

## SYLLABUS

### COURSE INFORMATION

ES 210/PUB 211 BEHAVIOR DRIVEN DISEASE – A GLOBAL EPIDEMIC

**Dates:** Winter Session, 2019; Jan 7 – Jan 23

**Location:** Study Abroad in Jamaica, The University of the West Indies, Mona.

**Credits:** 3.

**Minimum overall GPA:** 3.0

**Global Pathways:** This course can be used to partially fulfill the Global Pathways requirement.

**Instructor:** Harold Burton, PhD

422 Kimball Tower, South Campus

716 829-6784

[hburton@buffalo.edu](mailto:hburton@buffalo.edu)

### COURSE DESCRIPTION

This study abroad course will allow student participants to explore how lifestyle choices are linked to obesity and overweight from 2 perspectives – the United States and Jamaica. The U.S. has one of the highest obesity rates in the world – approximately 37% of the adult population is obese. Jamaica's rate is currently about half that, standing at 20%, but is increasing at an alarming rate. The primary objective of this course is to have the students identify and describe factors that contribute to the lower prevalence in Jamaica, but more importantly to elucidate circumstances that surround the precipitous rise in obesity.

To satisfy these objectives, students will attend classroom sessions before departure to learn how cultural evolution in the U.S. (as distinct from biologic evolution) has created an environment of abundance and comfort, leading to widespread overconsumption of food and physical inactivity. In Jamaica, participants will interact with faculty and students in health-related disciplines at the University of the West Indies in Kingston, will explore markets and farms in the area to determine the availability and cost of fresh food and will visit various restaurants and other food outlets to assess nutritional value of prepared food. Through observation, immersion, and interaction, students will also explore daily physical activity patterns among individuals in different settings – city, village/town, and rural – to make comparisons and analyze conclusions. Students will also engage and interact with obesity practitioners and patients during visits to community health centers and clinics.

A secondary objective is to have students use information they gather to explore mechanisms through which physical inactivity and poor nutrition are linked to high risk for contracting heart disease and diabetes and how adopting an active lifestyle and better eating habits can reduce risk, increase quality of life and delay the onset of debilitating illness later in life.

### COURSE RATIONALE

The World Health Organization has identified overweight and obesity as major global health concerns that afflict almost 2 billion adults worldwide. These conditions largely result from unhealthy lifestyles and greatly increase the risk of developing heart disease and type II diabetes – two leading causes of death around the world. Treating and managing these diseases costs billions of dollars each year, creating a huge financial burden on a country’s health-care system. But, if we can find a way to get the majority of our world population to make healthier lifestyle choices, a simple and effective way to reduce risk and help manage existing disease, much of this burden can be eliminated. Two behaviors in particular that increase the risk of obesity and overweight are sedentary lifestyles and poor nutrition. Obesity (and related behavior driven diseases) is not only a global health concern, it is the number 1 public health problem in the U.S. In addition, the Jamaican Minister of Health has identified the prevalence of chronic non-communicable diseases as one of the major concerns of his Ministry.

This experiential learning program will enable students in health related fields to compare lifestyle behaviors related to food intake and physical activity between a culture they would typically not know (Jamaica) and our culture in the U.S. and to transfer these lessons and experience to UB and to their own communities and professions upon their return. The course aligns with the objectives of UB’s Global Pathways in that it provides an international experience for participating students. Finally, this program fits into the mission of the School of Public Health and Health Professions which is to .... *“promote the understanding, prevention and treatment of disease and disability, thereby improving the health of populations, communities and individuals from regionally to globally.”*

### STUDENT LEARNING OUTCOMES

Having completed this Study Abroad Course, students will be expected to achieve the following learning outcomes:

| Course Learning Outcome  | Delivered through the Following Instructional Method(s):  | Student Achievement Assessed with the Following Method(s)/Assignments:   |
|--|---|--|
| 1. Distinguish between cultural and biologic evolution describe how this divergence has led to obesity and behavior-driven disease | assigned readings; on-line and in-class lecture; facilitated discussion   | Quizzes; meaningful participation in facilitated discussions; group projects; final project; positive in-country participation |
| 2. Enhanced problem-solving and critical thinking skills   | assigned readings; immersion in a different culture; facilitated discussion and reflection; planned activities and meetings | Quizzes; meaningful participation in facilitated discussions; group projects; final project; positive in-country participation |
| 3. Develop essential research skills; collect and collate data related to lifestyle and prevalence of obesity.                     | Immersion in a different culture; observe and interview individuals in different settings (city, small town, rural)         | Quizzes; meaningful participation in facilitated discussions; group projects; final project; positive in-country participation |
| 4. Demonstrate proficiency in oral discourse and written communication.  | facilitated discussion and reflection; planned activities and meetings  | Quizzes; group projects; meaningful participation in facilitated discussions; final project;                                   |

| Course Learning Outcome                      | Delivered through the Following Instructional Method(s):                         | Student Achievement Assessed with the Following Method(s)/Assignments:                                 |
|--|--|--|
| 5. Enhanced global and cultural competencies | Compare cultural values, lifestyle and perspectives between the U.S and Jamaica. | Meaningful participation in facilitated discussions; final project; positive in-country participation. |

## **COURSE REQUIREMENTS**

**Course Format:** This course emphasizes experiential learning through immersion in Jamaican culture. Students will spend 3 days in Buffalo reviewing and discussing basic concepts and theories related to Evolutionary Discordance, obesity prevalence, basic pathophysiology of cardiovascular disease and Type 2 Diabetes, introduction to dietary assessment, and introduction to Jamaican culture and customs. The group will then travel to The University of the West Indies in Mona, Jamaica and spend 13 days traveling to different sites in Jamaica, observing and interacting with the population.

**The following course requirements are designed to foster reflection, meaningful discussion and to enhance critical thinking skills.**

1. Pre-travel readings, on-line and in-class lectures and discussion.
2. Students will be randomly divided into groups of 4 during the fall orientation. During the course itself, two group projects will be assigned and graded.
3. Positive In-Country Participation: Students are expected to be fully engaged in all aspects of the site visits in Jamaica and contribute in a positive and open manner, demonstrating cultural sensitivity and appropriateness.
4. Final paper. On the last day in Jamaica, each group will submit a final paper, using 4 Major Objectives (see Appendix) as Guidelines.
5. Video Presentation: Also, on the last day, each group will present a short video that tells a story about Jamaican lifestyle, culture and customs.

**Required Readings:** Readings and short animated videos will be posted on UBLearns. These sources of information will supplement on-line lectures and material discussed during the in-class sessions prior to travel to Jamaica.

**Student Expectations:** Students are expected to attend all classes prior to travel, review on-line material **before** in-class sessions and complete all course requirements as outlined above. All students are expected to read the syllabus and comply with codes of conduct as described. Students should realize that while in Jamaica they will be acting as ambassadors for the University at Buffalo. We will visit many sites around the country including community health clinics. As such, a dress code will be in effect – khakis or slacks and collared shirt or polo for both men and women. Optional for women - skirt with blouse. No yoga pants/leggings or shorts. When interacting with

faculty, staff and students at UWI, with clinicians in the field and with the general population, students are expected to be polite, courteous and respectful and demonstrate cultural sensitivity.

**Evaluation**

**Quiz:** (*worth 15% of the final grade*) A short quiz will be administered that covers material presented in the 3 days before departure.

**Small group projects:** Students will randomly be divided into groups of 4 during the fall orientation. During the course one small group project will be assigned and graded (*worth 15 % of the final grade*).

**Positive In-country Participation:** (*worth 20% of the final grade*)

**Final paper:** (*25% of final grade*).

**Video Presentation** (*25% of final grade*)

**Primary Theme:** lifestyle factors that underlie increasing prevalence of obesity and the link to behavior driven disease.

**Secondary Theme:** Prevention and management through exercise and diet.

**Peer Evaluation:** Each individual will anonymously rate the other members of their groups at the end of the course. Individual peer evaluation scores will be the average of the points they receive from the members of their group. A peer evaluation factor will be calculated from the scores and used to determine the final grade for each individual for **group work** only (in-class group projects; final group presentations).

**PROJECTED PROGRAM ITINERARY (Subject to Change)**

| Date  | Location   | Activities  | Assignments/Expectations            |
|---|--|---|-------------------------------------|
| Mon Jan 7<br>(1-3 p.m.)                     | For students in the Buffalo area: Room 17 Norton Hall, North Campus. Students in other areas will participate via Google Hangout | Intro to Evolutionary Discordance, lifestyle and obesity, behavior driven disease.<br><b>NOTE:</b> If necessary, a GoPro Tutorial will be added   | Assigned readings, class discussion |
| Tues Jan 8<br>(10:00 a.m. – 12:00 AND (1-3) | Ditto: Lunch provided  | Morning: Continue Lifestyle and behavior driven disease: Intro to Basic Nutrition: Guest speaker: Rural life in WNY.<br>Afternoon: Medical Model in the U.S. Guest Speaker Jamaican Culture and Customs | Assigned readings, class discussion |
| Wed Jan 9<br>(10:00 – 12:00)                | Ditto  | Introductory Pathophysiology of Type 2 Diabetes and heart disease. Prevention and Management  |                                     |
| Thurs Jan 10                                | Depart   | Arrive at Kingston Airport – transport to UWI campus. Stop and get some food supplies. Get settled in dorm rooms.   | Make a meal plan for breakfasts     |

|                        |  |  |  |
|------------------------|--|--|--|
| Fri Jan 11             | UWI Campus   | Heritage Tour – campus and surrounding area; Interact with faculty and students at UWI.  | Start to gather data about lifestyle, culture.   |
| Sat Jan 12/ Sun Jan 13 | Jan 12 Travel to Mandeville Community Health Clinic. Then travel to Treasure Beach | Shadow, observe and interact with clinic staff and patients.<br>At Treasure Beach, enjoy ocean-side/beach activities! Return to campus on Jan 13.  | Gather data and start to form opinions about lifestyle, diet and physical activity (PA)  |
| Mon Jan 14             | On-campus health clinic, Kingston Public Hospital diabetes clinic                  | Shadow, observe and interact with clinic staff and patients. Short tour of Kingston. Possible date for quiz  | Same   |
|                        |  |  |  |
| Tues Jan 15            | Morning visit to a local produce market. Travel to Port Royal and Lime Key         | What types of produce, cost, nutritional value.<br>Boat Tour of Kingston Harbor. Gather information about the causes of the decline in fish/seafood population. Snorkeling on a reef! Dinner at a famous seafood restaurant. | What part of Jamaican diet consists of fresh vegetables and fruit?<br>Does the decline in availability of seafood affect diet/nutrition? |
| Wed Jan 16             | Travel to a coffee plantation in the Blue Mountains                                | Bicycle tour through a tropical rainforest that includes a visit to a coffee plantation.   | Continue to gather data and form opinions about lifestyle, diet and PA. Rural vs city  |
| Thurs Jan 17           | Day off. Trip to Ocho Rios   | Dunn’s River Falls – and Fun in the sun!   |  |
| Fri Jan 18             | Travel to sustainable organic farm in St Mary Parish.                              | Tour the farm; learn about sustainable and subsistence farming; enjoy a vegetarian meal.   | Continue to gather data and form opinions about lifestyle. Rural vs city   |
| Sat Jan 19             | UWI Campus   | Let’s prepare a Jamaican Meal!   | Each group will provide a dish or 2 for dinner   |
| Sun Jan 20             | Travel to a mountain village and set up a temporary health clinic                  | This activity is conducted in collaboration with the UWI Medical School.   | Collect data on early signs of heart disease and diabetes. Counsel patients  |
| Mon Jan 21             | Morning UWI:<br>Afternoon: Explore Kingston  | Morning: Work on Paper and Video Presentation<br>Afternoon: Observe, interact and engage   | Collect more data – life in the city.  |
| Tues Jan 22            | UWI  | Hand in Paper and Video Presentations  | The last Supper  |
| Wed Jan 23             | Return to Buffalo  |  |  |

## **GRADING POLICY**

A +/- grading system will be used. The course grade is based on the grading scheme outlined below.

Final Grades:

| Grade | Quality Points | Percentage  |
|-------|----------------|-------------|
| A     | 4.0            | 92.5 -100   |
| A-    | 3.67           | 88.5 – 92.4 |
| B+    | 3.33           | 84.5 – 88.4 |
| B     | 3.00           | 80.5 – 84.4 |
| B-    | 2.67           | 77.5 – 80.4 |
| C+    | 2.33           | 74.5 – 77.4 |
| C     | 2.00           | 71.5 – 74.4 |
| C-    | 1.67           | 68.5 – 71.4 |
| D+    | 1.33           | 64.5 – 67.4 |
| D     | 1.00           | 60.5 – 63.4 |
| F     | 0              | < 60.5      |

## **Incomplete Grades**

A grade of incomplete (“I”) indicates that additional course work is required to fulfill the requirements of a given course. Students may only be given an “I” grade if they have a passing average in coursework that has been completed and have well-defined parameters to complete the course requirements that could result in a grade better than the default grade. An “I” grade may not be assigned to a student who did not attend the course. Prior to the end of the semester, students must initiate the request for an “I” grade and receive the instructor’s approval. Assignment of an “I” grade is at the discretion of the instructor.

The instructor must specify a default letter grade at the time the “I” grade is submitted. A default grade is the letter grade the student will receive if no additional coursework is completed and/or a grade change form is not filed by the instructor. “I” grades must be completed within 12 months. Individual instructors may set shorter time limits for removing an incomplete than the 12-month time limit. Upon assigning an “I” grade, the instructor shall provide the student specification, in writing or by electronic mail, of the requirements to be fulfilled, and shall file a copy with the appropriate departmental office. Students must not re-register for courses for which they have received an “I” grade

## **ACADEMIC INTEGRITY**

Academic integrity is a fundamental university value. Through the honest completion of academic work, students sustain the integrity of the university while facilitating the university's imperative for the transmission of knowledge and culture based upon the generation of new and innovative ideas. Please refer to the following link to view examples. <https://catalog.buffalo.edu/policies/integrity.html>

## **ACCESSIBILITY RESOURCES**

If you have any disability which requires reasonable accommodations to enable you to participate in this course, please contact the Office of Accessibility Resources, 25 Capen Hall, 645-2608, and also the instructor of this course. The Office of [Accessibility Resources](#) will provide you with information and review appropriate arrangements for reasonable accommodations.

## MAJOR OBJECTIVES

**Background:** The primary objective of this study abroad program is to identify and describe different factors that contribute to a major health concern in both Jamaica and the U.S. – behavior driven disease. To satisfy this objective, students will attend classroom sessions at UB before departure to learn how cultural evolution in the U.S. (as distinct from biologic evolution) has created an environment of abundance and comfort, leading to widespread overconsumption of food and physical inactivity. In Jamaica students will learn about lifestyle (in particular, physical inactivity and poor nutrition), obesity and chronic diseases such as Type 2 Diabetes and heart disease through observation and immersion in Jamaican culture. The Jamaican Minister of Health has identified the prevalence of chronic non-communicable diseases as one of the major concerns of his Ministry.

### **Specific Objectives**

#### **In Buffalo**

1. Distinguish between cultural and biologic evolution and describe how this divergence has contributed to obesity and behavior-driven disease in the USA.
2. Describe the current Medical Model in the U.S. and discuss the potential contribution to the accelerating incidence of behavior driven disease, in particular heart disease and Type 2 Diabetes.
3. Describe the basic pathophysiology of these two diseases.
4. Elucidate mechanisms whereby physical activity and diet will help prevent these diseases.
5. Summarize the central role of behavior modification in helping to reduce the incidence of heart disease and Type 2 Diabetes.

#### **In Jamaica**

1. **Jamaica is becoming more affluent (or is it?)** The United Nations has classified Jamaica as a developing nation whose economy has transitioned over the past few decades from a base in agriculture and industry to mainly tourism. The per capita income of Jamaica has increased over the past few decades which now positions the country in the category of “upper middle income” compared with other countries around the world.

Is this increase in affluence reflected in changes overall lifestyle (culture, customs, diet, etc)?

Are there distinct classes in this society?

Has this changed the focus of healthcare (e.g. from infectious or communicable diseases to chronic behavior driven disease)?

Have you observed or learned from personal interactions any signs of “Westernization”?

2. **Compare and Contrast the Jamaican Medical Model to the U.S. model. Remember the focus is lifestyle, obesity and behavior driven disease.**

What are your observations or what did you learn through conversations about patient care?

What are major differences/similarities between the U.S. and Jamaica?

Things to consider: Differences in city vs town vs rural – resources (staff, treatment strategies, patient education, community outreach etc.)

Link between lifestyle – prevalence of obesity - Type 2 diabetes, heart disease

What is the role of the Ministry of Health in supporting community Health?

What is Jamaica Move? What is the level of awareness among the population, health care workers, students? How is it being implemented or incorporated into the Medical Model? What are some obstacles or barriers?

### **3. Diet and Exercise**

Where do most citizens get their food? How is it prepared? Nutritional value – calorie dense vs high nutritional value. What is the cost? How does this compare to here (Group project 1)?

How is cuisine related to history, culture, customs.

Jamaica has a population about 2.8 million and they get 2 million tourists a year. Does this impact the availability of or access to food?

Access to fresh produce among poorer families?

Compare between city, town and rural. Also compare between UB and UWI – what differences/similarities are there in food outlets? How does this impact healthy eating at both places?

Also compare activity levels among city and rural.

Who is Usain Bolt? Does his success on the world scene (and that of other track athletes) translate into a more active lifestyle among the general population?

### **4. Food from the Sea.**

Identify factors that have impacted food from the sea as an integral part of the Jamaican diet. Has this changed over time?

Describe the role of Mangrove trees in the ocean ecosystem in Kingston Harbor.

What percentage of the local “catch” goes to the resorts? How much seafood is imported?

Does the general population of Jamaica have access to this food?