to contraception.

A12- Recognize etiology, pathogenesis, diagnosis, differential diagnosis and management of Andrological emergencies.

A13- Explain the Psychology and physiology of sexual desire, arousal and response regarding the following subjects:

- a. Central nervous mechanisms
- b. Role of hormones
- c. Genital responses
- d. Orgasm, emission and ejaculation

A14- Describe Ageing and Sexuality regarding:

- a. The effect of physiological, psychological and social factors throughout life
- b. Changes in sexuality throughout life

A15- Recognize Sexual Dysfunctions in men and women regarding:

- a. Definitions and classification
- b. Epidemiology, pathophysiology and risk factors
- c. Differentiation between sexual dysfunction and short term, or transient, alterations of sexual function.
- d. Diagnosis and treatment of sexual dysfunctions.

A16- Identify the etiology, pathogenesis, diagnosis, differential diagnosis and management of deviant sexual behaviour.

A17- Outline different Gender Identity Disorders.

A 18- Recognize the clinical management of sexual disorders regarding:

1. Principles
 - i. Evidence based medicine
 - ii. Combination of psychosomatic and somato-medical approach
 - iii. Interdisciplinarity
 - iv. Patient and couple centered
2. Methods
 - i. Establishing a sexual medicine clinic
 - ii. Counselling, Sex therapy, Psychotherapy
 - iii. Pharmacological
 - iv. Physical and surgical

A 19-Discuss the History, socioeconomic impact, and epidemiology of sexually transmitted infections

A 20- Recognize the Social and psychological dimensions of sexuality and Profiles of vulnerable populations to STDs

A 21-Identify Host immunity and molecular pathogenesis and STDs.

A 22- Describe the Overview of STDs care management including the following:

1. STDs care management .
2. Individual-level risk assessment for sexually transmitted infections, including HIV
3. Anatomy and physical examination of the genital tract
4. Principles of treatment of sexually transmitted diseases .
5. principles of laboratory diagnosis of STDs
6. Individual, couple, and small-group interventions.
7. Management of STIs syndromes in women
 - a. lower genital tract infection syndromes in women
 - b. Pelvic inflammatory disease
8. Management of STIs syndromes in men
 - a. -Urethritis in males .
 - b. -Epididymitis .
 - c. -Prostatitis syndromes .

A 23 – Outline STDs in reproductive health and pediatrics as follow:

1. -Sexually Transmitted Diseases and male Infertility .
2. -Sexually Transmitted Infections and Pregnancy outcome
3. -Child Sexual Abuse and STDs

A 24- Recognize special medical, legal, and social issues:

1. Sexual Assault and STDs .
2. Legal and Political Aspects of STIs Prevention:
3. -Ethical Challenges of the Global AIDS Epidemic
4. -Information and Communication Technologies for Prevention and Control of STDs .

A25 -Discuss the stages of

1. Sperm formation
2. DNA synthesis
3. Nuclear proteins synthesis.

A26- Recognize the following:

1. Evolutionary biology of spermatozoa
2. Correlation between Spermatozoa and human fertility

A27- Explain Signaling and sperm functions

A28 -Identify Sperm-egg interaction and Epigenetics of fertilization

A29- Outline Sperm motility and Manipulation of sperm cells

A30- Describe anatomy and physiology of accessory sex glands and role of secreted fluids in sperm function

A31-Discuss the Introduction and History of sexual psychology

A32- Recognize the Theoretical Perspectives of sexual psychology.

A33- Explain different Theories of Sexuality

A34-Identify Homosexuality, Bisexuality, Transgender

A35 - Describe the Evolutionary Psychology and Feminism

A36- Outline the Advances in

1. Sex Therapy
2. Behavioral therapy
3. Couple therapy.
4. Re-orientation therapy

A37-Recognize different stages and recent advances in explanation of Development of urogenital system

A38- Explain the different aspects of:

- a) Molecular embryology of Development of urogenital system
- b) Preimplantation genetic diagnosis and its applications.

A39 - Discuss the following:

1. Genetic factors and hormones that determine gender
2. Recent advances in sex determination and embryo selection in ICSI

B- Intellectual skills

B 1- Interpret clinical data on approaching different andrology cases.

B 2- Summarize the appropriate tests to diagnose a case with andrologic problem.

B 3- Analyze data obtained from history, clinical examination and laboratory reports to approach andrology cases management.

B 4- Prioritize the different patient's problem and Set up an appropriate algorithm for these problems management.

B 5- Plan a safe treatment strategy after discussion with the patient or a relative.

B6- Differentiate between diseases categorized together e.g. urethral discharges, genital ulcers.

C- Professional/practical skills:

C1- Make clinical decisions based on evidence & obtained findings.

C2- Select appropriate investigations.

C3- Interpret results obtained from history, clinical examination & diagnostic testing.

C4- Plan a safe management after discussion with the patient himself or a relative.

C5- Fully document the patient's history & examination findings and present information clearly in different, written, oral or electronic forms.

C6- Take care sexually transmitted infections using universal precautions.

C7- Record a detailed and structured andrology history

C8- Perform a standard male genital examination.

C 9- Perform certain diagnostic tests important in the field of Andrology like microscopic examination of semen (conventional and computer assisted semen analysis (CASA) and prostatic fluid, testicular biopsy, intracavernosal injection (ICI), monitoring of nocturnal penile erections (using the Rigiscan) and look for varicocele using the Doppler US.

C 10- Practice certain therapeutic procedures like: semen processing, correction of priapism, testicular sperm extraction (TESE) and percutaneous sperm aspiration (PESA)

D- Communication & Transferable skills

D 1- Work effectively within the team of colleagues and tutors.

D 2- Manages time, services and resources effectively.

D 3- Sets priorities, skills and needs for lifelong learning.

D 4- Deal professionally with scientific organizations, journals, and associations.

D 5- Explain to the patients and/or relatives the nature of the disease.

D 6- Presents information clearly in different, written, oral or electronic forms.

D 7- Interact effectively with dermatology patients, their families and the public respecting their socioeconomic and cultural backgrounds.

D 8- Value the patient's concerns and worries.

D 9- Respect patients' privacy and autonomy.

D 10- Interact effectively with team work, other physicians & other health care providers.

(3) Course content: it has to be divided into 3 modules

Module 1= 3 credits

Module 2= 3 credits

Module 3= 3 credits

Module 4= 3 credits

**Andrology module No. 1
(Male infertility)**

Subjects	Teaching hours
1. Physiology of Testicular Function, Sperm Maturation and Fertilization	2
2. Classification of Andrological Disorders	1
3. Techniques, results and indications of different diagnostic methods:	
a) Imaging Diagnostics	1
b) Endocrine Laboratory Diagnosis.	
c) Cytogenetic and Molecular Genetic Investigations.	
d) Semen Analysis.	1
e) Sperm Quality and Function Tests.	1
f) Testicular Biopsy and Histology: role and indications.	1
4. Normal and Abnormal pubertal development	1
5. Etiology , pathogenesis, diagnosis, differential diagnosis and management of Diseases of the Hypothalamus and the Pituitary Gland:	3
a) Kallmann syndrome	
b) Idiopathic hypogonadotropic hypogonadism	
c) Prader-Labhart-Willi syndrome	
d) Constitutionally delayed puberty	
e) Secondary disturbance of GnRH, Hypopituitarism, Pasqualini syndrome, Hyperprolactinemia.	
6. Etiology , pathogenesis, diagnosis, differential diagnosis and management of Disorders affecting male fertility at the Testicular Level	16
a) -Congenital and Acquired anorchia	
b) -Maldescended (Undescended) testes	
c) -Varicocele and relation to male fertility	
d) -Orchitis	
e) Sertoli-cell-only syndrome	
f) Spermatogenic arrest	
g) -Globozoospermia	
h) -Immotile cilia syndrome	
i) -Disorders of sexual Development	
j) -Genetic disturbance in gonadal Differentiation:	

k) -Klinefelter syndrome	
l) -Gonadal dysgenesis	
m) -Persistent oviduct	
n) -Leydig cell hypoplasia	
o) Disorders of steroid synthesis	
p) -Male pseudohermaphroditism	
q) -XYY syndrome	
r) -Noonan syndrome	
s) -Structural chromosomal anomalies	
t) -Testicular tumors related to infertility	
u) -Disorders caused by exogenous factors or systemic disease	
v) - Idiopathic infertility	
9 - Etiology , pathogenesis, diagnosis, differential diagnosis and management of Diseases of the Seminal Ducts:	4
a. -Inflammation of the seminal tract and genital glands	
b. -Obstructions of seminal tract	
c. -Cystic fibrosis (CBAVD (congenital bilateral aplasia of the vas deferens)	
d. Disturbance of semen liquefaction	
e. Immunologic infertility	
10. Etiology , pathogenesis, diagnosis, differential diagnosis and management of Disorders of Androgen Target Organs	5
a. -Complete Androgen Insensitivity syndrome	
b. -Reifenstein syndrome	
c. -Prepenile scrotum bifid and hypospadias	
d. -Bulbospinal-muscular atrophy	
e. -Perineoscrotal hypospadias with pseudovagina	
f. -Estrogen resistance	
g. -Estrogen deficiency	
h. -Gynecomastia.	
i. - Accessory sex organs developmental disorders.	

11. Effects of STDs on male fertility.	1
12. Testicular Dysfunction in Systemic Diseases and Iatrogenic factors	1
13. Different types of treatment of male infertility:	
a. Empirical Therapies for Idiopathic Male Infertility	1
b. Assisted Reproduction	1
c. Cryopreservation of Human Spermatozoa and testicular tissue.	1
d. Gene therapy and regenerative medicine in Andrology	1
14. Male contribution to contraception	1
15. Etiology, pathogenesis, diagnosis, differential diagnosis and management of Andrological emergencies:	2
a. Testicular torsion	
b. Testicular trauma	
c. Penile trauma.	
Total	45

**Andrology module No. 2
(Sexual medicine)**

Lectures	Teaching hours
1- Psychology and physiology of sexual desire, arousal and response	
a) Central nervous mechanisms	1
b) Role of hormones	1
c) Genital responses	1
d) Orgasm, emission and ejaculation	3
2. Ageing and Sexuality	
a. The effect of physiological, psychological and social factors throughout life	2
b. Changes in sexuality throughout life	2
3. Sexual Dysfunctions in men and women	
a) Definitions and classification	1

b) Epidemiology, pathophysiology and risk factors	2
c) Differentiation between sexual dysfunction and short term, or transient, alterations of sexual function.	2
d) Diagnosis and treatment of sexual dysfunctions: i. Desire disorders ii. Arousal disorders including erectile dysfunction and priapism. iii. Orgasmic disorders iv. Ejaculatory disorders v. Genital pain and pelvic floor disorders vi. Structural / anatomical abnormalities including congenital and acquired penile deformities vii. Priapism	11
4. Deviant sexual behavior: a. Paraphilias (exhibitionism, voyeurism, pedophilia, sadomasochism, fetishism etc.) b. Sexual offences (abuse, assault and rape) c. High risk, compulsive and / or addictive sexual behavior d. Homosexuality.	5
5. Gender Identity Disorders	3
6. Clinical Management of sexual disorders	
a. Principles i. Evidence based medicine ii. Combination of psychosomatic and somato-medical approach iii. Interdisciplinarity iv. Patient and couple centered	5
b. Methods i. Establishing a sexual medicine clinic ii. Counseling, Sex therapy, Psychotherapy iii. Pharmacological iv. Physical and surgical	6
Total	45

Andrology module No. 3

Lectures	Teaching hours
1. History, and epidemiology of sexually transmitted infections	3

2. Social and psychological dimensions of sexuality	3
3. Profiles of vulnerable populations to STDs	3
4. Host immunity and molecular pathogenesis and STDs.	3
5. Overview of STDs care management:	
a. STDs care management .	2
b. Individual-level risk assessment for sexually transmitted infections, including HIV	2
c. Anatomy and physical examination of the genital tract	2
d. Individual, couple, and small-group interventions.	2
e. Management of STDs syndromes in women - lower genital tract infection syndromes in women -Pelvic inflammatory disease	3
f. Management of STDs syndromes in men -Urethritis in males. -Epididymitis. -Prostatitis syndromes	4
6. STDs in reproductive health and pediatrics:	
a- Sexually Transmitted Diseases and male Infertility .	3
b- -Sexually Transmitted Infections and Pregnancy outcome	3
c- -Child Sexual Abuse and STDs	2
7. Special medical, legal, and social issues:	
a- Sexual Assault and STDs .	3
b- Legal and Political Aspects of STIs Prevention.	2
c- -Ethical Challenges of the Global AIDS Epidemic	2
d- -Information and Communication Technologies for Prevention and Control of STDs	3
Total	45

Andrology module No. 4

Subjects	Teaching hours
1. Sperm formation	2
2. DNA synthesis	2
3. Nuclear proteins synthesis	
4. Evolutionary biology of spermatozoa	2
5. Correlation between Spermatozoa and human fertility	2
6. Accessory sex glands and role of secreted fluids in sperm function	2
7. Signaling and sperm functions	2
8. Sperm motility	2
9. Sperm-egg interaction	2
10. Epigenetics of fertilization	2
11. Manipulation of sperm cells	2
12. Correlation between Spermatozoa and human fertility	2
13. Introduction and History In sexual psychology	2
14. Theoretical Perspectives In sexual psychology	2
15. Theories of Sexuality	2
16. Homosexuality, Bisexuality, Transgender	2
17. Evolutionary Psychology and Feminism	2
18. Advances in Sex Therapy & Behavioral therapy & Couple therapy	2
19. Stages and advances in explanation of Development of urogenital system	2
20. Molecular embryology of Development of	2

urogenital system	
21. Preimplantation genetic diagnosis and its applications	2
22. Genetic factors and hormones that determine gender	2
23. Sex determination and embryo selection in ICSI	1
Total	45

(4) Clinical training:

Subjects	Training hours
1. Detailed History taking from infertile male.	7.5
2. General Physical Examination of infertile male.	7.5
3. Local genital Examination of infertile male.	7.5
4. How to select proper investigations for better case evaluation	7.5
5. Performance of Doppler US examination, Transrectal ultrasonography, Scrotal sonography, Scrotal color duplex, Penile color duplex	10
6. Reading and interpretation of different Imaging Diagnostics, Endocrine Laboratory Diagnosis, Cytogenetic and Molecular Genetic Investigations.	7.5
7. Reading and interpretation of Sperm Quality and Function Tests.	7.5
8. Performance, Reading and interpretation of Semen Analysis and CASA.	7.5
9. Detection of Normal and Abnormal pubertal development sequences and manifestations.	7.5
10. Performance, Reading and interpretation of Testicular Biopsy and Histology.	7.5

11. Types of Therapy for Male Infertility and when to use Assisted Reproduction techniques	7.5
12. Dealing with different Andrological emergencies	7.5
13. Ethical Aspects of Reproductive Medicine	7.5
14. Detailed History taking of Sexual medicine	7.5
15. General Physical Examination of patient with sexual dysfunctions.	7.5
16. Local genital Examination of patient with sexual dysfunctions.	7.5
17. Local vascular Examination of patient with sexual dysfunctions.	7.5
18. How to select proper investigations for better case evaluation	7.5
19. Intracorporal injection of vasoactive agents e.g. PGE1	10
20. Psychological testing for measurement of psychosexual functioning.	7.5
21. Monitoring of nocturnal erections that occur during rapid eye movement sleep to differentiate organic from psychogenic impotence. This is done by Rigiscan device examination.	7.5
22. Penile-brachial pressure index.	7.5
23. Performance of penile Duplex US studies: Evaluation of the blood vessels by Doppler ultrasound examination to determine the blood flow, blood pressure and imaging the defects in penile blood vessels. This is done before and after intracavernosal injection of vasoactive agents.	10
24. Cavernosometry & cavernosography to study the venous drainage system of the penis (the veno-occlusive mechanism of the corpus cavernosum).	7.5
25. Neurologic evaluation of afferent and efferent pathways of erection: electromyography, nerve conduction studies, thermal or vibratory threshold by Biothesiometry & bulbocavernosus latency.	7.5
26. Reading and interpretation of different Imaging Diagnostics,	7.5

Endocrine Laboratory Diagnosis, and other Investigations.	
27. Detection of Normal and Abnormal Sexual development sequences and manifestations.	7.5
28. Types of Therapy for Clinical Management of sexual disorders.	7.5
29. Ethical Aspects of sexual Medicine	7.5
Total	22.5

(5) Teaching methods:

- 5.1: Seminars, Lectures
- 5.2: Workshops
- 5.3: Grand meetings
- 5.4: Case presentations
- 5.5: Specialty conferences
- 5.6: Hand on training
- 5.7: Travelling fellowships

(6) Assessment methods:

- 6.1: Written exam for assessment of knowledge and intellectual ILOs
- 6.2: Structured Oral exam for assessment of knowledge, intellectual and transferable ILOs
- 6.3: OSCE Clinical exam for assessment of knowledge, intellectual and transferable and practical ILOs
- 6.4 MCQ continuous assessment exams for assessment of knowledge and intellectual ILOs

Assessment schedule:

- **MCQ Exam at the end of each semester each exam of 12.5 marks (totally= 50 marks).**

- **Final Assessment 36 months after registration to MD degree includes:**
 - **2 Written exams each of 75 marks (totally= 150 marks)**
 - **Case commentary = 50 marks**
 - **Structured Oral exam= 100 marks**
 - **Clinical OSCE exam = 100 marks**
- **Other assessment without marks: Creativity, managing conflicts, discipline, working according to the appropriate rules and successful team work with his colleagues and seniors.**

(7) References of the course:

7.1: **Hand books:** Andrology Department staff handouts

7.2: **Text books:** Andrology (3rd Edition, Springer, 2010), infertility in practice Advances in sexual medicine (Research Signpost, 2009)

7.3: **Journals,:** International Journal of Impotence Research, Journal of sexual Medicine, Journal of Andrology, Andrologia, International journal of Andrology, Andrology Archives, Fertility& sterility Journal.

7.4: **Websites:** www.IJIR.org, www.telemedicine.org, www.asrm.org, www.aua.org, www.andrologysociety.com , www.andrology.com , www.asiaandro.com, www.eshre.org

(8) Facilities and resources mandatory for course completion.

- 1- Daily andrology Outpatient clinic
- 2- Fully Equipped Lecture halls
- 3- Department library
- 4- Faculty library
- 5- An equipped Clinical andrology unit
- 6- Andrology laboratory

Course coordinator:

Samir Elhanbly, MD

Head of the department:

Prof. Ibraheem Abu-Bakr Abdel Hamid, MD

Date: 3/4/2016