

Modul designation	Gastrointestinal System
Semester in which the module is taught	5th Semester of Academic/Bachelor Stage
Person responsible for the module	<ol style="list-style-type: none"> <li>1. Yuke Andriane, dr., M.Kes</li> <li>2. Winni Maharani, dr.,M.Kes</li> <li>3. Ike Rahmawaty,dr.,M.Kes.</li> <li>4. Ariko Rahmat Putra,dr.,MH.Kes</li> <li>5. Rizki Perdana, dr.,M.Kes.,AIFO-K</li> </ol>
Language	Bilingual (Indonesia & English)
Relation to curriculum	Compulsory
Teaching methods	<ul style="list-style-type: none"> <li>- Lecture</li> <li>- Tutorial</li> <li>- Laboratory activity</li> </ul>
Workload	<p>Total workload : 7 weeks</p> <p>Contact hours : Lecture 2 hours/week</p> <p style="padding-left: 40px;">Tutorial 3 hours/meeting (3 meeting/week)</p> <p style="padding-left: 40px;">Laboratory activity 3 hours/meeting</p>
Credit points	10 ECTS (7 SKS)
Required & recommended prerequisites for joining the module	Learning course at 1 <sup>st</sup> -4 <sup>th</sup> semester
Module Objective	<p>At the end of course, students will be able to:</p> <ol style="list-style-type: none"> <li>1. Describe the embryological process and development of teeth, lips, palate and its application in clinical cases of the gastrointestinal system. (C4)</li> <li>2. Describe the embryological process and development of the digestive tract and accessory organs and their application in clinical cases of the gastrointestinal system. (C4)</li> <li>3. Describe the description of the macrostructure of the mouth, teeth, and organs of the gastrointestinal system and its application in clinical cases of the gastrointestinal system. (C4)</li> <li>4. Describe the microstructure of the mouth and organs of the gastrointestinal system and its application in clinical cases of the gastrointestinal system. (C4)</li> <li>5. Describe the function of the gastrointestinal organs in general. (C2)</li> </ol>

	<ol style="list-style-type: none"><li>6. Describe the physiological processes of the mouth, including the processes of chewing, swallowing and their application in clinical cases of the gastrointestinal system. (C4)</li><li>7. Describe the physiological processes of the stomach, including the formation of gastric acid, gastric emptying, secretion phase in the stomach, and its application in clinical cases of the gastrointestinal system. (C4)</li><li>8. Describe the physiological processes of the small intestine, including secretion, digestion, and absorption, and their application in clinical cases of the gastrointestinal system. (C4)</li><li>9. Describe the physiological processes of the large intestine, including the defecation process, the physiology of accessory organs in the gastrointestinal tract (liver, pancreas, and gallbladder), and their application in clinical cases of the gastrointestinal system. (C4)</li><li>10. Describe the biochemical processes related to diseases of the organs of the gastrointestinal system and their application in clinical cases of the gastrointestinal system. (C4)</li><li>11. Describe the morphology, properties, virulence, examination of microorganisms in the organs of the gastrointestinal system, and their application in clinical cases in the gastrointestinal system. (C4)</li><li>12. Explain the definition and etiology of gastrointestinal system diseases due to congenital abnormalities, infections, malignancies, or gastrointestinal disorders that require surgical treatment in accordance with the rules of clinical medicine. (C2)</li><li>13. Analyze the classification of cases of the gastrointestinal system due to congenital abnormalities, infections, malignancies, or disorders that require surgical treatment in accordance with the rules of clinical medicine. (C4)</li><li>14. Analyze clinical manifestations based on the pathogenesis and pathophysiology of gastrointestinal system diseases due to congenital abnormalities, infections, malignancies, or disorders that require surgical treatment in accordance with the rules of clinical medicine. (C4)</li><li>15. Describe the mechanism of pain, types of pain, receptors, and their neural journey in the gastrointestinal system and its application in clinical cases in the gastrointestinal system. (C4)</li><li>16. Analyze the histopathological picture of the gastrointestinal system based on the principles of anatomical pathology in the analysis of clinical cases of the gastrointestinal system. (C4)</li><li>17. Analyze the results of clinical pathology examinations related to diseases of the organs of the gastrointestinal system based on the principles of clinical pathology in the analysis of cases in</li></ol>
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	<p>the gastrointestinal system. (C4)</p> <p>18. Implement basic medical knowledge and clinical medicine in selecting supporting examinations, differential diagnosis, and working diagnosis due to congenital abnormalities, inflammation, infection, nutrition, and malignancies in the gastrointestinal system. (C3)</p> <p>19. Implement basic medical science and clinical medicine in the management and education, medical rehabilitation, and prevention of gastrointestinal system diseases with the principles of communication, humanities, professional ethics, and Islamic values in managing gastrointestinal system diseases due to congenital abnormalities, inflammation, infection, nutrition, and malignancy. (C3, A5)</p> <p>20. Implement basic medical science and clinical medicine in determining complications and prognosis of gastrointestinal system diseases in managing gastrointestinal system diseases resulting from congenital abnormalities, inflammation, infection, nutrition, and malignancy. (C3, A5)</p>
Content	Gastrointestinal System module discusses basic science, including embryology, anatomy, histology, physiology, biochemistry, anatomical pathology, clinical pathology, and pharmacology of the gastrointestinal and hepatobiliary tract. In addition, we will discuss several disorders of the gastrointestinal system that are most frequently encountered and that general practitioners must know about.
Examination forms	Multidisciplinary Examination (MDE), SOOCA, Lab exam
Study and examination requirements	System Pass Criteria : Minimum MDE, SOOCA and Lab exam score 55.5 (C)
Reading list	<ol style="list-style-type: none"> <li>1. Keith L.Moore, Arthur F.Dalley, Anne M.R.Agur. Moore Clinically Oriented Anatomy. Lippincott Williams &amp; Wilkins. Seventh edition</li> <li>2. Alice K. Guidera, Patrick J. D. Dawes, Amy Fong, Mark D. Stringer. Head and neck fascia and compartments: No space for spaces. Head &amp; Neck</li> <li>3. Rickne C.Scheid, Gabriella Weis. Woelfel's Dental Anatomy. Lippincott Williams &amp; Wilkins. Eight edition</li> <li>4. Stanley J.Nelson, Major M.Ash. Wheeler's Dental Anatomy, Physiology and Occlusion. Elsevier. nine edition.</li> <li>5. Junqueira, Basic Histology</li> <li>6. Larry R, Cochard LR. Netter's Atlas of Human Embryology. USA: Elsevier, Inc.</li> <li>7. Schoenwolf GC, Bleyl SB, Brauer PR, and Francis-Wes PH. Larsen's Human Embryology, 5th Edition. Philadelphia: Churchill Livingstone</li> </ol>

8. Bruce M, Carlson BM. Human Embryology and Developmental Biology. 6th Edition. USA: Elsevier, Inc.
9. Dudek RW. Embryology. 5th Edition. Philadelphia: Lippincott Williams & Wilkins
10. Sadler, TW. Langman's medical embryology. 13th Edition. Baltimore: Lippincott Williams & Wilkins
11. Moore KL, Persaud TVN. The Developing Human: Clinically Oriented Embryology. 9th Edition. USA: Saunders
12. *Schwartz's Principles of Surgery 10<sup>th</sup> Edition*
13. *Sabiston Textbook of Surgery 19<sup>th</sup> Edition*
14. *Essential Practice of Surgery : Basic Science ad Clinical Evidence*
15. Harrison's Internal Medicine
16. *Current Essentials of Surgery, Gerrarr M. Doherty, MD.*
17. Rubun DT, Ananthakrishnan AN, Siegel CA, et al. *ACG Clinical Guideline: Ulcertaive Colitis in Adults. Am J Gastroenterol*
18. Satsangi J, Silverberg MS, Vermeire S, Colombel JF. *The Montreal Classification of inflammatory bowel disease: controversies, consensus, and implication. Gut.*
19. Devlin, TM: Textbook of Biochemistry with Clinical Correlation, 6<sup>th</sup> ed.
20. Harper's Illustrated Biochemistry. 31th ed.
21. Koolman, Color Atlas of Biochemistry, 2<sup>nd</sup> ed.
22. Lippincott's Illustrated Reviews. Biochemistry, 5<sup>th</sup> ed.
23. Buku Ajar Ilmu Penyakit Dalam. Universitas Indonesia. Edisi 6
24. Talley NJ, Ford AC. *Functional Dyspepsia. N Engl J Med*
25. Moayyedi P, Lacy BE, Andrews CN, et al. *ACG and CAG Clinical Guideline: Management of Dyspepsia. Am J Gastroenterol*
26. Vanheel H, Carbone F, Valvekens L, et al. *Pathophysiological Abnormalities in Functional Dyspepsia Subgroups According to the Rome III Criteria. Am J Gastroenterol*
27. A Guide for Patients with Liver Diseases in cluding Guidelines for Nutrition, 8<sup>th</sup> edition
28. 2006. Falk Foundation, German2. Plauth, M., Cabre, E., Riggio, O., Assis-C
29. Indonesia, K. K. R. InfoDATIN. Situasi dan analisis hepatitis. Pusat Data dan Infor masi Kementrian Kesehatan RI.
30. Whitney, E., DeBruyne, L. K., Pinna, K., & Rolfes, S. R. Nutrition for health and health care. Cengage Learning.
31. Mahan, L. K., & Raymond, J. L. *Krause's food & the nutrition care process- e-book.* Elsevier Health Sciences.
32. Mahan, L. K., Escott-Stump, S., & Krause, M. V. *Krause's food & nutrition therapy.* Elsevier Saunders.
33. Mullin, G. E., Matarese, L. E., & Palmer, M. *Gastrointestinal and liver disease nutrition desk reference.* CRC Press
34. Chalasani, N., Younossi, Z., Lavine, J. E., Diehl, A. M., Brunt, E. M., Cusi, K., ... & Sanyal, A. J. The diagnosis and management of nonalcoholic fatty liver dis ease: Practice Guideline by the

	<p>American Association for the Study of Liver Diseases, American College of Gastroenterology, and the American Gastroenterological Association. <i>Hepatology</i>.</p> <p>35. Ryan K, Sherrish medical microbiology, 7<sup>th</sup> Ed.</p> <p>36. Morse P, Jawetz, Melnick &amp; Adelberg's Medical Microbiology, 26<sup>th</sup> Ed.</p> <p>37. Mahon C, Textbook of diagnostic microbiology, 6<sup>th</sup> ed.</p> <p>38. Acute Gastroenteritis in Children, Karen L. Kotloff, Nelson Textbook of Pediatrics</p> <p>39. Disorder of Malabsorption, Raanan Shamir, Nelson Textbook of Pediatrics</p> <p>40. Guyton &amp; Hall. Text book Medical Physiology 13<sup>th</sup> edition. Elsevier</p> <p>41. Walter F Boron, Emile L Boulpaep. Medical Physiology third edition. Elsvier</p> <p>42. Lauralee Sherwood. Human Physiology From Cells to Systems 9<sup>th</sup> Edition. Thomson Brooks/Cole</p> <p>43. Eric P Widmaier, Hershel Raff, Kevin T Strang. Vander's Human Physiology The Mechanisms of Body Function. Mc Graw Hill</p> <p>44. Linda S, Costanzo, Physiology. Sixth Edition, Elsevier</p> <p>45. Johnson L. Gastrointestinal Physiology, 9<sup>th</sup> edition, Elsevier</p> <p>46. Paul A Dawson. Bile formation and Enterohepatic formation in Gastrointestinal Physiology. Elsvier</p> <p>47. Seeleys Anatomy &amp; Physiology Eleven Edition, Mc Graw Hill</p> <p>48. Sharkey AK, Mac Naughton WK. Chapter 50: Gastrointestinal motility and Waterflux, Emesis and Biliary and Pancreatic Disease. In: Goodman and Gillman: The Pharmacological Basis of Theurapeutics, 13<sup>th</sup> edition</p> <p>49. Sharkey AK, Mac Naughton WK. Chapter 49: Pharmacotherapy for Gastric Acidity, Peptic Ulcers and Gastroesophageal Reflux Disease. In: Goodman and Gillman: The Pharmacological Basis of Theurapeutics, 13<sup>th</sup> edition.</p> <p>50. Stringer JL. Chapter 42 : Drugs that Affect the GI Tract. In : Basic Concept in Pharmacology : What You Need To Know for each Drug Class, 5<sup>th</sup> edition</p> <p>51. Motycka Carol. Chapter 31 : Gastrointestinal and Antiemetic Drugs. In: Lippincott Illustrated Reviews, Pharmacology 6<sup>th</sup> edition. By Tariq Ziad</p> <p>52. Martin LC. Chapter 44 : Anthelmitic Drugs. In: Lippincott Illustrated Reviews, Pharmacology 6<sup>th</sup> edition. By Tariq Ziad.</p> <p>53. Wallen K. Lippincott Illustrated Review : Pharmacology. Wolters Kluwer. Sixth edition</p> <p>54. Harrison's Gastroenterology and hepatology. 17<sup>th</sup> ed.chapter 4</p> <p>55. Guideline perhati-kl</p> <p>56. Buku ajar ilmu Kesehatan telinga hidung tenggorok kepala</p>
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