|  |  |
| --- | --- |
| **Course Title:** | **Physiology-2 (Pharmacy)** |
| **Course Code:** | **فسلص2283 ) PHYS 283** |
| **Program:** | **Pharmaceutical sciences** |
| **Department:** | **Physiology Department** |
| **College:** | **College of Pharmacy** |
| **Institution:** | **Najran University** |

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# A. Course Identification

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1. Credit hours:** | | | | **2(1+1)** | | | | | | | | | | | | |
| **2. Course type** | | | | | | | | | | | | | | | | |
| **a.** | University | |  | | College | | | **√** | Department | | | |  | Others |  |  |
| **b.** | | Required | | | |  | Elective | | |  |  | | | | | |
| **3. Level/year at which this course is offered:** | | | | | | | | | | | | **1440/1441 (1st semester) – 2nd year level IV** | | | | |
| **4. Pre-requisites for this course** (if any)**: None** | | | | | | | | | | | | | | | | |
| **5. Co-requisites for this course** (if any)**: None** | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | |

## 6. Mode of Instruction (mark all that apply)

| **No** | **Mode of Instruction** | **Contact Hours** | **Percentage** |
| --- | --- | --- | --- |
| **1** | **Traditional classroom** | 18 | 100% |
| **2** | **Blended** |  |  |
| **3** | **E-learning** |  |  |
| **4** | **Correspondence** |  |  |
| **5** | **Other** |  |  |

**7. Actual Learning Hours** (based on academic semester)

|  |  |  |
| --- | --- | --- |
| **No** | **Activity** | **Learning Hours** |
| **Contact Hours** | | |
| **1** | **Lecture** | 18 |
| **2** | **Laboratory/Studio** | 36 |
| **3** | **Tutorial** |  |
| **4** | **Others** (specify) |  |
|  | **Total** | 54 |
| **Other Learning Hours\*** | | |
| **1** | **Study** | 2 hour \week |
| **2** | **Assignments** |  |
| **3** | **Library** |  |
| **4** | **Projects/Research Essays/Theses** |  |
| **5** | **Others**(specify) |  |
|  | **Total** |  |

**\***The length of time that a learner takes to complete learning activities that lead to achievement of course learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times

# B. Course Objectives and Learning Outcomes

|  |
| --- |
| 1. **Course Description:** This course provides the students the basic knowledge about the renal system, central nervous system, endocrine system and gastro intestinal tract system. |
|  |
| 2. Course Main Objective:  1. **Recognize the functions of different parts of nephron, the mechanism of urine formation, and importance and disorders of acid base balance** 2. **Enumerate different functions and describe different disorders of various endocrine glands** 3. **Describe the organization and the functions of different parts of central nervous system** 4. **Recognize the functions and the regulation of gastrointestinal tract, types of gastrointestinal secretions, GIT motility, process of digestion and absorption** |
|  |

## 3. Course Learning Outcomes

| **CLOs** | | **AlignedPLOs** |
| --- | --- | --- |
| 1 | **Knowledge:** |  |
| 1.1 | Recognize the functions of different parts of nephron, the mechanism of urine formation, and importance and disorders of acid base balance |  |
| 1.2 | Enumerate different functions and describe different disorders of various endocrine glands |  |
| 1.3 | Describe the organization and the functions of different parts of central nervous system |  |
| 1.4 | Define and describe the functions of gastrointestinal tract, types of gastrointestinal secretions, GIT motility, process of digestion and absorption |  |
| **2** | **Skills :** |  |
| 2.1 | Differentiate between different types of acid –base disorders |  |
| 2.2 | Summarize the main features of endocrine disorders |  |
| 2.3 |  |  |
| 2... |  |  |
| **3** | **Competence:** |  |
| 3.1 | Illustrate the signs of different endocrine disorders |  |
| 3.2 | Perform and comment on different reflexes and sensations |  |
| 3.3 |  |  |
| 3... |  |  |

# C. Course Content

|  |  |  |
| --- | --- | --- |
| **No** | **List of Topics** | **Contact Hours** |
| 1 | **Renal system:**   * The homeostatic or general function of the kidneys. * The Nephron and the functions of its different parts.   Glomerular membrane. | 1 |
|  | Determination of renal function tests | 2 practical |
| 2 | * Dynamics of glomerular Filtration. * Juxta-Glomerular Apparatus J.G.A. * Steps of Urine Formation. | 1 |
|  | * Determination of renal function tests | 2 practical |
| 3 | * Acid base balance and its disorders | 1 |
|  | * Determination of renal function tests | 2 practical |
| 4 | Water and electrolytes reabsorption | 1 |
| 5 | **Endocrinology:**   * Introduction of endocrinology. * Anterior pituitary gland. | 1 |
|  | Identification of anterior pituitary disorders | 2 practical |
| 6 | Posterior pituitary gland | 1 |
|  | Identification of anterior pituitary disorders | 2 practical |
| 7 | Thyroid & parathyroid gland | 1 |
|  | Identification of thyroid and parathyroid disorders | 2 practical |
| 8 | * Suprarenal gland ‬   Pancreas gland | 1 |
|  | * Identification of suprarenal disorders | 2 practical |
|  | * Midterm exam | 1 |
| 9 | **Central nervous system:**  Electrophysiology of nervous system | 1 |
|  | Examination of pain and other superficial sensations | 2 practical |
| 10 | * Neuromuscular junction   Synapse | 1 |
|  | * Examination of pain and other superficial sensations | 2 practical |
| 11 | * Sensations.   Division of Nervous System | 1 |
|  | * Examination of motor system | 2 practical |
| 12 | * Pain and its pathway.   The Basal Ganglia. | 1 |
|  | * Examination of coordination | 2 practical |
| 13 | * The Hypothalamus. * The Cerebrum.   The Cerebellum. | 1 |
|  | * Examination of superficial reflexes | 2 practical |
| 14 | **Digestive system:**   * Functions of (Saliva - stomach - small intestine - large intestine - liver- gall bladder - bile salts). | 1 |
|  | Examination of deep reflexes | 2 practical |
| 15 | * Intestinal motility. * Some GIT disorders (achalasia – mega-esophagus-reflux-peptic ulcer-jaundice). | 1 |
|  | * Revision on the previous practical lessons | 2 practical |
| 16 | * Some processes related to digestion (mastication, deglutition, vomiting, and defecation). | 1 |
|  | * Revision on the previous practical lessons | 2 practical |
| 17 | * Control of motility and secretion. * Absorption. | 1 |
| **Total** | | 54 |

# D. Teaching and Assessment

## 1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

| **Code** | **Course Learning Outcomes** | **TeachingStrategies** | **AssessmentMethods** |
| --- | --- | --- | --- |
| **1.0** | **Knowledge** | | |
| 1.1 | Recognize the functions of different parts of nephron, the mechanism of urine formation, and importance and disorders of acid base balance | 1) Interactive lectures using powerful software simulations for all parts of the subject  2) Monthly written assignments on selected integrated topics | 1) Continuous assessment (Quizzes)  2) Final exam. |
| 1.2 | Enumerate different functions and describe different disorders of various endocrine glands |
| 1.3 | Describe the organization and the functions of different parts of central nervous system |
| 1.4 | Define and describe the functions of gastrointestinal tract, types of gastrointestinal secretions, GIT motility, process of digestion and absorption |
| **2.0** | **Skills** | | |
| 2.1 | Differentiate between different types of acid –base disorders | 1) Interactive lectures using powerful software simulations for all parts of the subject  2) Monthly written assignments on selected integrated topics | 1) Continuous assessment (Quizzes)  2) Final exam. |
| 2.2 | Summarize the main features of endocrine disorders |
| … |  |  |  |
| **3.0** | **Competence** | | |
| 3.1 | Illustrate the signs of different endocrine disorders | Practical sessions in physiology lab | Objectively structured practical examination (OSPE) in physiology |
| 3.2 | Perform and comment on different reflexes and sensations |
| … |  |  |  |

## 

## 2. Assessment Tasks for Students

| **#** | **Assessment task\*** | **Week Due** | **Percentage of Total Assessment Score** |
| --- | --- | --- | --- |
| **1** | 1st Quiz | 4th | 5% |
| **2** | 2nd Quiz | 7th | 5% |
| **3** | Midterm exam | 8th | 20% |
| **4** | Assignment | 15th | 5% |
| **5** | Observational card | 16th | 5% |
| **6** | Practical assignment and final course practical exam |  | 20% |
| **7** | Final course theoretical exam |  | 40% |
| **8** |  |  |  |

**\*Assessment task** (i.e., written test, oral test, oral presentation, group project, essay, etc.)

# E. Student Academic Counseling and Support

|  |
| --- |
| **Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice :**  1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)   1. **Allocation of office hours by the departments** 2. **Academic supervision**   **Academic surveillance.** |
|  |

# F. Learning Resources and Facilities

## Learning Resources

|  |  |
| --- | --- |
| **Required Textbooks** | Textbooks:  **Guyton and Hall Textbook of Medical Physiology, 13th Edition** http://cdn.laedo.com/images/space.gif*by*[*John E. Hall*](http://www.gettextbooks.com/author/John_E_Hall)*,*[*Arthur C Guyton*](http://www.gettextbooks.com/author/Arthur_C_Guyton) *Hardcover, 1120 Pages, Published (2016) by Saunders* *ISBN: 978-4557-7005-2,* |
| **Essential References Materials** | **Ganong's Review of Medical Physiology, 24th Edition** *(LANGE Basic Science) 24th Edition by*[*Kim E. Barrett*](http://www.amazon.com/s/ref=dp_byline_sr_book_1?ie=UTF8&text=Kim+E.+Barrett&search-alias=books&field-author=Kim+E.+Barrett&sort=relevancerank)*(Author),*[*Susan M. Barman*](http://www.amazon.com/s/ref=dp_byline_sr_book_2?ie=UTF8&text=Susan+M.+Barman&search-alias=books&field-author=Susan+M.+Barman&sort=relevancerank)*(Author),*[*Scott Boitano*](http://www.amazon.com/s/ref=dp_byline_sr_book_3?ie=UTF8&text=Scott+Boitano&search-alias=books&field-author=Scott+Boitano&sort=relevancerank)*(Author), [Heddwen Brooks](http://www.amazon.com/s/ref=dp_byline_sr_book_4?ie=UTF8&text=Heddwen+Brooks&search-alias=books&field-author=Heddwen+Brooks&sort=relevancerank) (Author) McGraw-Hill's* ***(2012)*** *ISBN-13: 978-0071780032, ISBN-10: 0071780033* |
| **Electronic Materials** | (eg. Web Sites, Social Media, Blackboard, etc.)   * **//**[**physiologyplace.com**](http://www.physiologyplace.com/) **//cwx.prenhall.com/bookbind/pubbooks/silverthorn2/**   **//**[**springer.com/biomed/human+physiology/.../421**](http://www.springer.com/biomed/human+physiology/.../421) **//highered.mcgraw-hill.com/sites/.../student\_view0**/ |
| **Other Learning Materials** | Other learning material such as computer-based programs/CD, professional standards or regulations and software.  **Available in prince Meshaal Bin AbduAllah Library** |

## 2. Facilities Required

| **Item** | **Resources** |
| --- | --- |
| **Accommodation**  (Classrooms, laboratories, demonstration rooms/labs, etc.) | **1) Lecture room suitable for the number of students.**  **2) Additional physiology room for preparing requirements for physiological experiments** |
| **Technology Resources**  (AV, data show, Smart Board, software, etc.) | Computing resources (AV, data show, Smart Board, software, etc.)  **There is a need for 30 computers with networking and internet access in the labs for student learning. As well as a number of computers and multimedia projectors in the other rooms.** |
| **Other Resources**  (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list) | **Library supplied with reference textbooks, electronic resources** |

# G. Course Quality Evaluation

| **Evaluation**  **Areas/Issues** | **Evaluators** | **Evaluation Methods** |
| --- | --- | --- |
| 1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching | Students | Indirect survey |
| 2 Other Strategies for Evaluation of Teaching by the Program/Department Instructor | Course coordinator | Direct student marks |
| 3- Processes for Improvement of Teaching | Student course coordinator | Indirect survey |
| 4. Processes for Verifying Standards of |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

**Evaluation areas** (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)

**Evaluators** (Students, Faculty, Program Leaders Peer Reviewer, Others (specify)

**Assessment Methods** (Direct, Indirect)

# H. Specification Approval Data

|  |  |
| --- | --- |
| **Council / Committee** | Physiology committee |
| **Reference No.** | 1 |
| **Date** | 21/04/1442 H |