**JSC «Kazakh-British Technical University»**

**Faculty of Information Technology**

**APPROVED BY**

**Dean of FIT**

**\_\_\_\_\_\_\_\_\_ Bisembayev A.S.**

**«\_\_\_\_»\_\_\_\_\_\_\_\_\_ 2022**

**SYLLABUS**

**Discipline: Information communication technology**

**Number of credits: 3**

**Term: Autumn 2022**

**Instructor’s full name: Gaétan Chardon**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Personal Information about the Instructor** | **Time and place of classes** | | **Contact information** | |
|  | **Lectures** | **Office Hours** | **Tel.:** | **e-mail** |
| **Gaétan Chardon,**  Assistant professor | According to schedule |  |  | [g.frachardon@kbtu.kz](mailto:g.frachardon@kbtu.kz) |

**Course duration:**

Lectures 2 hours a week, practices 1 hour a week, 14 weeks

**Course pre-requisites:**

This course is intended for beginners in programming. Students are expected to be able to:

* Create and run a python program
* Use Jupyter Notebook
* Understand the basic concepts of programming (variables, list, functions, …)
* Install and use libraries

**Course Objective:**

This course encourages learners to develop lifelong skills, including:

* Get data from different sources
* Manage and visualize data
* Analyse relations between data
* Draw conclusions from this data
* Share the conclusion on different media

**Literature:**

* “Data wrangling with python” (2016) by Jacqueline Kazil and Katharine Jarmul
* “Python for Data Analysis” (2017) by Wes McKinney

**COURSE CALENDAR**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Class work** | | | | **SIS** |
| **Week** | **Topic** | **Lecture hours** | **Laboratory hours** | **Chapters for reading** |
|  | Introduction  Data collection (1/2): Files processing | **2** | **1** |  | **Ass.1** |
|  | Data collection (2/2): Web scrapping | **2** | **1** |  | **Ass.2** |
|  | Databases: SQL | **2** | **1** |  | **Ass.3** |
|  | Data cleaning | **2** | **1** |  | **Ass.4** |
|  | Data visualization | **2** | **1** |  | **Ass.5** |
|  | Machine learning (1/2) | **2** | **1** |  | **Ass.6** |
|  | Machine learning (2/2) | **2** | **1** |  | **Ass.7** |
|  | **Midterm exam** |  |  |  |  |
|  | Neuronal network with TensorFlow (1/2) | **2** | **1** |  | **Ass.8** |
|  | Neuronal network with TensorFlow (2/2) | **2** | **1** |  | **Ass.9** |
|  | Creating a website with Django | **2** | **1** |  | **Ass.10** |
|  | Publishing a website on Heroku | **2** | **1** |  | **Ass.11** |
|  | Create a user interface with Tkinter (1/2) | **2** | **1** |  | **Ass.12** |
|  | Create a user interface with Tkinter (2/2) | **2** | **1** |  | **Ass.13** |
|  | **End term exam** |  |  |  |  |

**COURSE ASSESSMENT PARAMETERS**

|  |  |
| --- | --- |
| **Type of activity** | **Final scores** |
| Midterm | 10% |
| Endterm | 10% |
| Assignments | 40% |
| Final exam | 40% |
| **Total** | **100%** |

**Criteria for evaluation of students during semester:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Assessment criteria** | **Weeks** | | | | | | | | | | | | | | | | **Total scores** |
|  |  | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | **15** | **16-17** |  |
| 1. | Midterm |  |  |  |  |  |  |  | \* |  |  |  |  |  |  |  |  | 10% |
| 2. | Endterm |  |  |  |  |  |  |  |  |  |  |  |  |  |  | \* |  | 10% |
| 3. | Assignments | \* | \* | \* | \* | \* | \* | \* |  | \* | \* | \* | \* | \* | \* |  |  | 40% |
| 4. | Final Exam |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | \* | 40% |
|  | **Total** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **100%** |