

# 课程大纲

## COURSE SYLLABUS

1.	<b>课程代码/名称</b> <b>Course Code/Title</b>	<b>OCE5025 高等海洋地球物理观测实验</b> <b>OCE5025 Marine Seismic Observation</b>
2.	<b>课程性质</b> <b>Compulsory/Elective</b>	海洋科学与工程系 Department of Ocean Science and Engineering
3.	<b>课程学分/学时</b> <b>Course Credit/Hours</b>	3
4.	<b>授课语言</b> <b>Teaching Language</b>	中文 Chinese
5.	<b>授课教师</b> <b>Instructor(s)</b>	郭震 GUO Zhen
6.	<b>是否面向本科生开放</b> <b>Open to undergraduates or not</b>	否 No.
7.	<b>先修要求</b> <b>Pre-requisites</b>	无 No.
8.	<b>教学目标</b> <b>Course Objectives</b>	
	<p>(如面向本科生开放, 请注明区分内容。 If the course is open to undergraduates, please indicate the difference.)</p> <p>本课程旨在以海洋地球物理的基本理论为基础, 讲授海洋地球物理学的观测、数据获取、处理等基本内容, 使学生掌握海洋地球物理学相关计算方法和软件应用。 Based on the fundamental theory of marine geophysics, this course aims to teach the observation, data acquisition and processing of marine geophysics and other basic contents, so that students can master the relevant calculation methods and software applications of marine geophysics.</p>	
9.	<b>教学方法</b> <b>Teaching Methods</b>	
	<p>(如面向本科生开放, 请注明区分内容。 If the course is open to undergraduates, please indicate the difference.)</p> <p>以课堂理论和方法讲授、前沿论著研读、上机实验操作为主 Mainly including theory and method teaching, frontier treatise studying, and experiment operation.</p>	
10.	<b>教学内容</b> <b>Course Contents</b>	
	(如面向本科生开放, 请注明区分内容。 If the course is open to undergraduates, please indicate the difference.)	
	<b>Section 1</b>	介绍海洋地球物理学的发展 (2 课时) Introduction of development of marine geophysics (2 courses)
	<b>Section 2</b>	常规海洋地震学探测手段 (4 课时) Conventional detection means of marine seismology (4 courses)
	<b>Section 3</b>	海洋地震学仪器, 如海底地震仪, 浮潜式地震仪 (4 课时) Marine seismological instruments (e.g. submarine seismograph, and snorkeling seismograph) (4 courses)
	<b>Section 4</b>	地球物理反演理论 (4 课时)

	Geophysical inversion theory (4 courses)
<b>Section 5</b>	地震数字信号处理 (4 课时) Seismic digital signal processing (4 courses)
<b>Section 6</b>	地震学层析成像 (4 课时) Seismological tomography (4 courses)
<b>Section 7</b>	海洋地震噪声 (6 课时) Marine seismic noise (6 courses)
<b>Section 8</b>	噪声干涉理论 (6 课时) Noise interference theory (6 courses)
<b>Section 9</b>	火山地震学 (6 课时) Volcanic seismology (6 courses)
<b>Section 10</b>	地震震相拾取及地震定位 (4 课时) Seismic phase picking and earthquake location (4 courses)
<b>Section 11</b>	地震各向异性及衰减 (4 课时) Seismic anisotropy and attenuation (4 courses)
<b>11. 课程考核</b> <b>Course Assessment</b>	
<p>( ① 考核形式 Form of examination; ②. 分数构成 grading policy; ③ 如面向本科生开放, 请注明区分内容。 If the course is open to undergraduates, please indicate the difference. )</p> <p>平时课堂表现和期末课题为考核方式 Regular class performance and the final project will be assessed</p>	
<b>12. 教材及其它参考资料</b> <b>Textbook and Supplementary Readings</b>	
<p>Bormann P. New Manual of Seismological Observatory Practice (NMSOP). Annexes[M]. GeoForschungsZentrum, 2002.</p> <p>Seismic Ambient Noise. Cambridge University Press. 2018. Nori Nakata and Lucia Gualtieri, and Andreas Fichtner</p>	