| NONG LAM UNIVERSITYFACULTY OF ENVIRONMENT AND NATURAL RESOURCES | SOCIALIST REPUBLIC OF VIETNAMIndependence - Freedom - Happiness |
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**COURSE DETAILED OUTLINES**

**UNDERGRADUATE EDUCATION PROGRAM**

**Major: Environmental Engineering Level: Undergraduate**

1. **General information of the course**
* Name in Vietnamese: Thực tập giáo trình 2
* Name in English: Field trip 2
* Module: 212911
* Number of credits: 1
* Conditions for participating in the course

*+ Prerequisite: none*

*+ Prior study: Solid waste treatment, Water supply treatment, Air pollution control*

Department: Environmental Technology

* Duration: 10 weeks
* Semester: 2 (4th year)

The course belongs to the knowledge block:

| Fundamental □ | Fundamental specialized □ | Specialized 🗹 |
| --- | --- | --- |
| Mandatory □ | Optional □ | Mandatory □ | Optional □ | Mandatory 🗹 | Optional  |

* **Teaching language**: English Vietnamese 🗹
1. **Information of lecturer**
* Name: Nguyen Van Huy
* Position, title, degree: Lecturer, M.Sc
* Phone, email: 0909794445, nguyenhuymt@gmail.com
* Time and place of work: Office hours, Department: Environmental Technology
* Address: Nong Lam University, quarter 6, Linh Trung ward, Thu Duc district, Ho Chi Minh city, Vietnam
* The main research orientations: Environmental Engineering
* Information about tutors/lecturers who teach together (if any) (full name, phone number, email):
1. **Course description:**

This module provides students with a practical visit to some water treatment facilities, wastewater treatment, waste gas, solid waste, industrial plants to verify the theory they have learned and apply their knowledge. practice for the implementation of the graduation thesis and to envision their work in the future.

1. **Course goals and Expected Learning Outcomes**

**Course goals**

After completing the course, students are able to:

- Learn practical knowledge about environmental works in practice, the relationship between theory and reality.

- Exposure to environmental management and protection in practice in some enterprises and internship locations

- Learn about safety and environmental hygiene issues in some factories

- Conceiving ideas, designing and operating systems in the field of environmental technology in accordance with social needs

**The module contributes to the following Output Standards of the curriculum according to the following levels**:

| Module | Subject  | Learning outcomes (PLO) dedication degree |
| --- | --- | --- |
| 212911 | Thực tập giáo trình2 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| H | H | H | H | S | H | S | N | S | H | H | S | S | S | S | S |

Note:

*N: none supporting*

*S: small supporting*

*H: high supporting*

Course learning outcomes (*according to Bloom measurement scale*) :

| **Symbol** | **Course learning outcomes** **Completing this module, students can implement** | **PLOs** |
| --- | --- | --- |
| **Knowledge** |
| CLO1 | Understanding of environmental treatment works in certain | PLO1PLO2PLO3PLO4PLO5PLO6PL12 |
| CLO2 | Consolidate the knowledge learned in class |
| CLO3 | Preliminary understanding of environmental management systems, safety and hygiene management in enterprises |
| CLO4 | Analyze and evaluate works in theory and in practice |
| **Skills** |
| CLO5 | Practice skills in observing, analyzing and evaluating environmental works in practice. | PLO 9 PLO 10PLO11 |
| CLO6 | Apply the collected practical knowledge for the implementation of the graduation thesis and future work |
| CLO7 | Group discussion and presentation skills | PLO7PLO15 |
| **Attitude and moral qualities** |
| CLO8 | Have professional ethics, have a sense of environmental protection | PLO13PLO16 |

**V. Teaching and learning methods**

1. Teaching methods
* *Combine lectures, slides and videos presentation*
* *Q & A (questions and answers)*
* *Give teaching materials, homework and assignment*
1. Learning methods
* *E-learning and self-learning (students read the materials and watch video tutorials)*
* *Students present assigned topics in class and do the discussion*
* *Students refer to documents, calculate and design specific water supply and drainage systemsPhương pháp học tập*
1. **Tasks of students**
* *Attendance: Students must attend at least 90% of the class period, ask for permission before being absence*
* *Prepare for the lesson: Students do homework and the assignment at home, prepare the presentation slides and questions to participate the discussions in class*
* *Attitude: Students actively participate in the discussion, ask questions and answer the questions*
1. **Evaluation and grade scale**
2. Grade scale: 10
3. Evaluation plan and weight

**Table 1. Matrix assesses the course learning outcomes of the module** *(percentage points according to the academic regulations of NLU)*

| Course learning outcomes | **Diligence** **(30%)** | **ç (70%)** |
| --- | --- | --- |
| CLO1 |  | X |
| CLO2 |  | X |
| CLO3 |  | X |
| CLO4 |  | X |
| CLO5 |  | X |
| CLO6 |  | X |
| CLO7 | X | X |
| CLO8 | X |  |

**Table 2. Framework of evaluation criteria *(Rubric)***

1. Class attendance **(30 %)**

| Criteria | Percent (%) |  | **Level**  |  |
| --- | --- | --- | --- | --- |
| Excellent | Good | Average | Poor |
| *7-10*  | *7-5*  | *5-4*  | *<4*  |
| Class attendance | 100  | Attend <80% of the class period | Attend 70-80% of the class period | Attend 40-70% of the class period | Class attendance |

1. **Harvest report (70%)**

*During the learning process, there will be topics reported, each subject has about 5-8 students to perform. Students who report on the topic will receive a maximum of 7 points*

| Criteria | Percent (%) |  | **Mức chất lượng**  |  |
| --- | --- | --- | --- | --- |
| Excellent | Good | Average | Poor |
| *3* | *2*  | *1*  | *0*  |
| Content  | 30  | Fully present the required content on the topic, with additional relevant content contributing to the expansion of knowledge | Full presentation of the required content on the topic | Insufficient presentation of the required content on the topic | Presenting irrelevant content or content that is too sketchy, does not provide the necessary information. |
| Report form  | 20  | The presentation is clear, easy to understand, and creative. Get comments/questions of interest | The presentation is clear and easy to understand. | Presented in a reading form, not generating interest from the audience | The presentation is too sketchy, the audience cannot understand the content |
| Answer the questions  | 30  | Questions are answered fully, clearly, and satisfactorily | Answer 70% of questions. | Answer 25-50% of questions. | Can't answer any questions |
| Team work  | 20  | Show collaboration among team members clearly. There is division of answers and reports among members | There is cooperation among team members but it is not obvious | There is no combination of members, one or more members prepare and report | The report is incomplete and has incorrect content. |

**3. Overall rating**

| Score | **10** | **9** | **8** | **7** | **6** | **5** | **4** | **3** | **2** | **1** | **0** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **General assessment** | Completed the course with excellence | Completing the course well | Completing the course quite well | Completing the course with good grades | Completing the course with average grade | Completing the course with fair grade | Completing the course | Not achieved |

VIII. **Textbooks and references**

* + *Textbook:*

***Tài liệu tiếng Việt***

[1] Lâm Minh Triết, **Vi sinh vật và nước thải**, NXB Xây dựng, 2006

[2] Trịnh Xuân Lai, **Xử lý nước thải công nghiệp**, NXB Xây dựng, 2009

[3] Trịnh Xuân Lai, **Xử lý nước cấp cho sinh hoạt và công nghiệp**, NXB Xây dựng 2009

[4] Hoàng Văn Huệ, **Công nghệ môi trường, tập 1: Xử lý nước**, NXB Xây dựng, 2010

[5] Nguyễn Ngọc Dung, **Xử lý nước cấp**, NXB Xây Dựng, năm 1999

[6] Nguyễn Thị Thu Thủy, **Xử lý nước cấp sinh hoạt và công nghiệp**, NXB Khoa học và Kỹ thuật Hà Nội, 2003.

[7]. Nguyễn Văn Phước, Quản lý và xử lý chất thải rắn, NXB Đại học Bách Khoa TpHCM, 2005.

[8]. Trần Hiếu Nhuệ, Quản lý chất thải rắn, Tập 1: Chất thải rắn đô thị, NXB Xây dựng - Hà Nội, 2000.

[9] Trần Ngọc Chấn, ***Ô nhiễm không khí và xử lý khí thải***, tập 2 và 3, NXB KHKT Hà Nội

[10] Đinh Xuân Thắng, ***Giáo trình ô nhiễm không khí***, NXB ĐH Quốc gia TPHCM, 2007.

[11] PGS. TS. Nguyễn Đinh Tuấn, ***Kiểm soát ô nhiễm không khí***, Viện Môi trường và Tài nguyên, ĐHQG Tp.HCM, 2007.

[12] Trần Ngọc Chấn, ***Kỹ thuật thông gió***, NXB. Xây dựng, 1998.

[13] Hoàng Bá Chư, Trương Ngọc Tuấn, ***Sổ tay thủy khí động lực học ứng dụng***, NXB. Khoa học và Kỹ thuật, 2005.

**IX. Detail content of module:**

| Week | Content | **LLOs** | **Teaching and learning** **activities** | **Evaluation activities** | **CLOs** |
| --- | --- | --- | --- | --- | --- |
| 1*Lesson 1: Water treatment works and industrial production plants* | + Visiting classical and modern water and wastewater treatment technologies+ Analyze and compareVisit a few of the following locations: + Thu Duc water treatment plant+ BOO . water treatment plant+ Tan Hiep water treatment plant+ City Water Supply One Member Limited Liability Company+ Wastewater treatment station of Hi-tech Industrial Park+ Wastewater treatment station of Amata Industrial Park+ Waste water treatment station of Le Minh Xuan Industrial Park+ Vietnamese brewery+ MSG factory+ Factory producing instant noodles+ Cement factory | Understand the structure and principle of operation of the units in the systemIdentify chemicals usedKnow the production lines of some factories and the wastes generated | PowerPoint presentationField visitQ&AMaking a harvest report  | * 1. Diligence
	2. Attitudes, practical skills
	3. Harvest report
 | CLO1CLO2CLO3CLO4CLO5CLO6CLO7CLO8 |
| 2**Lesson 2: Exhaust gas and solid waste treatment works** | Visit a few of the locations below:+ Waste incinerator in Binh Duong waste treatment area+ Waste incinerator treatment system+ Wastewater treatment system that leaks garbage+ Go Cat landfill site+ Da Phuoc landfill site+ Phuoc Hiep landfill site | Understand the structure and principle of operation of the units in the systemDeterminedchemicals usedKnow the production lines of some factories and the wastes generated |

**X. Organizational form of teaching:**

| Content | Course management (hours) | Sum |
| --- | --- | --- |
| Theory | Exercise | Discussion  | Practice | Self-learning |
| Lesson 1 | - |  - | - | 15 | 15 | 30 |
| Lesson 2 | - |  - | - | 15 | 15 | 30 |
| Sum | 0 | 0 | 0 | 30 | 30 | 60 |

**XI. The requirements of lecturer for the module**:

* Classroom, workshop: rooms full of light and ventilation
* Teaching facilities: classrooms have projectors, micro
* Students must comply with the internship and factory rules

*HCMC, October 1st, 2018*

| **Dean** | **Head of Dept** | **Lecturer** |
| --- | --- | --- |
| *Assoc. Prof. LE QUOC TUAN* | *Assoc. Prof. NGUYEN TRI QUANG HUNG* | *MSc. NGUYEN VAN HUY* |