National Taiwan Normal University Online Course Teaching Plan

Instructions: According to **Article 6 of the Implementation Regulations Regarding Distance Learning by Universities**, Departments/Programs offering distance learning courses, shall present a course plan and submit it for approval by the university-level academic affairs committee. The course plan referred to in the preceding paragraph shall set forth learning objectives, the target student group, a course outline, teaching methods, interactive student-teacher discussion, grading and course requirements. The course plan shall be posted on the Internet.

1. **Chinese Course Name:** _生醫與健康數據分析_
2. **English Course Name:** _Biomedical and Health Data Analytics_
3. **Course start date: __Spring__ semester of __2024_ (yyyy)**
4. **Course review submission record**(■ if applicable)**:**

□(1) **It is a new online course or an existing face-to-face course switching to online course in this semester**

■(2) **It is an existing online course; the latest University's Course Committee approval was in the Fall semester of __2022__ (academic year)**

□(2.1) **The 5-year validity period has expired; a new application is required.**

□(2.2) **In case of a major change in the original approved course or if the revision ratio exceeds 30%, reapplication is required.**

5. **Basic Course Information** (■ if applicable)

(1)	Instructor Name & Title	林耘逸 Evan Unit Lim / Adjunct Faculty
(2)	Instructor Sources	□Appointed by Departments ■Appointed by General Education Center □Both of Above □Others:
(3)	College/Department/Center	教務處共同教育委員會邏輯與程式教育組 Computational Thinking and Programming Education Division
(4)	School System	■Undergraduate Program □Master's Program □BA/MA Joint Course □MA/PhD Joint Course □PhD Program □Continuing Education Master's Program
(5)	Program Type	■Full-time Program □Part-time Program □Others:
(6)	Course Type	■Common Courses □General Courses □School Required Courses □Professional Courses □Educational Courses □Other:
(7)	Required Courses	■University-required □College-required □Graduate Institute-required □Department-required □Others:
(8)	Course Duration	■One Semester (half year) □Two Semesters (one year) □Others:
(9)	Required/Elective Course	□Required ■Elective □Others:
(10)	Course Credits	2

(11)	Average of Face-to-Face Teaching Hours Per Week	0.75 hour(s)/week (Divide the total "face-to-face teaching" hours, including the hours of face-to-face teaching and synchronous teaching, by the total number of course weeks.)
(12)	Number of Classes	1
(13)	Estimated Total Number of Students	50
(14)	EMI Courses	■Yes □No
(15)	Type of Cooperation with Domestic/Foreign Universities (omit if inapplicable)	Cooperative University:_____; Department/Institute: _____ □Partner University □Dual-Degree Program □Overseas Special Program □Others: _____
(16)	Course Platform Website (asynchronous teaching is required)	NTNU online learning platform: https://moodle.ntnu.edu.tw/
(17)	Syllabus Website	http://courseap.itc.ntnu.edu.tw/acadmOpenCourse/index.jsp

6. Course Teaching Design and Implementation Method

(1)	Course Goals	This course introduces the use of health data from wearable devices and patient data from electronic health records (EHR) to explore the potential of data driven personal health management and study the role of data in biomedical research and healthcare systems.
(2)	Target Student Group	Students with basic computational thinking and programming concepts, such as students who have studied "Computational Thinking and Programming" at NTNU or its equivalent.
(3)	Prerequisite(s)	Elementary English proficiency

(4) Course Content Outline: The followings take 16 weeks per semester for example:

Face-to-Face Teaching	Distance learning	
	Synchronous	Asynchronous
at least 2 weeks	**at least 3 weeks**	**at least 8 weeks**

Note: If the online course is offered with cooperative universities, it is not subject to the above teaching hours allocation.

Week	**Topics** (If there are multiple instructors, please specify instructor names in each week)	**Learning Objectives** (From the perspective of students)	**Teaching Interactive Design** (Multiple choices allowed)	**Testing/Evaluation Activities** (Multiple choices allowed. Choose "None" if not designed for the week.)	**Teaching Method and Hours** (fill-in the number of hours, omit if none)		
					Face-to-Face Teaching	**Distance learning**	
						Synchronous	**Asynchronous**
1	Introduction	Explore the topics and concepts that the	■Topic discussion □Group discussion	□Tests □Assignments			2

				course covers	☐Peer review ☐Instructor feedback ☐Others:_____	☐_____ exam ☐_____ report ■Others:_ Discussion forum participation ☐None			
		2	The Very Basics of Databases	Possess an introductory understanding of databases	■Topic discussion ☐Group discussion ☐Peer review ☐Instructor feedback ☐Others:_____	☐Tests ☐Assignments ☐_____ exam ☐_____ report ■Others:_ Discussion forum participation ☐None			2
		3	Data Types	Learn about the data types	■Topic discussion ☐Group discussion ☐Peer review ☐Instructor feedback ☐Others:_____	☐Tests ☐Assignments ☐_____ exam ☐_____ report ■Others: Discussion forum participation ☐None			2
		4	Data Types	Learn about the data types	■Topic discussion ☐Group discussion ☐Peer review ☐Instructor feedback ☐Others:_____	☐Tests ■Assignments ☐_____ exam ☐_____ report ☐Others:_____ ☐None			2
		5	Health Data from Wearable Devices	Understand the collection and utilization of health data from wearable devices	■Topic discussion ☐Group discussion ☐Peer review ☐Instructor feedback ☐Others:_____	☐Tests ☐Assignments ☐_____ exam ☐_____ report ■Others: Discussion forum participation ☐None	2		
		6	Data Preparation: Select and Filter	Learn the concepts of data preprocessing and their applications	■Topic discussion ☐Group discussion ☐Peer review ☐Instructor feedback ☐Others:_____	☐Tests ☐Assignments ☐_____ exam ☐_____ report ■Others: Discussion forum participation			2

					☐None			
7	Data Preparation: Formula	Learn the concepts of data preprocessing and their applications	■Topic discussion ☐Group discussion ☐Peer review ☐Instructor feedback ☐Others:_____	☐Tests ■Assignments ☐_____ exam ☐_____ report ☐Others:_____ ☐None			2
8	Data Preparation: Formula	Learn the concepts of data preprocessing and their applications	■Topic discussion ☐Group discussion ☐Peer review ☐Instructor feedback ☐Others:_____	☐Tests ☐Assignments ☐_____ exam ☐_____ report ■Others: Discussion forum participation ☐None			2
9	Midterm Discussion	Brainstorming in a group setting	■Topic discussion ■Group discussion ☐Peer review ☐Instructor feedback ☐Others:_____	☐Tests ■Assignments ☐_____ exam ☐_____ report ☐Others:_____ ☐None		2	
10	Final Project Inspiration	Conceptualize the project	■Topic discussion ■Group discussion ☐Peer review ☐Instructor feedback ☐Others:_____	☐Tests ☐Assignments ☐_____ exam ☐_____ report ■Others: Discussion forum participation ☐None			2
11	Electronic Health Record (EHR) and Biobank	Learn about EHR and Biobanks	■Topic discussion ☐Group discussion ☐Peer review ☐Instructor feedback ☐Others:_____	☐Tests ☐Assignments ☐_____ exam ☐_____ report ■Others: Discussion forum participation ☐None	2		
12	International Classification of Diseases (ICD)	Learn about ICD	■Topic discussion ☐Group discussion ☐Peer review ☐Instructor feedback	☐Tests ☐Assignments ☐_____ exam ☐_____ report			2

					☐Others:_____	■Others: Discussion forum participation ☐None			
		13	Blend Different Sources of Data: Join and Union	Learn to deal with data from multiple sources	■Topic discussion ☐Group discussion ☐Peer review ☐Instructor feedback ☐Others:_____	☐Tests ■Assignments ☐_____ exam ☐_____ report ☐Others:_____ ☐None		2	
		14	Data Visualization	Learn to create visualizations	■Topic discussion ☐Group discussion ☐Peer review ☐Instructor feedback ☐Others:_____	☐Tests ☐Assignments ☐_____ exam ☐_____ report ■Others: Discussion forum participation ☐None			2
		15	Presentation	Present the findings and learn from the others	☐Topic discussion ☐Group discussion ■Peer review ■Instructor feedback ☐Others:_____	☐Tests ☐Assignments ☐_____ exam ☐_____ report ■Others: Final project presentation ☐None		2	
		16	Presentation / Wrap Up	Present the findings and learn from the others	☐Topic discussion ☐Group discussion ■Peer review ■Instructor feedback ☐Others:_____	☐Tests ☐Assignments ☐_____ exam ☐_____ report ■Others: Final project presentation ☐None		2	

(5)	Teaching Methods	(■ if included; multiple choices allowed) ■ 1. Provide primary and supplementary materials for online courses ■ 2. Provide face-to-face teaching, number: __2__ time(s), total hour(s): __4__ hour(s) ■ 3. Provide synchronous teaching, number: __4__ time(s), total hour(s): __8__ hour(s) ■ 4. Provide asynchronous teaching, number: __10__ time(s), total hour(s): __20__ hour(s) ■ 5. Provide topic discussion activities

		■ 6. Provide cooperative learning activities between students ■ 7. Mutual learning through students' works □ 8. Others: (please specify)
(6)	Learning Management System (moodle)	Which moodle functions are used in this course? (■ if included; multiple choices allowed) Note: For teachers and students from domestic or foreign universities who are participating in joint programs that require access to Moodle, please have the course instructor contact the platform manager at extensions 5673 or 5579. E-mail: elearn@ntnu.edu.tw ■ 1. Personal data ■ 2. Course information ■ 3. Latest News release & browse ■ 4. Course materials viewing & download ■ 5. Grade system management & inquiry (omit if inapplicable) □ 6. Perform online testing (omit if inapplicable) ■ 7. Learning information ■ 8. Interactive learning design (chat room or discussion area) □ 9. Other related functions: (please specify)
(7)	Public Information about Interactive Teaching	Instructor Profile and Published Works (webpage link instructions can be attached): https://web.ntnu.edu.tw/~ptm110_14067/
		Instructor E-mail: elim@ntnu.edu.tw
		Online Office Hours (at least 1 hour per week): Mon、Wed：11:30-12:30
		Teaching Assistant's Name/E-mail (omit if inapplicable):
		Others(omit if inapplicable):
(8)	Course Material Production	(■ if included; multiple choices allowed) ■ 1. Provide appropriate reminders of key points ■ 2. Provide teaching-related examples ■ 3. Provide teaching-related exercises and reflective activities ■ 4. Provide supplementary teaching materials or online resources ■ 5. Provide instructions for self-directed learning ■ 6. Learning objectives are consistent with course goals □ 7. Others:

(9)	Assignment Submission Method	(■ if included; multiple choices allowed) ■ 1. Provide online assignment content description ■ 2. Assignment file upload and download ■ 3. Others:
(10)	Assessment	※ **To comply with the spirit of online course design, please understand and agree to the contents of the following 3 items, and provide detailed description:** ■ 1. The course can provide evaluation results and feedback for each learning evaluation ■ 2. The evaluation has taken the students online learning history and participation level into account ■ 3. The percentage of each score is explained in detail below: (Evaluation methods, and their total score percentage) (1) Assignments：20% (2) Class participation and involvement：20% (3) Final project：40% (4) Final project presentation：20%
(11)	Precautions for Class:	1. Please provide each group member's email (same as the one on Moodle) when forming a group. 2. Please respect intellectual property rights.
(12)	**<u>Observe intellectual property rights in the creation of course content.</u>** ※ Pay attention to any infringement of copyright or other rights in the creation of relevant teaching content. ※ If the copyright for any part of the teaching content is owned by others and authorization has been obtained from the rights holder, please indicate the source of the material.	