

BLOCK GUIDE

BLOCK 4 ENDOCRINOLOGY



Coordinator

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Acknowledgement

Assalamualaikum Wr. Wb.

Competence based curriculum with SPICES approach had been implemented at undergraduate program in medical education according to Ministry of National Education decree No. 045/U/2002 since 2008.

The objective of competence based curriculum is producing professional doctor that capable to give community service and utilize technology. Curriculum at Faculty of Medicine, UMSU had been revised and reviewed twice, the first in 2011, and the second in 2016.

Endocrinology topics is covered in the second semester. The objective of this block is student can explain basic aspects in infection factor and non infection factor. This block will be the foundation for learning clinical medical science.

**Dean,
Medical Faculty of
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Faculty of Medicine's Vision, Missions And Objectives

Vision

To be a leading center of medical education in the development of science, technology, and human resources that have a global perspective, professional, dedicated and community-oriented, based on Al-Islam and Kemuhammadiyah principles

Missions

1. Providing education and teaching medical science that is competency-based and built upon Al-Islam and Kemuhammadiyah
2. Conducting research and development in the field of medical science based on Al-Islam and Kemuhammadiyah
3. Carrying out community service in the field of medical science based on Al-Islam and Kemuhammadiyah

Objectives

1. To produce graduates who are professional, competent , dedicated, and have an Islamic perspective in accordance with the Indonesian Doctors Competency Standards (SKDI) and Standards of Character and Competence of Muhammadiyah's Doctor (SKKDM)
2. To increase the number of research and scientific publications in national and international journals
3. To develop a network of sustainable partnerships in the field of medical science at national and international level
4. To Increase the number of community service to create a healthy and knowledgeable society.

Chapter 1

1.1. Introduction

Endocrinology is the first block at second semester. This block will be held for 4 weeks with 3 credits, consist of 27 hours lecture session, 4 hours laboratory practice, 12 hours small group discussion, 6 hours panel discussion, 4 hours skills training, 5 hours community based learning in family context, 5 hours self study. Contents in this block related to Molecular Biology of Human Cell block that have been taught at first semester.

1.2. Learning outcomes:

In the end of this block, students are able to:

1. Explain macroscopic and microscopic structure of endocrine organs and tissues that are related to preclinical medical science.
2. Explain physiology and biochemistry of endocrinesystem that are related to preclinical medical science.
3. Diagnose and manage patient's problems and diseases independently and thoroughly.
4. Diagnose, manage earlier and refer patient with (3B) or without emergency condition (3A)
5. Diagnose and refer patient (2)
6. Do clinical skills to mankind or patient simulation
7. Communicate effectively.
8. Respect to others, to be discipline, honest, altruism, team work, and responsible.
9. Explain Islamic aspect of endocrineproblems or diseases

National Qualification framework	Competency areas of Indonesian doctors competency standards	Graduate profile	LO 1	LO 2	LO 3	LO 4	LO 5	LO 6	LO 7	LO 8	LO 9
Attitude	Professionalism	Islamic doctors							✓		
Generic skills	Introspective and self development	Competence doctors	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Effective communication	Competence doctors, global perspective doctors						✓	✓		
	Information management	Competence doctors, global perspective doctors	✓	✓	✓	✓	✓				✓
Knowledge	Scientific basis of medicine	Competence doctors	✓	✓	✓	✓	✓				
Specific skills	Clinical skills	Competence doctors						✓			
	Management of health problems	Competence doctors, community-oriented doctors			✓	✓	✓				

1.3 Assessment

Learning activities	Assessment method	Summative	Formative	Percentage
Lecture	MCQ	Minitest		20%
	MCQ	Final block	-	40%
SGD	Short Essay	Final block	Process observation checklist	20%
Attitude		Process observation checklist		10%
Laboratory practice	MCQ	Practical test as prerequisite for final block	-	-
PKBK	Portfolio Oral assessment	PKBK as prerequisite for final block	-	10 %

Chapter II

Learning Activities

2.1 Lecture

Lecture is face to face meetings between student and lecturer in large group of student in which lecturer transfer conceptual and up to date knowledge to develop new construct of knowledge. At our medical education program, it is three term of lecturer subject: university subject (Ibadah and Kewarganegaraan), block subject and non block subject.

2.2 Small group discussion (SGD)

Small group discussion (SGD) is a learning activity that 8-10 student discuss problem with a fasilitator. SGD is held with seven jumps; student clarify new terminology, identify problems, brainstorming or make a hypothesis, discuss, formulate learning issues, self study, share learning results. SGD id held twice a week for two hours.

2.3 Laboratory work

Laboratory work is a learning activity to enhance and prove knowledge, improve procedural skills in laboratory.

2.4 Self study

Self study is student activity to learn the subject or learning issues out of another learning activities. Student can learn from any resources (meet up with lecturer, online searching, read textbook, etc) and anywhere (library, home, classroom, etc)

2.5 PKBK

Program keluarga binaan kesehatan (PKBK) is a specific competences that student attach in family context. At the end of this program, student explain knowledge of community based learning and recognize the family character. Student will learn in group and get one preceptor (Dosen pembimbing lapangan). Student must go to the family and discuss to the preceptor before and after go to the family. This program is a prerequisite for final block. Student will be assessed by the portfolio, family folder and oral assessment.

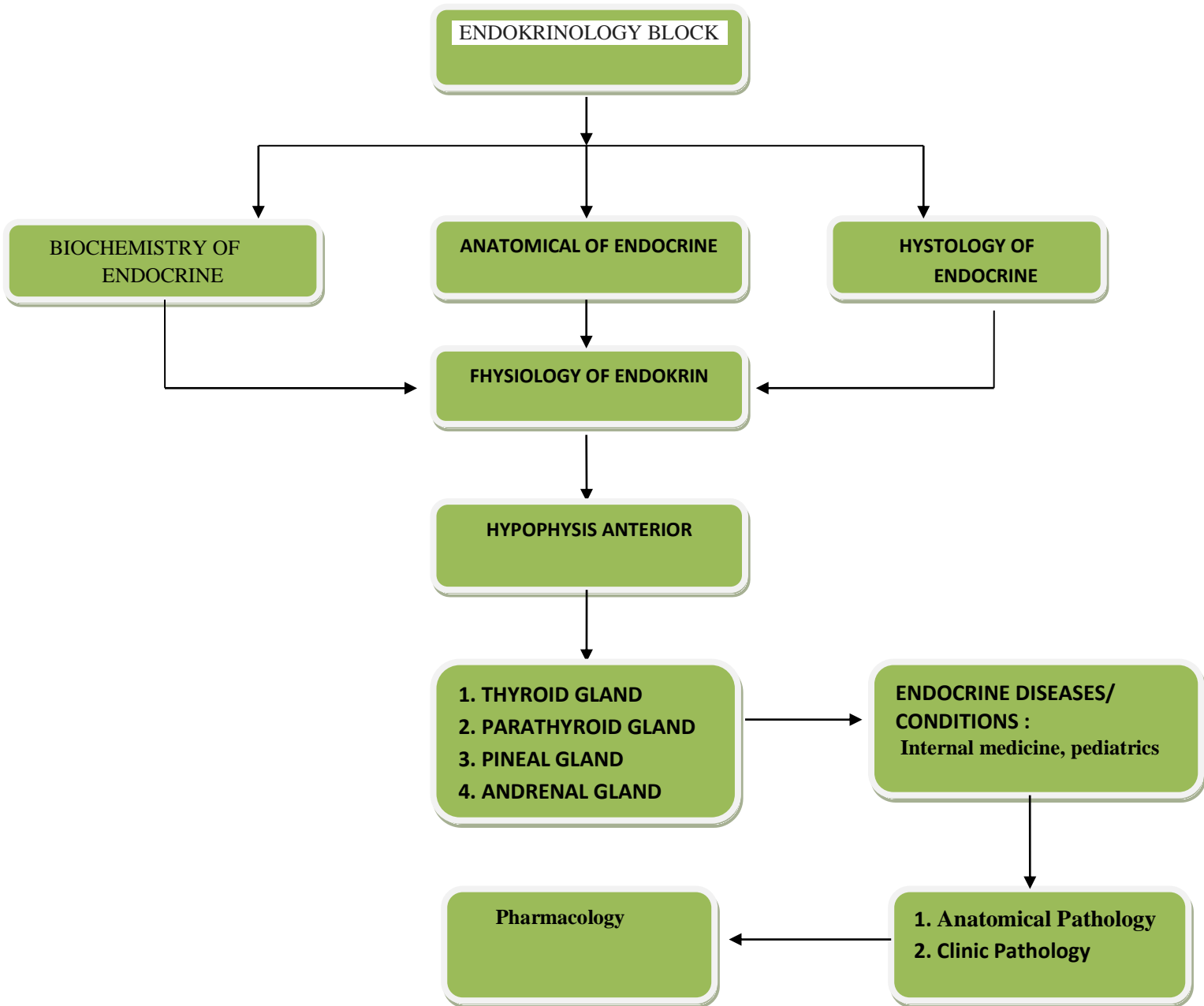
2.6 FK Menghafal and 9 golden habits

FK Menghafal is a program that designed to reach the Islmaic competences. In this program, student must memorize the ayat from Al-Qur'an (juzz 30) and deliver it to DPHC (dosen pembimbing hafalan ceramah) every block.

Chapter III
Learning topic

3.1 Learning scope

3.1.1 Topic tree



3.1.2 Learning outcome

Learning Outcomes	Content	Sub content	Teaching learning methods	Time Allocation	Assessment methods
Block introduction	Block introduction of Endocrinology	Learning outcome Learning activities Assessment methods Learning contract	Lecture	1x50' (Block coordinator)	MCQ
	PKBK	Learning objective Learning activities and procedure Group distribution	Lecture	1x50' (Public health)	MCQ
Explain normal macroscopic and microscopic structure of Endocrine Organs	Anatomical System of Endocrine Organs	Hypophysis and pituitary gland Pineal gland	Lecture	1x50' (Anatomy)	MCQ
		Location and borderline of endocrine organs: Thyroid and parathyroid gland Adrenal gland Pancreas gland	Lecture	1x50' (Anatomy)	MCQ
		Vascularitation and invasion of endocrine organs: · Hypopypsis & Pituitary · Thyroid gland · Parathyroid gland · Pineal gland · Adrenal gland · Pancreas gland	Lecture	1x50' (Anatomy)	MCQ
		Anatomical of endocrinology	Laboratory practice	2x50' (Anatomy)	Practical test / Short essay
	Histology of endocrine organs	Hypophysis gland Thyroid gland Parathyroid gland Pineal gland Adrenal gland Pancreas	Lecture and SGD	1x50' (Hystology)	MCQ Essay
			Laboratory practice	2x50' (Hystology)	Practical test/essay
Explain physiology of endocrinology	Physiology of endocrine organs	Definition, classification and function of endocrinology: Hypothalamus Hypophysis	Lecture	1x50' (physiology)	MCQ

		Thyroid and parathyroid gland Pineal gland Adrenal gland Pancreas gland Reproduction hormone			
		Mechanism of action, regulation of pineal gland Circadian rhythm Pathophysiology of sleep disorder	Lecture	1x50' (Physiology)	MCQ
Explain Biochemistry of Endocrine System	Biochemistry of Endocrine System	Control Releasing Hormone:	Lecture	1x50' (Biochemistry)	MCQ
		· Up regulation			
		· Down Regulation			
		· Desensitisation			
		· Hormoneal Effect on drugs			
Explain physiology and pathology of thyroid and parathyroid glands	Physiology of hypothalamus, hypophysis, thyroid and parathyroid hormone	Definition, classification, function, mechanism action and regulation of : - hypothalamus and hypophysis hormone - thyroid and parathyroid hormone	Lecture	1x50' (Physiology)	MCQ
	Synthesis and secretion of thyroid and parathyroid hormone	Synthesis, secretion thyroid and parathyroid hormone	Lecture	1x50' (Biochemistry)	MCQ
	Basic diagnosis of disease	History taking Physical examination Laboratory and radiologic examination Making diagnosis and differential diagnosis	Lecture	1x50' (Internal medicine)	MCQ
	Thyroid disorders	Hypothyroid Thyroiditis Goiter Hypertiorid Thyroid crisi Tirotoxicosis	Lecture SGD	1x50' (Internal medicine)	MCQ Essay
		Hypothyroid and hypothyroid in pediatrics	Lecture	1x50' (Pediatrics)	MCQ
	Parathyroid disorders	Hyperparathyroid Hypoparathyroid	Lecture	1x50' (Internal medicine)	MCQ
	Laboratory examination of thyroid	Thyroid panel: a. preanalytic and transport of sample b. TSH c. T3, T4 and free T4 d. interpretation of thyroid examination	Lecture SGD	1x50' (Clinical pathology)	MCQ Essay

	Microscopic pathology of thyroid and hypophysis	Pathogenesis and microscopic feature of thyroid and hypophysis: a. hyperthyroid b. hypothyroid d. thyroiditis d. grave disease e. thyroid neoplasma f. congenital anomaly	Lecture	2x50' (Anatomic pathology)	MCQ
	Pharmacology of thyroid and parathyroid hormone and drugs	a. Thyroid hormone b. Pharmacokinetic and pharmacodynamic antithyroid drugs c. Parathyroid hormone and drugs that affect calcium metabolism	Lecture	1x50' (Pharmacology)	MCQ
		Practical Animal Handling, ethics and good laboratory practices and Drug Prescription	Laboratory practice	2x50' (Pharmacology)	Practical test/ Essay
	Prevention of thyroid disorders	Classification of prevention Principal prevention of thyroid disorders Government policy in prevention of thyroid disorder	Lecture SGD	1x50' (Public health)	MCQ Essay
Explain physiology and pathology of adrenal hormone	Physiology of adrenal hormone	Definition, classification, mechanism of action and regulation of adrenal hormone: - pituitary/ACTH - adrenal gland - glukokortikoid - mineralokortikoid - androgen - epinephrine - norepinephrine	Lecture SGD	1x50' (Physiology)	MCQ Essay
		Synthesis, secretion and transport of adrenal hormone: Adrenal cortex and medulla	Lecture	1x50' (Biochemistry)	MCQ
	Pituitary and adrenal hormone disorders	Hyperaldosteronism Cushing syndrome Adrenal crisis	Lecture SGD	1x50' (Internal medicine)	MCQ Essay
		Pituitary disorders	Lecture	1x50' (Internal medicine)	MCQ
		Pharmacology of pituitary/ACTH and adrenal hormone	Lecture	1x50' (Pharmacology)	MCQ

		Laboratory examination of pituitary and adrenal disorders	Lecture	1x50' (Clinical pathology)	MCQ
		Microscopic feature of pituitary, pineal and adrenal disorders	Lecture	1x50' (Anatomic pathology)	MCQ
	Microscopic of endocrine disorders	Microscopic feature of thyroid, parathyroid, pituitary and adrenal disorders, pineal gland	Laboratory practice	2x50' (Anatomic pathology)	MCQ
Explain genetic engineering in the perspective of Islam	genetic engineering in Islam prospective	genetic engineering, cloning in Islam prospective (sintetic hormones include)	Lecture	1x50' (Islamic medicine)	MCQ
Respect to others, to be discipline, honest, altruism, team work, and responsible	-	-	Lecture, skills training, SGD, panel discussion,		Presence and logbook
Clinical skills to manikin or simulated patient Communicate effectively	Vital sign and general physical examination		Skills training	2x50'	OSCE
	Physical examination: Endocrinology disorders		Skills training	2x50'	OSCE
	History taking endocrinology disorders		Skills training	2x50'	OSCE

3.2 List of problems

No	Problem
1	Loss of appetite
2	Tremor
5	Stunted growth
6	Lump in neck
7	Fatigue
8	Swelter

3.3 List of competence

No	Disorder	Competence
1	Hiperparatiroid	1
2	Hipoparatiroid	3A
3	Hipertiroid	3A
4	Tirotoksikosis	3B
5	Hipotiroid	2
6	Goiter	3A
7	Tiroiditis	2
8	Cushing's disease	3B
9	Krisis adrenal	3B
10	Addison's disease	1
11	Pubertas prekoks	2
12	Hipogonadisme	2
13	Prolaktinemia	1
14	Adenoma tiroid	2
15	Karsinoma tiroid	2

3.4 List of references

Department	Title	Writer	Publisher	Year/Edition
Anatomy	Anatomi Tubuh Manusia	Daniel SW	J.B.Lippincott Company	7th Ed.
	Anatomi Klinis	Richard Snell		8 th Edition
	Atlas Anatomi Tubuh manusia	Sobota		7th Ed.
Histology	1. Essential biologi sel dan histologi	Gartner. LP, Hiatt. JI, Strum. Jm.	Alih bahasa Gunawijaya. FA. bina rupa aksara.	ed 6. 2002
	2. Histology a text and atlas with corelated cell and molecular biology.	Ros MH and Pawlina W.	Lippincott William & wilkim.	5ed. 2008
	<i>Atlas Histologi Difiore Dengan Korelasi Fungsional.</i>	Eroschenko, Victor P.	Jakarta : EGC.	Edisi 14. 2013
Physiology	Buku Ajar Fisiologi Kedokteran	Guyton dan Hall	Elsevier	12 th Edition
	Buku ajar Fisiologi Kedokteran	W.F.Ganong	EGC Penerbit Buku Kedokteran	Edisi 24, 2015
	Fisiologi Manusia dari Sel ke Sistem	Lauralee Sherwood	EGC Penerbit Buku Kedokteran	Edisi 8, 2014
Biochemistry	Biochemistry, Molecular Biology & Genetics	Todd A.Swanson, Sandra I.Kim, Marc J.Glucksman	Lippincott Williams & Wilkins	Fifth Edition
	Harper's Illustrated Biochemistry	Murray, David A. Bender, Kathleen M.Botham, Peter J. Kennelly, Victor W.Rodwell, P.Anthony Weil	LANGE	28 th Edition
	Textbook of Biochemistry with Clinical Correlations	Thomas M.Devlin		Fourth Ed
Pharmacology	Goodman & Gilman's The Pharmacological Basis of Therapeutics	Laurence L. Brunton, Bruce A. Chabner, Björn C. Knollmann	Lange Medical Books, Mc Graw-Hill	12th edition
	Basic and Clinical Pharmacology	Bertram G. Katzung, Susan B. Masters, Anthony J. Trevor	Lange Medical Books, Mc Graw-Hill	12th edition
	Rang and Dale's Pharmacology	Humphrey P. Rang, Maureen M. Dale, James M. Ritter, Rod J. Flower, Graeme Henderson	Elsevier Saunders	7th edition
Pathology clinic	TIETZ Textbook of Clinical Chemistry	Carl A.Burtis, Edward R.Ashwood, David	Elsevier Saunders	2006

Department	Title	Writer	Publisher	Year/Edition
	and Molecular Diagnostics	E.Brunds		
	Tafsiran hasil Pemeriksaan Klinik	E.N.Kosasih dan A.S Kosasih	KARISMA publishing grup	Edisi ke dua
Pathology anatomy	Basic Pathology	Kumar V. Contran R, S. Robbins	WB Saunders Company, New Delhi	2010
	Buku Ajar Patologi II (Sistemik)	Editor: Sudarto Pringgoutomo, dkk	Sagung Seto	Rev 2006
Internal Medicine	Harrison's Internal Medicine			
	Ilmu Penyakit Dalam		UI	
	William Endocrinology			
Paediatric	Buku ajar Endokrinologi Anak	IDAI		2012
	Nelson Textbook of Paediatric			
Public health	Medical Epidemiology	Raymond S Greenberg	Pentice-Hall International	1996
Islamic medicine	Kumpulan Kuliah Kedokteran Islam	Omar Kasule		

3.3 Table of lecturer and facilitator

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	6. dr. Juliandi Harahap, M.Kes	08163154813	juliandiharahap@yahoo.com

References

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- Murdoch-Eaton, Whittle, Sue. 2012. Generic skills in medical education: developing the tools for successful lifelong learning. *Medical Education* 2012; 46: 120–128

