

Student names:		Student 1	Student 2	Weight	Grade
No.		Pass/Fail Items			
		Pass	Fail		
1	Download data using the CDS API	The student is able to retrieve data from the CDS by adapting the provided code from tutorials to do so.		0,25	
1	Merging data	The student can organize the data in a way that it is useful for further processing.		0,25	
		Scale items			
No.		Insufficient (< 5,5)	Acceptable (5,5-7)	Good (> 7)	
2 & 3	Determining and plotting average capacity factors per NUTS-1 region	The student is unable to complete the code to compute the capacity factors for Wind power. Or, the student produces maps of CF for PV and Wind power but the ranges/averages per region are not correct.	The student produces maps of CF for PV and Wind power averaging per NUTS-1 region and the ranges/averages per region are correct. The maps include adequate legends and labels.	Additionally to generating the maps as described under "Acceptable", the student provides a thorough "sanity check". Excellent work includes the checks of time series for individual regions and comparison of average values with values found in literature.	1
4 part 1	Creating solar PV and wind CF time series for all NUTS-1 regions	The student is unable to complete the code to calculate the CF per NUTS-1 region and time step. Or, the provided code results in a dataframe with the wrong dimensions and/or inaccurate values.	Student develops code able to calculate the CF per NUTS-1 region and time step, the resulting dataframe has the right dimensions and some minimum explanation is provided about the accuracy of the values in the dataframe.	Student develops code able to calculate the CF per NUTS-1 region and time step, the resulting dataframe has the right dimensions and a solid quality check of the accuracy of the values is performed. Excellent work includes an analysis and comparison with the results obtained in exercises 2-3.	1
4 part 2	Time series resampling and plotting for one selected region	The student is unable to complete the code. Or, the code runs but the figure is of the wrong type, contains incorrect values and/or is missing appropriate labeling and legend. No explanation is provided.	The correct figure is provided, including appropriate labeling and a legend. The presented values seem feasible. A minimum of explanation is provided but is not very convincing.	The figure is provided as described under "Acceptable". The presented values are feasible and the student presents arguments about seasonality and location of the NUTS-1 region to justify the presented results.	1
4 part 3	Correlations between the selected NUTS-1 region and the rest of the regions in Europe, calculation and plotting	The student is unable to complete the code. Or, the student produces correlation maps but the values are incorrect and/or are missing appropriate labels and legends. Not all questions Q4.1-Q4.3 are tackled, or those that are tackled provide incorrect arguments.	Code and maps are provided. The map has proper labels and legends and the values seem feasible. Discussion questions Q4.1-Q4.3 are all answered but some of them in a superficial way.	Code and maps are provided. The map has proper labels and legends and the values are feasible. Solid arguments are provided for Q4.1-Q4.3 . Excellent work includes supporting the arguments with reference to scientific literature.	1
5	Renewable energy droughts	The student is unable to complete the code. Or, the student produces the RES drought maps but the values for either the 3-hourly or weekly droughts are incorrect and/or maps are missing appropriate labels and legends. Not all questions Q5.1-Q5.2 are tackled, or they provide incorrect arguments.	Code and maps are provided. The maps include proper labels and legends. The ranges of both the 3-hourly and weekly RES droughts are correct. Questions Q5.1-Q5.2 are both addressed but some of them in a superficial way.	Code and maps are provided. The maps include proper labels and legends. The ranges of both the 3-hourly and weekly RES droughts are correct. Q5.1 and Q5.2 are properly addressed, with good argumentation. Excellent work would reflect on at least five different shortcomings for Q5.2, with support from the literature.	2
6	Clustering RES droughts	The student is unable to complete the code for clustering. Or, the code produces a clustering result and associated map, but appropriate labeling and legend is missing. Q6.1 answer is missing or shows lack of understanding of the clustering method selected.	Code and map are provided. The map includes proper labeling and legend. Q6.1 and Q6.2 are both addressed, with good argumentation. Excellent work would support the answer to Q6.2 with references to scientific literature.	Code and map are provided. The map includes proper labeling and legend. Q6.1 and Q6.2 are both addressed, with good argumentation. Excellent work would support the answer to Q6.2 with references to scientific literature.	1,5
7	Open research question	The student is unable to complete the code to answer an energy system related research question of their own choosing. Or, the code runs but inappropriate/incomplete data sets are used or for whatever reason the results do not make sense.	Code and appropriate visualizations are provided to answer the proposed research question. Figures include proper labeling and legends. Discussion of the results is solid and provides good argumentation and reflection. Excellent work supports the answer to the open RQ with references to scientific literature.	Code and appropriate visualizations are provided to answer the proposed research question. Figures include proper labeling and legends. Discussion of the results is solid and provides good argumentation and reflection. Excellent work supports the answer to the open RQ with references to scientific literature.	2
Final grade				10	