# OCESE - Open-source Computing for Earth Science Education

The OCESE project (May 2020 through Apr 2023) aims to transform undergraduate quantitative teaching and learning in UBC’s [Department of Earth, Ocean and Atmospheric Science](https://www.eoas.ubc.ca) (EOAS) using open source tools including:

* Python as the principal and persistant programing language for students;
* [Jupyter notebooks](https://www.jupyter.org) for entry-level or advanced courses requiring writing or modifying code;
* use of [executable books](https://executablebooks.org/en/latest/) (like the one you are reading here) to deliver static content (textbooks) or dynamic materials in the form of Jupyter notebooks;
* interactive dashboards for exploring concepts and data sets, programed using Python and a consistent interactive library (Plotly Dash);
* use of emerging automatic assessment practices (nbgrader, a Jupyter Notebook plugin, Prairielearn, and others);
* use of GitHub as a collaborative means of collaborating on development of Open Source content, tools and logistics.

Note that this documentation package is NOT about the EOAS Department’s **QuEST Project** (Quantitative Earth Sciences Transformation). See <https://blogs.ubc.ca/eoasquest/> for those details.

**Formal title:** Embedding Open-source Computational Tools into the Quantitative Earth Science Specializations

**Project funding:** [The UBC Teaching and Learning Enhancement Fund](https://tlef.ubc.ca/funded-proposals/entry/714/), and internal support from the Department - EOAS.

**Source:** This website’s [repository](https://github.com/eoas-ubc/eoas-ubc.github.io) contains Markdown content that is converted to HTML by [Jupyter Books](https://jupyterbook.org/intro.html) and pushed for online display using [ghp-import](https://pypi.org/project/ghp-import/).

**Website Organization:** Sections are somewhat inspired by a [documentation framework](https://documentation.divio.com/) described at Divio.

* “PROJECT & OUTCOMES” contains explanations of project goals and summaries of outcomes and deliverables.
* “HOW-TO GUIDES” includes succinct summaries of tools and techniques to help contributors, instructors and students.
* “TUTORIALS” contain more thorough learning resources for students or instructors.
* “REFERENCES” are lists of pointers, links and key sources.

OCESE Project [Timeline](file:///C:\Users\fjones\repos\eoas-ubc.github.io\docs\_build\html\files\timeline.pdf) as of spring 2022.

## Acknowledgements

Many thanks for financial support provided by UBC Vancouver students via the [Teaching and Learning Enhancement Fund](https://tlef.ubc.ca/), and the UBC Work Learn Program for helping employ student contributors. (For details about UBC’s work learn program, see the [page for students](https://students.ubc.ca/career/ubc-experiences/work-learn-program) or the [page for faculty](https://facultystaff.students.ubc.ca/student-affairs/ubc-career-centre/work-learn).)

Also much appreciated are the dedication & professionalism of the EOAS Department’s computing staff, as well as support related to (a) teaching and learning and (b) development of [open Jupyter Hubs](https://lthub.ubc.ca/guides/jupyterhub-instructor-guide/), both from the [Centre for Teaching and Learning Technology](https://ctlt.ubc.ca/).

This book is powered by [JupyterBook](https://jupyterbook.org) and aims to be …

* free and open (permissive license, sources and content available through github)
* interactive where applicable (integration with JupyterHub and Binder will allow readers to run and modify code examples)
* a living document during the OCESE project; i.e.content will continue to evolve, and collaboration is welcome.

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