Module: Introduction to MATLAB for Geoscientists

Module number / code: BW 58

UNIVERSITÄT BONN

1. Content and qualification objectives

Contents	This course introduces bachelor students to the basics of scientific programming using MATLAB, with a special focus on practical applications in geology. It is designed to build confidence and curiosity around programming and data handling, starting from the ground up – no prior coding experience is needed. Through hands-on exercises and real-world examples, students will learn how to use MATLAB as a tool for exploring, analyzing, and visualizing geoscientific data. The course emphasizes learning by doing and provides a supportive environment for students who are new to coding.
Qualification objectives	Upon successful completion of the course, students will be able to familiarize themselves with the MATLAB environment and use it for basic tasks. This includes creating plots and figures (e.g., for thesis and projects), understanding and writing simple codes to process and interpret data, approaching scientific problems with a computational and quantitative mindset, and building a foundation for advanced modeling or data analysis courses. An important part of the module is the independent completion of tasks and projects by the students.

2. Teaching and learning methods

	LV-Art	Theme	Language of instruction	Group size	SWS	Workload [h]
	V	Introduction to MATLAB	en	20	3	160
	Ü	Introduction to MATLAB	en	20	2	80

3. Requirements for participation in the module

causing obligation to prove	-
recommended	Familiarity with any other programming languages

4. Usability of the module

	Study program/sub-study program	Compul-sory/elective	Semester
	B.Sc. Geology	Elective	5th semester

5. Requirements for the award of credit points according to the ECTS — 8 ECTS credits

Academic achieve-ment(s)	Successful completion of the exercises	8
Examinations and exami-nation language	Project (en)	

7. Frequency				8. Workload	9. Duration
Winter semester	☒	Winter and sum-mer semesters	☐	240 hours	1 semester
Summer semester	☐				

Module organization

Teacher	Muniruzzaman
Module coordinator	Prof. Dr. Muhammad Muniruzzaman
Offering organizational unit	Institute for Geosciences

Miscellaneous

literature	Will be presented at the beginning of the event.