

**TSCI 6105**  
**Topics In Cancer Prevention**

Fall 2017

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**CLASS DAYS and TIME:** Fridays – 11:00 AM to 12:00PM

**CLASSROOM:** AL&TC Building Room 2.211

**COURSE FACULTY:** Michael J. Wargovich, Ph.D.

**OFFICE LOCATION and HOURS:** MCD 5.542, Fridays 9-1030A

**EMAIL:** [wargovich@uthscsa.edu](mailto:wargovich@uthscsa.edu)

**TELEPHONE:** 210-567-8230

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**COURSE DESCRIPTION AND OBJECTIVES**

This course address current topics in cancer prevention science through a series of didactic lectures and discussions with cancer prevention faculty. Topics span the continuum of cancer prevention from basic cancer epidemiology and carcinogenesis, to cancers of special relevance in South Texas and interventions. An exposure to prevention clinical trials and disparity research will also be presented. Consent of instructor is required for registration.

**Pre-requisites** – None

**Semester credit hours** – 1 Credit hour

By the end of this course, each student should be able to:

- Have a thorough understanding of the discipline of cancer prevention
- Have an introduction to cancer epidemiology.
- Understand what the causes and prevention of common cancers.
- Have an introduction to prevention strategies.
- Understand cancer disparities, outcome research, and prevention clinical trials.

**COURSE ORGANIZATION**

**The main teaching modalities used in this course include:**

- 1) Didactic lectures and discussions

**Materials** – Two textbooks will be made available as pdfs to enrolled students

**Computer Access** – Labtop would be helpful

**Reading Assignments** – Individual lectures will have reading assignments

**ATTENDANCE**

Only one excused absence

## TEXTBOOKS

### Required:

- 1) Fundamentals of Cancer Prevention, David S. Alberts, Lisa M. Hess (Eds), 2d edition Springer 2008
- 2) Food, Nutrition, Physical Activity, and the Prevention of Cancer: A Global Perspective World Cancer Research Fund

**Recommended:** [Click here to enter text.](#)

## GRADING POLICIES AND EXAMINATION PROCEDURES

Describe in detail how grades for assignments/projects/tests will be weighted and factored into final grades, also include other information relevant to grading if applicable – for example information about extra credit, examination protocol, make-up exams, etc.

### Grading System

The scale below may be used to grade exams: however, the course is graded as Satisfactory (S)/Unsatisfactory (U)

A = 90-100%    B = 80-89%    C = 70-79%    F = < 69%

## REQUESTS FOR ACCOMODATIONS FOR DISABILITIES

In accordance with policy 4.2.3, **Request for Accommodation Under the ADA and the ADA Amendments Act of 2008 (ADAAA)**, any student requesting accommodation must submit the appropriate request for accommodation under the American with Disabilities Act (ADA, form 100). to his/her appropriate Associate Dean of their School and a copy to the ADA Coordinator. Additional information may be obtained at <http://uthscsa.edu/eoo/request.asp>.

## ACADEMIC INTEGRITY AND PROFESSIONALISM

Any student who commits an act of academic dishonesty is subject to discipline as prescribed by the UT System Rules and Regulations of the Board of Regents. Academic dishonesty includes, but is not limited to, cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an exam for another person, signing attendance sheets for another student, and any act designed to give unfair advantage to a student or the attempt to commit such an act. Additional information may be obtained at <http://catalog.uthscsa.edu/generalinformation/generalacademicpolicies/academicdishonestypolicy/>

## TITLE IX AT UTHSCSA

### **Title IX Defined:**

Title of the Education Amendments of 1972 is a federal law that prohibits sex discrimination in education. It reads “no person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance.”

### **University of Texas Health Science Center San Antonio’s Commitment:**

University of Texas Health Science Center San Antonio (UTHSCSA) is committed to maintaining a learning environment that is free from discriminatory conduct based on gender. As required by Title IX, UTHSCSA does not discriminate on the basis of sex in its education programs and activities, and it encourages any student, faculty, or staff member who thinks that he or she has been subjected to sex discrimination, sexual harassment (including sexual violence) or sexual misconduct to immediately report the incident to the Title IX Director.

In an emergency, victims of sexual abuse should call 911. For non-emergencies, they may contact UPD at 210-567-2800. Additional information may be obtained at <http://students.uthscsa.edu/titleix/>

## EMAIL POLICY

UTHSCA email will be used as well as CANVAS

### **USE OF RECORDING DEVICES**

With instructor's permission

### **ELECTRONIC DEVICES**

Describe in detail course policy on the use of electronic devices such as cell phones, computers, tablets, etc.)

At the end of the syllabus include a detailed class schedule (see example below), which includes class dates, topic or title of lessons, reading or assignment due dates, test dates, and other important events such as holidays, etc. It is a good idea to clearly identify the class schedule as TENTATIVE, depending upon the progress of the class.

**FINAL CLASS SCHEDULE**  
**TSCI 6105**  
**Topics in Cancer Prevention**  
**Fall 2017**

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<b>WEEK</b>	<b>DATE</b>	<b>TOPIC</b>	<b>Assignment</b>	<b>Instructor and Modality</b>
Week 1	8/25	Course Introduction and Overview		WARGOVICH
Week 2	9/1	Cancer Epidemiology		CUNNINGHAM
Week 3	9/8	Basic Carcinogenesis		KUMAR
Week 4	9/15	Chemoprevention		WARGOVICH
Week 5	9/22	Infectious Cancers		LONG-PARMA
Week 6	9/29	Breast Cancer		KAKLAMANI
Week 7	10/6	Disparity and Dissemination Research		HOLDEN
Week 8	10/13	GI Cancers		TENNER
Week 9	10/20	Oral Cancer		GONZALES
Week 10	10/27	MID-TERM – CLASS PRESENTATIONS		WARGOVICH
Week 11	11/3	Cancer in Texas		CHALELA
Week 12	11/10	Prevention Strategy: Diet and Physical Activity		PATEL
Week 13	11/17	Prevention Research: Animal Models		MORRIS
Week 14	11/24	THANKSGIVING-NO CLASS		
Week 15	12/1	Pediatric Cancers and Genetic Screening		TOMLINSON
Week 16	12/8	Ethics in Cancer Prevention		TENNER
Week 17	12/15	FINAL EXAM		WARGOVICH

## **TOPICS IN CANCER PREVENTION**

### Lesson Objectives for Individual Sessions

The Lesson Objectives listed below are to be used as a guide to the most essential questions that you should consider in your studies. However, do not view these lists as the “end-all” as you devise your study strategies. Anything covered in reading assignments, online activities, or discussed in class is to be considered “testable”.

<b>WEEK</b>	<b>TOPIC</b>	<b>Lesson Objectives</b>
<b>1</b>	<b>Introduction and Overview</b>	<p>Cancer prevention is a complex discipline ranging from basic Laboratory research through clinical trials. An overview of the course will be presented and expectations set.</p> <p><b>Learning Objectives and Competencies– Participants will be able to understand:</b></p> <ol style="list-style-type: none"><li>1. Have a global understanding of causes of cancer and its prevention</li><li>2. Recognize the signs and symptoms of cancer</li><li>3. Become familiar with most common cancers.</li><li>4. Understand present cancer trends and future risks</li><li>5. Overview of course.</li></ol>
<b>2</b>	<b>Cancer Epidemiology</b>	<p>Cancer epidemiology sets the framework for intervention trials in humans.</p> <p><b>Learning Objectives and Competencies- Participants will be will be able to:</b></p> <ol style="list-style-type: none"><li>1. Understand the history and development of cancer epidemiology</li><li>2. Recognize and interpret the most common statistical methods used in cancer epidemiology</li><li>3. Identify tools to understand and describe trends and variation in cancer burden</li><li>4. Describe future trends in cancer epidemiology research and collaboration</li></ol>
<b>3</b>	<b>Basic Carcinogenesis</b>	<p>The basic aspects of carcinogenesis will be presented.</p> <p><b>Learning Objectives and Competencies– Participants will be able to understand:</b></p> <ol style="list-style-type: none"><li>1. History of Carcinogenesis</li><li>2. Carcinogenic factors</li><li>3. Gene-environment interactions</li><li>4. Genes involved in carcinogenesis</li><li>5. Cancer prevention and carcinogenesis.</li></ol>

4	<b>Chemoprevention</b>	<p>Chemoprevention is a strategy for intervening on cancer early to prevent primary cancer or recurrent cancer. Natural products and drugs will be highlighted as illustrations.</p> <p><b>Learning Objectives and Competencies– Participants will be able to understand:</b></p> <ol style="list-style-type: none"> <li>1. History of Chemoprevention</li> <li>2. Types of Agents</li> <li>3. Chemoprevention Drug Development</li> </ol>
5	<b>Infectious Cancers</b>	<p>The lecture will focus on hepatocellular cancer and HPV Influence on cancers and strategies for their prevention.</p> <p><b>Learning Objectives and Competencies– Participants will be able to:</b></p> <ol style="list-style-type: none"> <li>1. Have a general understanding of Hepatocellular Carcinoma (HCC) and Cervical Cancer (CC) burden of disease in the U.S.</li> <li>2. Become familiar with specific viral causes of HCC and CC: Hepatitis B and C (HBV/HCV) and Human Papilloma Virus (HPV)</li> <li>3. Describe current strategies targeting HBV/HCV for prevention of Hepatocellular Carcinoma</li> <li>4. Describe current strategies for Cervical Cancer prevention (screening and HPV vaccination)</li> </ol>
6	<b>Breast Cancer</b>	<p>Breast cancer is a major cancer affecting women. The types of breast cancer, their etiologies, and clinical course will be discussed</p> <p><b>Learning Objectives and Competencies– Participants will be able to understand:</b></p> <ol style="list-style-type: none"> <li>1. Risks for developing breast cancer</li> <li>2. Preventing breast cancer through chemoprevention</li> <li>3. Surgical approaches to breast cancer prevention</li> </ol>
Move to 15	<b>Pediatric Cancers/Genetic Screening</b>	<p>Pediatric cancer has been a success story for some types of childhood cancers. This lecture will focus on the role of genetic testing in unraveling the etiology of childhood cancer.</p> <p><b>Learning Objectives and Competencies– Participants will be able to:</b></p> <ol style="list-style-type: none"> <li>1. Be familiar with Pediatric cancer predisposition syndrome for which surveillance is beneficial in enhancing cancer early detection</li> <li>2. Know the familial ramifications of Li-Fraumeni Syndrome</li> <li>3. Understand the process and ethical considerations of genetic testing in children.</li> </ol>
8	<b>GI Cancers</b>	<p>Colorectal cancer is a common cancer in the US and is increasing across the world. The etiology and strategies for its prevention will be discussed.</p> <p><b>Learning Objectives and Competencies– Participants will be able to:</b></p>

1. To identify the difference between germline and somatic mutations in colon cancer and know the more common germline colon cancer mutations
2. To identify the common primary, secondary and tertiary prevention in colon cancer
3. To identify potential future pathways of research for colon cancer prevention

**9 Oral Cancer**

Oral cancer is 8<sup>th</sup> most common cancer in the US and its incidence is increasing worldwide. This lecture will focus on current strategies for prevention and treatment of this disease.

**Learning Objectives and Competencies– Participants will be able to:**

1. Have a general knowledge of the existence and magnitude of cancer-related health disparities experienced by South Texans.
2. Identify modifiable factors that contribute to differences in incidence, prevalence, morbidity and mortality
3. Describe prevention strategies and key areas where public health efforts should be focused.

**11 Cancer in Texas**

The Lone Star State has some unique aspects to its cancer burden and this lecture will focus on special risk due to health disparities in our population.

**Learning Objectives and Competencies– Participants will be able to:**

1. Have a general knowledge of the existence and magnitude of cancer-related health disparities experienced by South Texans.
2. Identify modifiable factors that contribute to differences in incidence, prevalence, morbidity and mortality
3. Describe prevention strategies and key areas where public health efforts should be focused.

**12 Preventive Strategy: Diet/Exercise**

Two of the more successful intervention strategies in the area of cancer prevention have been modifying dietary habits and implementing exercise.

**Learning Objectives and Competencies– Participants will be able to:**

1. Have general knowledge of the benefits of physical activity and diet in cancer prevention
2. Describe the role physical activity and diet have in cancer prevention
3. Understand the role of physical activity and diet in relation to cancer survivorship and quality of life
4. Have basic understanding of the role of phytochemicals in the prevention of cancer
5. Have general knowledge of the physiological mechanisms associated with physical activity and cancer prevention

13	<b>Preventive Research Animal Models</b>	Basic research has revolutionized the utility of animal models in cancer prevention. Historical models using carcinogens, transgenic animal models, and knockout technologies will be discussed.
		<b>Learning Objectives and Competencies– Participants will be able to:</b>
		<ol style="list-style-type: none"> <li>1. Understand the differences between ectopic, genetically susceptible, and conditional cancer models.</li> <li>2. Describe the various methods of application of carcinogens to induce cancer in animal models.</li> <li>3. Understand the various methods for prevention intervention applications in animal models.</li> </ol>
Move to 7	<b>Disparity and Dissemination Research</b>	How to deal with cancer disparity in prevention of cancer and how prevention research progresses from the laboratory to public health will be discussed.
		<b>Learning Objectives and Competencies– Participants will be able to:</b>
		<ol style="list-style-type: none"> <li>1. To know the CDC definition of “disparity”</li> <li>2. To identify the most important factors involved in the existence of cancer disparities</li> <li>3. To identify successful and potential future pathways for the reduction/elimination of cancer disparities</li> </ol>
16	<b>Ethics in Cancer Prevention</b>	Ethical issues in the age of genomic testing test the limits of doctors and relationship with their patients. When is a treatment ethical?
		<b>Learning Objectives and Competencies– Participants will be able to:</b>
		<ol style="list-style-type: none"> <li>1. To be able to define Clinical Equipoise and Therapeutic Misconception</li> </ol>