Lesson Plan 2022-26-04

Data Analysis in Sport&Exercise Science (Part 1)

Not Peer reviewed

TEACHING SESSION PLAN	
Module: Data Analysis	**Level / Stage (6,7,8) - 9** **Year: 1**
Title of session/ topic: **Length of session: 1.5h**	

Mark the type of session:

Lecture ◼   Tutorial ◼   Lab ☐   Studio ☐   Workshop ☐

Module Outcome (What module outcome(s) is the class/session aligned to)**:**

Introduction to Python for Data Analysis

Class/Session Outcomes: Upon completion of this session, you should be able to:

L01: Answer question what is Python and why learn it

L02: Know how to install Python and Jupyter Notebook

L03: Understand basic operations in Python

L04: Describe different data structures in Python (lists, dictionaries, tuples, etc)

Select & Prioritise Your Content:

For the session, decide what material is used in class and what material the students should study independently and/or online. To do this, think about the material and its relative importance and prioritise and list in the appropriate quadrant.

	In Class or in a Live Online Class (Support Learning)	Independent Learning (student completes on their own)
Priority (Need to know)	1 Know how to install Python and Jupyter Notebook, understand basic operations in Python	2 Practice material presented in Jupyter Notebooks accessable via Github
Supplementary Learning (Nice to know)	3 Describe different data structures in Python (lists, dictionaries, tuples, etc)	4 Read supplementary literature and do tutorials

Material in quadrants <u>1 and 3 typically become the focus during classes</u>. Quadrants 2 and 4 represent material students could study themselves and use the VLE/Moodle and online learning objects to support this learning.

Explanations:

To support learning Jupyter notebook (software tool) is used (https://jupyter4edu.github.io/jupyter-edu-book/). Jupyter notebooks belong to the Project Jupyter which is a broad collaboration that develops open-source tools for interactive and exploratory computing. It is a platform to use in the classroom, to develop teaching materials, to share lessons and tutorials. Notebooks are documents containing text narratives with images and math, combined with executable code (many languages are supported) and the output of that code. Jupyter notebooks allow to engage students.

Github is a code repository which can be accessed via https://github.com/lyashevska/python-for-biomechanics

Time/Lesson Stage	Teacher Activity	Student Activity	Resource Used
Stage 1 0 - 15 min	Welcome students, gain understanding of prior knowledge on subject	Open/download materials, ask questions, access code via Github	Moodle, jupyter notebook presentation, github, binder
Stage 2 15-30	Introduce Python language and different ways of installing it	Listen and ask questions	MS Teams, jupyter notebook
Stage 2 30 - 45 min	Describe different data structures in Python	Engage by giving examples and code along	MS Teams, jupyter notebbo
Stage 3 45-50 min	5 min break		
Stage 3 50 – 80 min	Practical assignment using basic operations and different data structures	Engage and code along	jupyter notebook or binder
Stage 4 80 – 90 min	Wrap up lesson, recap LO		MS Teams , jupyter notebook

Teacher Reflection:

screenshots/pictures/video

discuss cognitive, affective

What worked well?

What did not work well?

Student engagement

To what extent did you address different domains of learning?

What would I do differently next time?