Palestine Polytechnic University



Faculty of Applied Sciences

Applied Biology Program

Course Outline

**Dr. Sharaf Al-Tardeh.** **Food Biosafety** 4425 (**2 credits**)

**Classroom:** B+ 611  **Prerequisite Microbiology**

**Office**: : B+ 510   **Fall** 2015

**Office hours**: Assigned on office door **Class Time:** 9:30 - 10:30

**E-mail:** [sharaft@ppu.edu](mailto:sharaft@ppu.edu) **Days:** Mond. & wed.

**Introduction:**

Food biosafety is one of the most important applicable courses in the applied biology program. In this course, the students will introduced to food contaminants and food born disease agents. The student will acquaint the knowledge about international food safety programs such as HACCP and GMP and personal hygiene.

This course was designed to acquaint the students with knowledges based on the **community based learning (CBL)**. The student will establish their own projects with a partners from the local organization of public parties. The partner might be food industries, hospital laundries and cafeterias, cafeterias of official schools and university and even hotels and large and small public restaurants. The student must assign the confidentiality pledge before joining the workplace.

**Community based learning (CBL)** is an academic type of experiential learning which combines community service with explicit academic learning objectives, preparation for community work, and deliberate reflection.

This course is designed based on **discipline-based service-learning**, in which students are expected to have a presence in the community throughout the semester and reflect on their experiences on a regular basis throughout the semester using course content as a basis for their analysis and understanding.

**Course Description:**

This course is designed to provide students with advanced food safety knowledge and skills required to successfully oversee the food safety operations in local food industries. Units covered in this course will meet recognized competency standards in line with the current national food safety guidelines. Lectures will also cover food safety management to provide knowledge that would help Palestinians in safeguard quality and safety throughout the whole food supply chain including raw and semi-manufactured foodstuffs and final products in all principal food segments.

**The Course Objectives:**

1. To familiarize students with the food contamination hazards and prevention.
2. To teach students personal hygiene and responsibilities for food handlers.
3. To familiarize students with the safe food handling procedures.
4. To familiarize students with the food safety programs.
5. To teach students the concepts of food biosafety regulatory guidelines relevant to food production and commercialization.
6. To give students the tools to develop strategic plans to establish food hygiene protocols for local food industries

**General service objectives for community partners:**

1. To set up their own research project form real life through the community, in which monitoring the food agencies and industries and to develop them in progress.
2. To incorporate the student in the community for their personal skills.
3. To illustrate a deliberate connection between the academic content and the community service experience.
4. To offer a free consultancy for food industries, cafeterias etc.
5. To monitor the operation friendly, instead of an official or ordinary chick from governmental party.
6. To help the food industry in solving the problem if present and/or improve the food processing in manufacturing in a better way to guarantee the food safety and quality.
7. To offer a consultancy in hotel management and/or food service in public organization and restaurants.

**Textbooks**

**Food safety theory and practice. (2012). Author: Paul L. Knechtges. Jones & Bartlett Learning. USA.**

At the end of each chapter the “chapter’s review” or “chapter summery” are supposed to help in understanding the topics covered in the chapter. In addition, the “Testing your knowledge” which are found at the end of each chapter, is the responsibility of each student to go through. In addition, students are strongly encouraged to ask questions in lectures and for more detailed discussion students are welcomed at my office during the above office hours.

**References:**

1. Biosafety: Principles and Practices, 4th Edition from the American Society of Microbiology Press (**2006**) (ASM Press).
2. Food Microbiology, An Introduction. 2nd Edition. (**2008**). Authors: Thomas J. Montville and Karl R. Matthews
3. Food Quality Assurance, Principles and Practices. (**2004**). Inteaz Alli. CRC PRESS Boca Raton London New York Washington, D.C.
4. Essentials of food sanitation. **(1997**). Authors:Norman G. Marrot T.
5. Food plant sanitation. (**2002**).Authors: Y. H. Hui, Bernard L. Bruinsma, J. Richard Gorham, Wai-Kit Nip, Phillip S. Tong and Phil Ventresca.

**Course Outline:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Week No.** | **Subject/theoretical part** | **Chapter** | **CBL** | **Grades** |
| 1 | Introduction to nutrition and food technology | 1 | Introduction | 10% |
| 2 | Introduction to food quality and food safety |
| 3-4 | Foodborne infectious and microbial agents | 2 | Research proposal or plan | 10% |
| 5-6 | Food safety: principles of prevention | 4 | Data collection and analysis | 20% |
| **First Exam** | | |
| 7-8 | Food safety: engineering controls and technology | 5 |
| 9 | Personal hygiene and Good manufacturing practices | R1 )) 7 | Results, discussion and conclusion and writing | 20% |
| 10-11 | Risk assessment and hazard analysis of foods | 6 |
| **Second exam** | | | Reflection (difficulties) | 5% |
| 12-13 | Safety management of the food supply | 8 | Thesis or manuscript submission due and evaluation (Annotated bibliography). | 15% |
| 14 | Presentation |  | **Presentation** and evaluation | 20% |
|  |  |  | **Total** | **100%** |
| **Final exam** | | | | |

**Intended Learning Outcomes:** Upon completion of the course the student demonstrates the ability to:

1. Identify the causes of major food borne illness.
2. **Apply standard operating procedures for food safety and food defense** in operation within food industries.
3. Apply regulatory guidelines relevant to commercial release of genetically modified bio-products
4. Demonstrate knowledge to ensure observation of food safety policies and procedures.
5. Demonstrate knowledge sufficient to **identify food safety hazards and to take preventative measures.**
6. **Help establishing a food safety management system** for local food industries as an important step in ensuring control over supply chain in Palestine.
7. Ensure HACCP, meaning Hazard Analysis Critical Control Points, application in restaurants, school food service and other sites to keep food as safe as possible.
8. Identify responsibilities of **food handlers in a food facility**.
9. Demonstrate knowledge sufficient to **ensure safe and hygienic practice in food facilities.**
10. Demonstrate correct use of equipment to ensure food is prepared safely and suitable for human consumption.
11. Demonstrate ability **to implement a food safety program** in a food facility.
12. Determine **effective corrective actions and be able to provide consultation and services for biotechnology industries in Palestine.**
13. Demonstrate an organized and ethical approach to work as a food safety supervisor.

**Action plan:**

Students are almost 40 are divided into 10 groups (4 students each):

|  |  |
| --- | --- |
| **Group #** | **Community workplace** |
| 1 | Regency palace |
| 2 | Al-Amany Hotel |
| 3 | Al-Ahli Hospital (private sector) |
| 4 | Alia Hospital (governmental sector) |
| 5 | PPU cafeteria |
| 6 | Hebron university cafeteria |
| 7 | Al-Husain bin ali secondary school for boys |
| 8 | Wedad Nasr-eddin secondary school for girls |
| 9 | Al-Junidi Dairy plant |
| 10 | Al-Qasrawi Chips plant |

**Outcomes of CBL:**

1. personal outcomes
2. social outcomes
3. learning outcomes
4. career development

**Bioethics regarding to CBL:**

Since CBL courses aims to incorporate the class knowledge into the community, mainly, the business investments i.e., food industries, restaurants, hotels, etc. the confidentiality of the organization steamed all the priorities in the community based learning courses.

Therefore, each student is kindly requested to:

1. Hold in hand the **cover letter** from his academic supervisor or his deputy.
2. Sign the **confidential pledge** before engaging in the community organizations.
3. The **permition of engagement** from both partners, the academic staff and the community staff.
4. At the end of the project, a **confidential evaluation sheet** must be filled from the community partner and given to the academic partner (teacher)

**Class Rules and Evaluation Policies:**

1. An absence from a scheduled test requires a Doctor’s note (or equivalent) to excuse the student. Otherwise a mark of **“0”** is assessed on the evaluation as well as the cheating in the exam.
2. **Class attendance** will be taken every lecture. Absence of a student does not excuse him/her from the responsibility for the work done, or for any announcement made during his/her absence. Absence of more than 6 hours (6 one-hour lectures) during the term without notification or acceptable excuse will result in a course failure.
3. **Turn off your mobile** phone before getting into the class room.

**Assessment Tools :**

The assessment of CBL course is based on the evaluation the practical work and skills rather the pure knowledgs which includes (based on Rubric system):

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Outcomes** | **Outstanding** | **Acceptable** | **Marginal** | **In-progress** |
| **Content-reflections on the stages of the experiential learning cycle** | | | | |
| **Description** | **5** | **4** | **3** | **2-0** |
| * Provide a clear, factual description of experience * Expands ideas and provides detail to create a mental image * Explains abstract concepts accurately * Provides context and explains concepts clearly to an uniformed reader * Selects significant experiences and remains focused on central point |  |  |  |  |
| **Interpretation** | **5** | **4** | **3** | **2-0** |
| * Move beyond simple description of the experience to an analysis of how the experience contributed to an understanding of self, others, community, and/or course concept * Identifies connections between the experience and material from the course learning, other courses; past experience; and/or personal goals. * Draw logical conclusions, provide reasons, explains assumptions, and analyzes complexity of issue. * Considers alternative points of view or thinks about how someone else might have interpreted the situation. |  |  |  |  |
| **Goal-setting** | **5** | **4** | **3** | **2-0** |
| * Questions own biases, stereotypes, preconceptions, and/or assumptions and defines new modes of thinking as a result. * Sets a plan of action for transfer (or not) of learning outcomes. |  |  |  |  |

**Important notes:**

1. Students should not be given a grade for the service hours performed
2. Students are given a grade based on the learning from the service experience.
3. Always remember, you do not grade the service, you grade the learning.
4. At the end of the project, a confidential evaluation sheet must be filled from the community partner and given to the academic partner (teacher)

**Grading system:**

1. **50%** will be devoted for **CBL system** as annotated in the course outline table.

1. **50%** will be devoted for written exams as follow:

First Exam 25%

Second Exam 25%

Quizzes 5%

Course work 5%

Final Exam 40%

Total 100%

**Good luck**

**© Fall 2015 ©**

**Dr. Sharaf Al-Tardeh**