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**Establishing Modern Master-level Studies in Information Systems
561592-EPP-1-2015-1- FR-EPPKA2-CBHE-JP**

WP3

3.1. Pilot teaching MSc

**Piloting Report of the MASTIS course
MIS and Data Warehousing
Vinnytsia National Technical University – VNTU**

Piloting reports track and summarize the key takeaways from MASTIS program. PC use these reports to evaluate what is working and what isn't and to develop recommendations for improvement some components within MASTIS courses

1. Short description

Teaching the course "MIS and Data Warehousing" was conducted in accordance with the curriculum (in the Appendix) from 5.02.2018 till now. The training plan contains weeks, type of study and subjects and based on combination of the lectures, laboratory works project and team working. The course was started at 6.02.2018. The lectures and laboratory part of the course is carried Olena Nikitenko.

Students have basic bachelor's training in the areas of "System Engineering" or "Automation and Computer-Integrated Technologies".

2. How the courses were delivered?

Who led the Piloting of the course	Olena Nikitenko (VNTU)
Who were the lecturers who delivered the course	Olena Nikitenko (VNTU)
What was the Piloting period	Part 1: 5/02/2018 – 31/03/2018 Total: 5/02/2018 – 8/06/2018
How many students were enrolled and who were they	12 Master students of "Information Systems and Internet of Thinks" (1st year students)

3. Students who were involved in the piloting of the ITIS courses

The student group consisted of 12 people:

1. Baganovska Olena
2. Chernovolik Olena

3. Golumbevskaya Yuliya
4. Lisova Olena
5. Maksimov Oleksiy
6. Maksimova (Naumenko) Anastasiya
7. Misyura Anton
8. Shevchuk Andriy
9. Slobodyan Roman
10. Svitelska Iryna
11. Tatarskyi Pavlo
12. Vishnevskiy Volodymyr


4. E-learning materials used

Links to the Platform used to pilot the MIS and Data Warehousing courses

https://iq.vntu.edu.ua/b04213/html/nlr/nlr.php?card_id=640

Evaluation and monitoring of students' work is carried out using the [JetIQ](#) automated management system of training process JetIQ. This portal is available for all VNTU students

Конструктор навігатора навчальних ресурсів дисципліни: "Управління інформаційними системами і



Спеціальність: Автоматизація та комп'ютерно-інтегровані технології. Інформаційні системи і Інтернет речей. (АКІТ)

Семестр: 10

Викладач: Никитенко Олена Дмитрівна

► Редагувати

► Переглянути

► До списку

Додайте до навігатору навчальні матеріали з цих джерел:

тема
мій репоз.
матеріали колег
файловий архів
тести
посилання
навч. репоз.

Код	№	Назва	Автор	Тип	Вид	Рейт	Виб.	Ред.	Вид.
6233	▲ ▼	Робоча програма		docx			<input checked="" type="radio"/>		
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6238	▲ ▼	конспект_лекций_БазыДанных		doc			<input type="radio"/>		
6237	▲ ▼	конспект_лекций_Хранилища_данных		doc			<input type="radio"/>		
6236	▲ ▼	вопросы_на_экзамен		doc			<input type="radio"/>		
6235	▲ ▼	Книга Бейли_Л._-_Изучаем_SQL		pdf			<input type="radio"/>		
6234	▲ ▼	Видео уроки по изучению Oracle Apex		url			<input type="radio"/>		

Figure 1 - E-learning Materials for course "MIS and Data Warehousing"

During this weeks, students attending lectures, practicing and working on their final project of a group of 3 people. Lessons are held in classrooms, in which there is a projector, computers, and all modern devices for better study of discipline.

5. How was delivery organised?

Level of course unit	Masters level
Number of ECTS credits allocated	Credit weighting: 5 ECTS Lecture hours: 36 Laboratory Works hours: 27 Independent study hours: 85 Examination (final test): 2 Total Student Effort: 150 hours
What kind of the training methods and activities were used	Most of students are working on part time in IT companies as trainees, juniors and some as middle. They have experience in IT. In this regard, the main methods and activities of studying the course is to practice and study modern trends in the development MIS and Data Warehousing. This can be achieved through: Project briefings; Set and self-initiated project briefs; Peer learning; Self and peer assessment; Guest speakers; Group discussions, reviews and critiques; Working on live projects; Mentoring; Blended learning; Independent study. Web-based sessions lead by instructor provide methodological and conceptual framework for students' learning. The main accent is made on independent learning

5.1. Course content

List of the main topics of the course.

Topic 1. Introduction, concept and definition of the database.

Practical component:

Laboratory work1. Presentation of Oracle Application Express 5.2 (Oracle Apex), familiarity with the application, registration in the application. Introduction to Oracle Apex. Workspace Authorization Scheme

Teaching method: training

Topic 2. Design and development of databases: basics and methods.

Practical component: group discussions, reviews, writing essay

Teaching method: training

Topic 3. SQL and query processing.

Practical component:

Laboratory work2. Creating a Warehouse Accounting project based on Oracle Apex. Registration Page and Home

Teaching method: training

Topic 4. Transaction management.

Practical component: group discussions, reviews, writing essay

Teaching method: training

Topic 5. Architecture of relational database management systems.

Practical component:

Laboratory work3. Create a desktop application. Creating tables (directories) Warehouses and Users

Teaching method: training

Topic 6. Post-release databases and their applications.

Practical component: group discussions, reviews, writing essay

Teaching method: training

Topic 7. Systems and technologies for managing databases.

Practical component: Laboratory work4. Basic SQL statements. Creating a database, querying data, and forms for editing, handling queries in SQL Developer. Laboratory work5. Basic PL / SQL statements. Examples of business logic implementation

Teaching method: training

Topic 8. Business intelligence. Security issue database.

Practical component: group discussions, reviews, writing essay

Teaching method: training

Topic 9. Information systems management.

Practical component: group discussions, reviews, writing essay

Teaching method: training

Topic 10. Data storage technologies and data analysis. Entry into the data store.

Practical component:

Laboratory work6. Basic PL / SQL statements. Working with SQL Developer

Teaching method: training

Topic 11. Data warehouse architecture; application of data warehouse; tools and data storage technologies.

Practical component: group discussions, reviews, writing essay

Teaching method: training

Topic 12. Analysis and data preparation. Processes of data detection; large dataset;.

Practical component:

Laboratory work7. Dynamic events in Apex. Structural element "tree".

Teaching method: training

Topic 13. Application of data analysis. View data; data conversion; no data.

Practical component: group discussions, reviews, writing essay

Teaching method: training

Topic 14. Data Mining. Web Mining and Text Mining: Web Content, Structure and Use of Mining; PageRank algorithm.

Practical component:

Laboratory work8. Improvement of the user interface

Teaching method: training

Topic 15. Closed semantic analysis. Large data: large business data; MapReduce; Hadoop, Weka

Practical component:

Laboratory work № 9. Creation of a bot Create a calendar and work with reports

Teaching

method:

training

6. Online support offered by teachers during piloting

During the piloting process, students could contact tutors via VNTU JetIQ elearning system, e-mail and special Facebook group “IT Infrastructure”. The JetIQ e-learning system provides tools for the distribution of training materials, testing, evaluation, messaging, etc.


Students have access to records of assessment results by type of work. Access is personalized, as the student's assessments are his personal data. Only the teacher and the student have access to them.

The screenshot displays the JetIQ desktop interface for a teacher's office. At the top, the JetIQ logo is on the left, and navigation links (ГОЛОВНА, СТРУКТУРА, ВИКЛАДАЦЬКА, СТУДЕНТСЬКА, РЕСУРСИ, ПОШУК, ВИХІД) are on the right. Below the navigation bar, there is a dark header with 'Головна' and 'Робочий стіл' on the left, and a 'Select Language' dropdown and 'A A A' font size controls on the right. The main content area is titled 'Робочий стіл Никитенко Олена Дмитрівна' and features a profile picture of a woman. Below the profile, there are eight dashboard widgets arranged in two rows of four:

- Мій репозиторій:** у сховищі: 16, використовується: 5. Includes links for 'надання доступу колегам', 'online обробник pdf файлів', and 'конвертор у pdf (скачати)'. A 'навігатори всіх дисциплін' link is also present.
- ННР моїх дисциплін:** навігаторів: 5, використовується: 5, дисциплін: 5, рейтинг: 6. Includes a 'навігатори всіх дисциплін' link.
- Ел. журнал викладача:** аркуше: 13, мод. відомостей: 1, зал. відомостей: 0, екс. відомостей: 0, відомостей з КР: 1, відомостей з практик: 1.
- "Тест-ІQ":** тестів: 0, питань: 0, рейтинг: 0.
- Мультимедіа і файли:** includes links for 'файли' and 'файли від студентів'.
- Комунікації:** includes links for 'повідомлення' and 'моя електронна пошта', and shows 'надісланих: 0'.
- Ресурси кафедри/підрозділу:** includes links for 'публікація новин на сайті', 'моя персональна сторінка', and 'редагувати сайт'.
- Моя наукова статистика:** includes links for 'я у Google Scholar', 'я у Бібліометриці української науки', and 'я у репозиторії університету'.

Figure 2 – Desktop of Personal teacher's office in JetIQ

Course materials are distributed through the "Course Navigator".


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Семестр: 10 ▶ Переглянути
Викладач: Никитенко Олена Дмитрівна ▶ До списку

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тема	мій репоз.	матеріали колег	файловий архів	тести	посилання	навч. репоз.
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6234	▲▼	Видео уроки по изучению Oracle Apex		url			<input type="radio"/>	

Figure 3 – Course Navigator Page

7. Evaluation of student knowledge and competences

Control of students' learning process is doing with the use of automated system for management of education process JetIQ. The system provides for monitoring of each topic and final control (exam - 25 points, total – 100 points).

Частина 1 (37 балів)	Частина 2 (37 балів)
a1 - колоквиум - 10 б a2 - л.р.1, 5 б - Введення в Oracle Apex. Схема авторизації a3 - л.р.2, 5 б - Створення проекту склад. Сторінка реєстрації та Home a4 - л.р.3, 5 б - Основні оператори SQL. Створення бази даних, запити до даних, та форм для їх редагування a5 - л.р.4, 5 б - Основні оператори PL/SQL. Приклади реалізації бізнес-логіки a6 - л.р.5, 5 б - Основні оператори PL/SQL. Робота з SQL Developer. a7 - додаткові бали, 2 б	b1 - колоквиум - 10 б b2 - л.р.6, 5 б - Створення таблиць Товари, Користувачі, Продукти та зв'язків між ними b3 - л.р.7, 5 б - Динамічні події в Oracle Apex. Створення структури дерева b4 - л.р.8, 5 б - Створення структури дерева. Створення календаря та робота зі звітами b5 - л.р.9, 5 б - Створення бота у Coresoid b6 - Створення проекту - 7 б

Most of students at the end of 1-st part of the course were performance of laboratory work and the writing of the practical project with their work in IT companies

The assessment of the success was conducted on the basis of the results of the current training according to the plan.

The results at the end of 1-st part are:

ECTS	Percentage
A	20%
B	45%
C	25%
D	11%

8. Students' evaluation of the Piloting of the courses

Most students noted that the knowledge and skills gained during the training of this course were useful for their professional activities at their work at IT-firms. Also they were satisfied with learning materials, teaching methods, atmosphere.

9. Lessons learned from Piloting

Final conclusions can be made after ending of the course, but in order to enhance the content, structure and mode of delivery of the MASTIS courses I consider the following recommendations:

- Use meetings with entrepreneurs in IT sector
- To conduct excursions and business trips to enterprises in large IT firms
- The use of e-Learning tools has shown high efficiency
- Having sufficient theoretical bachelor's training, I propose to reduce the number of lecture courses and increase the number of practical classes

Also students attend excursions and seminars on subjects of discipline. As part of the study of the discipline, an excursion to Kiev was made to one of the largest IT companies in Ukraine - Global Logic. There, the students got acquainted with the structure of data warehouses, the data warehouse protection system, and listened to a lecture on this topic by one of the company's leading specialists:





Блок сховища даних



Один з блоків сховища даних

