

## **Waste Management Technologies**

### **1 semester Syllabus**

#### **Part 1: Course Information**

##### **Instructor Information**

**Instructor:** Dr. Nina Symaniuk

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##### **Course Description**

The purpose of mastering the discipline "waste management of production and consumption" is familiarization of students with the basics of knowledge in the field of waste management of production and consumption and their disposal, the formation of skills and forecasting of economic damage from environmental pollution by solid waste.

Tasks of discipline development:

- mastering the scientific methodology of the approach to solving the problem of waste as an interrelated ecological, economic and technological problems;
- development of modern technological achievements in the field of resource saving and processing of industrial waste;
- mastering the principles of optimization of the sanitary cleaning system of the city from solid municipal waste.

##### **Prerequisite**

Basics of Waste Management Programs Development

##### **Textbook & Course Materials**

###### **Required Text**

1. Bobovich, B. B. waste Management: Textbook [Electronic resource] / B. B. Bobovich. - 2nd ed., ISPR. and additional - M.: Forum: SIC INFRA-M, 2015. - 104 p. - (Higher education: Bachelor) . — Mode of access: <http://znanium.com/bookread2.php?book=492711>
2. Ksenofontov, B. S. environmental Protection: biotechnological bases: Educational manual [Electronic resource] / Ksenofontov B. S.-M.: ID FORUM, SIC INFRA-M, 2016. - 200 PP.: (Higher education. ) — Mode of access: <http://znanium.com/bookread2.php?book=528520>
3. Yasoveev, M. G. Industrial ecology: Textbook [Electronic resource] / M. G. Yasaveev, E. V. Kakareka etc.; Under the editorship of M. G. Yasaveev. - M.:

research center INFRA-M; PL.: New.knowledge, 2013. -292 p: (Higher education: Bachelor's degree). — Access mode:<http://znanium.com/bookread2.php?book=404991>

### **Recommended Texts & Other Readings**

1. Glukhovskaya, M. Yu. Assessment of production processes of the enterprise by the degree of low waste and non-waste [Text] / M. Yu. Glukhovskaya, T. N. kholodilina. - Orenburg: go OSU, 2008.- 11C.
2. Glukhovskaya, M. Yu. Calculation of payment for waste disposal [Text]: method.directions / M. Yu. A. Glukhov, T. N. Kholodilin. - Orenburg: go OSU, 2008. - 18 p.
3. Palgunov P. P., Suparokov M. V. Utilization of industrial waste. - Moscow: Stroizdat, 1990. - 352c.
4. Maksimov, V. F. Waste-free technology and processing of solid waste production: lecture notes / V. F. Maksimov. - L. : [B. I.], 1975. - 236 p.
5. Abrosimov, A.V. The use of space images and geoinformation technologies for monitoring places of waste storage / A.V. Abrosimov, D. B. Nikolsky, L. V. Sheshukova // Ecology of urbanized territories, 2014. - No. 1. - Pp. 38-43.

### **Course Requirements**

- Internet connection
- Multimedia equipment

### **Course Structure**

**Lectures and reading materials.** Participating in the lectures and reading the assigned papers are the most essential parts of the course. All enrolled students are therefore expected to participate in all lectures and read all assigned papers.

**Seminars.** The seminars are organized and conducted by the Instructor. The student performance at the seminars will be assessed based on three criteria: attendance, preparedness, and activity.

**Assignments.** For each part of the course there will be an individual assignment to write a short paper addressing a specific question. The assignments will be graded and commented by the Instructor with one paragraph of comments.

**Points for participation** in role-plays and discussions are awarded if the students use additional information from supplementary readings and make explicit reference to the author and to the book/article they have used.

**Mid-term exam** consists of a multiple choice test of 20 questions that deal with terms, ideas, and facts covered during the previous weeks and a short (not exceeding 250 words) written answer to one of two questions based on material covered within the previous weeks.

**Group presentation.** A PowerPoint (or Prezi, or OpenOffice) presentation of 20-25 slides prepared by a working group (depending on the number of students in the class but not more than four students in a group) on one of the issues covered in the course. The presentation will be followed by a Q and A session. Presenters are expected to demonstrate their use of theoretical and methodological tools discussed during the

course for analysis of the subject of their presentation.

**Final Exam** consists of an open-ended test that requires short (1-3 sentences) responses to 100 questions based on the material covered within the course and a short academic essay (200 words) on one of three suggested topics.

## **Part 2: Student Learning Outcomes**

As a result of mastering the discipline the student:

Know:

- directions of transition of production processes to low-and waste-free cycles of production as a basis of prevention of technogenic catastrophes;
- the most important achievements of science, technology and best practices in the field of waste management of production and consumption;
- basic properties of ecological systems and their regularities principles of formation of solid industrial and municipal waste;
- legal aspects in the field of industrial waste management and consumptions
- to assess the ecological state of the environment to ensure technosphere safety;
- to measure the levels of danger in individual components Analyze, analyze and process the results;
- To possess: experience of carrying out field researches and experimental work, for the purpose of mastering skills of orientation in the main problems of technosphere safety;
- skills in making forecasts of possible negative impact;
- skills in determining the hazard class of waste in relation to natural environment;
- ability to make payments for waste disposal;
- the most important achievements of science, technology and best practices in the field of waste management of production and consumption;
- methods and mechanisms of research. Rules for filling out annual statistical reports in the form-2 TP
- fill in the hazardous waste passport;
- determine the hazard class, payments for waste disposal

Own:

- skills of the analysis and interpretation of the received data at carrying out scientific and applied researches;
- skills of work with FCCO

**Part 3: Topic Outline/Schedule**

**Week 01:** Methods and technologies of waste processing production and consumption

**Week 02:** Methods and technologies of waste processing production and consumption

**Week 03:** Methods and technologies of waste processing production and consumption

**Week 04:** Methods and technologies of waste processing production and consumption

**Week 05:** Methods and technologies of waste processing production and consumption

**Week 06:** Principles of municipal waste and recycling management

**Week 07:** Principles of municipal waste and recycling management

**Week 08:** Principles of municipal waste and recycling management

**Week 09:** Principles of municipal waste and recycling management

**Week 10:** Principles of municipal waste and recycling management.

**Week 11:** Principles of municipal waste and recycling management.

**Week 12:** Legal aspects in the field of waste management of production and consumption

**Week 13:** Legal aspects in the field of waste management of production and consumption

**Week 14:** Legal aspects in the field of waste management of production and consumption

**Week 15:** Legal aspects in the field of waste management of production and consumption

**Week 16:** Legal aspects in the field of waste management of production and consumption

**Part 4: Grading Policy****Graded Course Activities**

<b>E C T S Grade</b>	<b>Points</b>	<b>Russian grade</b>
A	100-91 points	“excellent”: 100–80 points
B	90-81	
C	80-71	“good”: 79– 60 points
D	70-61	
F : failed	less than 60 points: failed	“satisfactory”: 59–40 points
		“unsatisfactorily”: failed, less than 40 points

**Part 5: Course Policies****Attend Class**

Students are expected to attend all class sessions as listed on the course calendar.

**Build Rapport**

If you find that you have any trouble keeping up with assignments or other aspects of the course, make sure you let your instructor know as early as possible. As you will find, building rapport and effective relationships are key to becoming an effective professional. Make sure that you are proactive in informing your instructor when difficulties arise during the semester so that they can help you find a solution.

**Complete Assignments**

Assignments must be submitted by the given deadline or special permission must be requested from instructor *before the due date*. Extensions will not be given beyond the next assignment except under extreme circumstances.

All discussion assignments must be completed by the assignment due date and time. Late or missing discussion assignments will affect the student’s grade.

**Commit to Integrity**

As a student in this course (and at this university) you are expected to maintain high degrees of professionalism, commitment to active learning and participation in this class and also integrity in your behavior in and out of the classroom.

**Academic Dishonesty Policy**

1. Academic dishonesty includes such things as cheating, inventing false information or citations, plagiarism and helping someone else commit an act of academic dishonesty. It usually involves an attempt by a student to show possession of a level of knowledge or skill that he/she does not possess.

2. Course instructors have the initial responsibility for detecting and dealing with academic dishonesty. Instructors who believe that an act of academic dishonesty has occurred are obligated to discuss the matter with the student(s) involved. Instructors should possess reasonable evidence of academic dishonesty. However, if circumstances prevent consultation with student(s), instructors may take whatever action (subject to student appeal) they deem appropriate.

3. Instructors who are convinced by the evidence that a student is guilty of academic dishonesty shall assign an appropriate academic penalty. If the instructors believe that the academic dishonesty reflects on the student's academic performance or the academic integrity in a course, the student's grade should be adversely affected. Suggested guidelines for appropriate actions are: an oral reprimand in cases where there is reasonable doubt that the student knew his/her action constituted academic dishonesty; a failing grade on the particular paper, project or examination where the act of dishonesty was unpremeditated, or where there were significant mitigating circumstances; a failing grade in the course where the dishonesty was premeditated or planned. The instructors will file incident reports with the Deputy Director for Academic Affairs. These reports shall include a description of the alleged incident of academic dishonesty, any relevant documentation, and any recommendations for action that he/she deems appropriate.