COURSE INFORMATION

COURSE TITLE
BIO116: Introduction to Human Disease: GT-SC2

COURSE DESCRIPTION
Focused analysis of the causes and mechanics of human illness and death will be presented for each of the major human body systems. Selected diseases will be studied in greater detail including etiology, pathogenesis, epidemiology, sociology, and therapy. This is a statewide Guaranteed Transfer course in the GT-SC2 category.

GT Pathways Course Statement
The Colorado Commission on Higher Education has approved BIO116 for inclusion in the Guaranteed Transfer (GT) Pathways program in the GT-SC2 category. For transferring students, successful completion with a minimum C– grade guarantees transfer and application of credit in this GT Pathways category. For more information on the GT Pathways program, go to http://highered.colorado.gov/academics/transfers/gtpathways/curriculum.html.

This course is one of the Statewide Guaranteed Transfer courses.

- BIO116 Required Syllabus

CREDIT HOURS
3.0
The CCCOnline Course Policies page contains information about the student's role in the classroom, grading policies, and rights and responsibilities.
COURSE MATERIALS

All course reading material is available online and linked within the course site. You do not need to purchase any additional materials.

MINIMUM COMPUTER REQUIREMENTS

To complete this course, you will need regular access to a computer from which you can get to the internet and use email. In order to ensure that your course functions properly, you must run the System Check. This is a CRITICAL STEP, and taking the time to do it now will eliminate a tremendous amount of frustration for you later. To run the System Check, click Tools in the course NavBar and then click System Check.

REQUIRED eTEXT

You are required to watch the videos within each Module's Exploration and read the content found there. Links to each required reading or resource are found within the Explorations of each Module.

LIBRARY ACCESS

You will need your student ID Number (Your S#) to login to the CCCOnline Library in order to gain access to some of the readings and videos in this course.
COURSE COMPETENCIES AND OUTCOMES

STUDENT COMPETENCIES

The competencies you will demonstrate in this course are as follows:

A. Describe the major systems of the human body, understand and describe the etiology, pathology, and therapy of selected diseases that affect each system.
B. Apply lecture and acquired information to patient case studies in order to evaluate diagnostic information, diagnoses, and treatments.
C. Discuss the social impact of the disease on an individual, family, and the community.

REQUIRED TOPICAL OUTLINE

I. Introduction to human disease and Mechanisms of disease
   a. Cancer and Body Defenses
      i. Case study: Lymphoma patient
   b. Inflammation and Infection
II. Immune system and Musculoskeletal System
   a. Blood and Blood-forming organs and diseases
   b. Cardiovascular System diseases
III. Respiratory System and Lymphatic System
   a. Respiratory diseases
      i. Case study: Asthma patient
   b. Lymphatic diseases
   c. Digestive System diseases and Liver, gallbladder, and pancreatic diseases
   d. Urinary System diseases and diseases
IV. Nervous System
   a. Nervous System diseases
      i. Case study: Cerebral Vascular Accident patient
   b. Eye and ear diseases and Reproductive System diseases
   c. Integumentary System diseases and Endocrine System diseases
V. Genetic and Developmental diseases
   a. Childhood Diseases
i. Case study: Spina Bifida patient

The module outcomes that will permit you to demonstrate course competencies are:

**MODULE 1**

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Explain the basic mechanisms of human disease including the major infectious agents, i.e. bacteria, virus, prions, parasites.</td>
<td>A</td>
</tr>
<tr>
<td>2 Explain the cellular mechanisms of cancer.</td>
<td>A, B</td>
</tr>
<tr>
<td>3 Describe concept, etiology, pathogenesis, clinical manifestations, diagnosis, and prognosis of benign and malignant tumors.</td>
<td>A, B, C</td>
</tr>
<tr>
<td>4 Identify different cancer types and their classification.</td>
<td>A, B</td>
</tr>
<tr>
<td>5 Identify current cancer treatments and their case appropriateness.</td>
<td>A, B, C</td>
</tr>
<tr>
<td>6 Describe the stages of the body’s inflammatory response. Describe why and how the inflammatory response is a defense mechanism of the body.</td>
<td>A</td>
</tr>
<tr>
<td>8 Consider a disease/pathologic condition that is personally meaningful or of interest to research for the Physical and Social Disease Impact Final Project.</td>
<td>A, B, C</td>
</tr>
</tbody>
</table>

**MODULE 2**

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Outline the types of immunity: adaptive and humoral.</td>
<td>A</td>
</tr>
<tr>
<td>2 Discuss concept, etiology, pathogenesis, clinical manifestations, diagnosis, and prognosis of autoimmune and immune system diseases (allergies, asthma, immunodeficiency).</td>
<td>A, C</td>
</tr>
<tr>
<td>3 State the significant abnormalities of the skeletal system (congenital malformations, arthritis, osteoporosis, muscular dystrophy).</td>
<td>A</td>
</tr>
<tr>
<td>4 Identify the composition and function of human blood and its associated diseases (types of anemia, coagulation defects hemophilia, white blood cell defects).</td>
<td>A</td>
</tr>
<tr>
<td>5 Name the blood-forming organs (bone marrow, spleen) of the body and their associated diseases.</td>
<td>A</td>
</tr>
<tr>
<td>6 Discuss concept, etiology, pathogenesis, clinical manifestations, diagnosis, and prognosis of MI and identify other cardiovascular diseases (congenital heart disease, atherosclerosis, myocardial diseases, cardiac arrhythmias, myocardial infarction).</td>
<td>A, B</td>
</tr>
<tr>
<td>7 Characterize the risk factors for coronary heart disease.</td>
<td>A</td>
</tr>
<tr>
<td>8 Choose a disease/pathologic condition that is personally meaningful for the Physical and Social Disease Impact Final Project and describe why you chose it.</td>
<td>A, B, C</td>
</tr>
</tbody>
</table>
MODULE 3

Outcomes
1. Outline significant infectious diseases of the lungs including pneumonia, Severe Acute Respiratory Syndrome (SARS), Middle Eastern Respiratory Syndrome (MERS), Tuberculosis (TB), and bronchitis.
2. Discuss concept, etiology, pathogenesis, clinical manifestations, diagnosis, and treatment of asthma.
3. Investigate diseases of the lymph nodes including leukemia and lymphomas.
4. Differentiate between the significant diseases of the digestive tract including gastritis, peptic ulcers, gastroenteritis, IBS, and Crohn's Disease.
5. Describe the variations in hepatitis and liver cirrhosis from alcohol and non-alcohol sources.
6. Outline the similarities and differences between Type 1 and Type 2 diabetes mellitus and their effects on pancreatic function.
7. Explain how gallstones form and have a negative effect on gallbladder function.
8. Predict the effects on the urinary system due to kidney dysfunction and renal failure.
9. Identify significant urinary tract infections
10. Research a disease/pathologic condition that is personally meaningful for the Physical and Social Disease Impact Final Project.

Competencies
A  
A, B  
A  
A, C  
A, B  
A  
A  
A  
A, B, C

MODULE 4

Outcomes
1. Outline the types of nervous system paralysis, neural tube defects, and hydrocephalus.
2. Discuss the concept, etiology, pathogenesis, clinical manifestations, diagnosis, and treatment of the two types of a Cerebrovascular Accident (CVA) including risk factors.
3. Compare and contrast the types of meningitis (bacterial, viral, fungal, amoebic) including symptoms, sources of infection, treatments, and prognosis.
4. Identify the causes and effects of Alzheimer's Disease, Multiple Sclerosis, Parkinson's Disease, Huntington's Disease, and ALS (Amyotrophic Lateral Sclerosis).
5. Confirm the causes and effects of infections of the male and female genital tract (vaginitis, pelvic inflammatory disease, gonorrhea, HPV (Human Papilloma Virus), endometriosis.
6. Identify the different outcomes resulting from altered pituitary, thyroid, and adrenal gland function.
7. Understand the significant diseases of the integumentary system including acne, eczema, psoriasis, and dermatitis.
8. Differentiate between the significant diseases of the eyes and ears including cataracts, glaucoma, vertigo, and tinnitus.
9. Research a disease/pathologic condition that is personally meaningful for the Physical and Social Disease Impact Final Project.

Competencies
A  
A, B  
A

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## Module 5

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Examine diseases resulting from chromosomal abnormalities (Turner Syndrome, Klinefelter Syndrome, Fragile X Syndrome, Down Syndrome, Lowe Syndrome, NF-1).</td>
<td>A</td>
</tr>
<tr>
<td>2 Outline common genetically transmittable diseases (achondroplasia, adult polycystic kidney disease, phenylketonuria, Tah-Sachs Disease).</td>
<td>A</td>
</tr>
<tr>
<td>3 Discuss concept, etiology, pathogenesis, clinical manifestations, diagnosis, and treatment of spina bifida.</td>
<td>A, B</td>
</tr>
<tr>
<td>4 Outline developmental disorders (Autism Spectrum Disorder, Cerebral Palsy).</td>
<td>A, C</td>
</tr>
<tr>
<td>5 Identify the pathologies associated with common childhood diseases (measles, mumps, mononucleosis, RSV, impetigo, pertussis).</td>
<td>A</td>
</tr>
<tr>
<td>6 Research a disease/pathologic condition that is personally meaningful for the Physical and Social Disease Impact Final Project.</td>
<td>A, B, C</td>
</tr>
</tbody>
</table>
**Grading and Evaluation**

**Methods**

Evaluation includes a combination of discussion participation, assignments, and other evaluations. Rubrics are provided for assignments and discussions.

**Grading Policies**

Mark all Module due dates on your calendar for this class. You may submit assignments AHEAD of schedule. Late assignments will not be accepted without prior approval.

Assignments and discussions will be given throughout the term with set due dates. See the Course Schedule page for these dates, and make note of them in your calendar. The instructor will communicate any changes to these due dates to the class. If you have an emergency resulting in a missed due date, contact the instructor as soon as possible. No late work is accepted in this course (except in the case of documented emergencies, such as a doctor’s note, military papers, etc.). Due dates will be enforced. Please remember, due to the nature of an online course, it is the student’s responsibility to have access to a functioning computer in order to complete the coursework. **Late assignments will not be accepted without prior approval.**

Your final grade in this course will be based on the total points that you earn. The grades are final and non-negotiable. They are a measure of your own aptitude and effort. It is expected that you will accept your own performance as an integral part of yourself.

**Summary of Grading**

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Points</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case Study Observation Discussions (5 @ 30 points each)</td>
<td>150</td>
<td>13%</td>
</tr>
<tr>
<td>Research Summary Discussions (5 @ 50 points each)</td>
<td>250</td>
<td>23%</td>
</tr>
<tr>
<td>Informational Table and Flowchart Assignments (5 @ 60 points each)</td>
<td>300</td>
<td>28%</td>
</tr>
<tr>
<td>Physical and Social Disease Impact Project</td>
<td>300</td>
<td>28%</td>
</tr>
<tr>
<td>Physical and Social Disease Impact Reflection</td>
<td>50</td>
<td>4%</td>
</tr>
<tr>
<td>Quizzes (5 @ 10 points each)</td>
<td>50</td>
<td>4%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1100</td>
<td>100%</td>
</tr>
</tbody>
</table>

**Grading Scale**

A = 90 to 100%  B = 80 to 89%  C = 70 to 79%  D = 60 to 69%  F = 59% and below
DISCUSSIONS

1. For the Case Study Observation discussion, you will provide your initial thoughts and interpretation of the medical case study as well as respond to the provided questions about the scientific context of the case.

2. As part of the Case Study Observation discussion, it is expected that you post an initial post and at least two follow-up posts. Initial posts all have a minimum length of 300 words, and both replies must be at least 50 words. Do not aim to do the minimum.

3. For the Research Summary discussion, you will need to seek out at least one credible medical/scientific website to use in your 300-word minimum response to the provided questions.

4. Discussions are a very important part of this class experience and cannot be made up after each week’s discussion ends. Discussions are where we can examine applications of course content. Students benefit from other class members’ contributions and questions.

ASSESSMENTS

RESEARCH AND SUMMARY

1. There are no specific textbook readings for this class. A major component of this class is to develop your researching skills. The Research and Summary is meant to provide a way for you to refine your research skills and share resources with others. This is why we are completing this assignment on the discussion board.

2. You will be searching out at least one credible medical/scientific article to read and use to answer the questions provided. The more you read, share, and explore, the more you will learn. You should take the initiative to expand your knowledge and find sources that you think will benefit your educational interests.

3. You can conduct your research through the CCCOnline Library. If you go to the Library’s Research and Database resource page and click Biology, you will see the many resources about biology to which the Library has access. Also, you can explore the curated resources that have been prepared specifically for the biology classes.

4. There will be an additional discussion component to this assignment each week in which you respond to classmates’ posts. Again, the discussion is a very important part of this assignment and cannot be made up after each week’s discussion ends. You will be expected to post your initial research and summary at the designated time before the due date, so the class will have time to read and respond to your posting before the due date. For specific grading information, see the Disease Analysis Journal Rubric under the Tools dropdown menu in your toolbar.
RESEARCH AND REPORTS (INFORMATIONAL TABLES AND FLOW CHARTS)

Your Research and Report assignment will be assessed each module. The purpose of these reports is to demonstrate your understanding of the module challenge. These are due according to your course schedule.

1. All submission flow charts or informational tables should be well-organized and labeled.
2. If there are additional questions to answer for the assignment, answer them below your flow chart/informational table.
3. These provide an application and synthesis of what you have learned through your exploration and case study analysis. You may need to conduct additional research to answer all components.

PHYSICAL AND SOCIAL DISEASE IMPACT PROJECT (FINAL PROJECT)

This assessment allows you to choose a medical condition that is most interesting to you. The purpose of the project is to have you become familiar with such things as the symptoms, signs, diagnostic tests and procedures, and common complications of your selected medical condition as you prepare an informational pamphlet. You will work on this project throughout the course. The instructions for the project are posted in each module.

1. You have to use at least three references cited according to the provided instructions.
2. Please reference the Physical and Social Disease Impact Rubric for project grading criteria.

QUizzes

There will be a short, 10-question vocabulary quiz at the end of each Module. The quiz will cover the Module's vocabulary as found in each Exploration.

WRITING ASSISTANCE

If you need help with the writing in this course, here are two great tools that may make the writing process a bit easier.

- CCCOnline Library has created a writing guide that offers help with grammar and sentence structure, and offers tips for the writing process.
- The Purdue OWL has a writing process guide that goes over some tips for the writing process.
COURSE SCHEDULE
The Schedule is subject to change as needed.

This page summarizes all of the graded assignments, discussions, quizzes, and reading assignments for the course. If you want, you can print it out and post it somewhere handy.

All assignments are described in detail on the Module assignment pages. If you have questions check there and/or send me an e-mail.

This course is not self-paced and is not open-exit. All assignments, quizzes, discussions, etc., are to be completed by no later than 11:59 pm MST/MDT of the due date.

NOTE: Important CCCOnline semester dates (e.g., drop/withdraw/term end) appear on the CCCOnline calendar.

MODULE 1
Reading/Assignments/Exams Due Dates
Read and review materials in Exploration
Student Introductions in the discussion board
Case Study observations and replies in the discussion board
Pathogen Disease research and replies in the discussion board
Informational table/flowchart in Assignments
Review expectations for Physical and Social Disease Impact Project
(nothing due until M4)
Module 1 Quiz
N/A

MODULE 2
Reading/Assignments/Exams Due Dates
Read and review materials in Exploration
Case Study observations and replies in the discussion board
Diseases of the Immune System research and replies in the discussion board
Informational table/flowchart in Assignments
Physical and Social Disease Impact Project topic choice
Module 2 Quiz
NA

MODULE 3
Reading/Assignments/Exams Due Dates
Read and review materials in Exploration
Case Study observations and replies in the discussion board
Cirrhosis of the Liver research and replies in the discussion board
Informational table/flowchart in Assignments
Physical and Social Disease Impact Project
Module 3 Quiz
NA
**Module 4**

**Reading/Assignments/Exams**
Read and review materials in Exploration
Case Study observations and replies in the discussion board
Thyroid Disease research and replies in the discussion board
Informational table/flowchart in Assignments
Physical and Social Disease Impact Project due
Module 4 Quiz

**Module 5**

**Reading/Assignments/Exams**
Read and review materials in Exploration
Case Study observations and replies in the discussion board
Autism Spectrum Disorder research and replies in the discussion board
Informational table/flowchart in Assignments
Physical and Social Disease Impact Project reflection due
Module 5 Quiz