



## ManGrowth Course 2024 – Programme

### September 30 – October 26, 2024

DAY A (09/29/2024)	Arrival of Italian students in Maputo.	
DAY 1 (09/30/2024)	Opening Intensive course “ManGrowth – Preservation of Ecosystems for Sustainable Development”	
Breakfast time		
08:00 (Maputo time)	Course start: welcome words, presentation of first-week professors and participating students. Instructions and recommendations.	Prof. Macamo and Ramoni
09:00 – 12:00	Practical session. Introduction to Scientific writing.	Prof. Ramoni
Lunch time		
14:00 – 15:30	Practical session. Introduction to Scientific writing.	Prof. Ramoni
15:40 – 17:00	Practical session. Introduction to Scientific writing.	Prof. Ramoni
DAY 2 (10/01/2024)	Arrival of students and first-week professors to Inhaca	
DAY 3 (10/02/2024)		
Breakfast time		
08:00 – 12:00	Practical session. Development of the projects.	Prof. Macamo, Ramoni J., Orlandoni, and Moretti
Lunch time		
13:00 – 15:00	<i>Module I – Mangroves.</i> Occurrence and distribution in Mozambique (historical)	Prof. Macamo
15:00 – 17:00	<i>Module II – The economics of the mangroves.</i> Economics of Environmental and Natural Resources: Elements of economy applied to the study of NR.	Prof. Orlandoni & Ramoni J.
17:00 – 19:00	<i>Module III – Bioacoustic monitoring of mangroves.</i> Difference between hydrophones and microphones.	Prof. Moretti
Dinner time		
20:00 –	Activities related to the projects (data analysis, literature searching, report writing, etc.)	
DAY 4 (10/03/2024)		
Breakfast time		
08:00 – 12:00	Practical session. Development of the projects.	Prof. Macamo, Ramoni J., Orlandoni, and Moretti
Lunch time		
13:00 – 15:00	<i>Module I – Mangroves.</i> Specific species composition (flora and associated species).	Prof. Macamo
15:00 – 17:00	<i>Module II – The economics of the mangroves.</i> Economic Valuation (EV) of Environmental Resources: Economic concepts, main EV methodologies.	Prof. Orlandoni & Ramoni J.
17:00 – 19:00	<i>Module III – Bioacoustic monitoring of mangroves.</i> Acoustic waves in the sea, signal processing.	Prof. Moretti
Dinner time		
20:00 –	Activities related to the projects (data analysis, literature searching, report writing, etc.)	



<b>DAY 5 (10/04/2024)</b>		
Breakfast time		
08:00 – 12:00	Practical session. Development of the projects.	Prof. Macamo, Ramoni J., Orlandoni, and Moretti
Lunch time		
13:00 – 15:00	<i>Module I – Mangroves.</i> Ecological and social services (providing specific numbers and studies from Mozambique)	Prof. Macamo
15:00 – 17:00	<i>Module II – The economics of the mangroves.</i> Economic Valuation (EV) of Environmental Resources: Environmental management (concepts and examples).	Prof. Orlandoni & Ramoni J.
17:00 – 19:00	<i>Module III – Bioacoustic monitoring of mangroves.</i> The underwater acoustic field.	Prof. Moretti
Dinner time		
20:00 –	Activities related to the projects (data analysis, literature searching, report writing, etc.)	
<b>DAY 6 (10/05/2024)</b>		
Breakfast time		
08:00 – 12:00	Practical session. Development of the projects.	Prof. Macamo, Ramoni J., Orlandoni, and Moretti
Lunch time		
13:00 – 15:00	<i>Module I – Mangroves.</i> Threats and impacts (in Mozambique)	Prof. Macamo
15:00 – 17:00	<i>Module II – The economics of the mangroves.</i> Contingent valuation applications: basic statistical tools, descriptive statistics, construction of questionnaires.	Prof. Orlandoni & Ramoni J.
17:00 – 19:00	<i>Module III – Bioacoustic monitoring of mangroves.</i> Summary of measurements, discussion, and initial conclusions.	Prof. Moretti
Dinner time		
20:00 –	Activities related to the projects (data analysis, literature searching, report writing, etc.)	
<b>DAY 7 (10/06/2024)</b>		
Breakfast time		
08:00 – 12:00	Practical session. Development of the projects.	Prof. Macamo, Ramoni J., Orlandoni, and Moretti
Lunch time		
13:00 – 15:00	<i>Module I – Mangroves.</i> Governance (including responses to threats)	Prof. Macamo
15:00 – 17:00	<i>Module II – The economics of the mangroves.</i> Contingent valuation applications: Regression methods, logistic regression	Prof. Orlandoni & Ramoni J.
17:00 – 19:00	<i>Module III – Bioacoustic monitoring of mangroves.</i> Activities related to the project.	Prof. Moretti
Dinner time		
20:00 –	Activities related to the projects (data analysis, literature searching, report writing, etc.)	
<b>DAY 8 (10/07/2024)</b>		
Breakfast time		
08:00 – 12:00	Activities related to the projects (data analysis, literature searching, report writing, etc.).	Prof. Macamo, Ramoni J., Orlandoni, and Moretti
Lunch time		



13:00 – 15:00	Activities related to the projects (data analysis, literature searching, report writing, etc.).	Prof. Macamo, Ramoni J., Orlandoni, and Moretti
15:00 – 17:00	Projects' presentations.	Prof. Macamo, Ramoni J., Orlandoni, and Moretti
Dinner time		
<b>DAY 9 (10/08/2024)</b>		
Breakfast time		
08:00 – 12:00	Free time	
Lunch time		
13:00 – 19:00	Free time	
Dinner time		
<b>DAY 10 (10/09/2024)</b>		
Breakfast time		
08:00 – 12:00	Presentation of the second-week professors. Practical session. Proposal of projects by the three invited professors. Formation of student groups. Selection of the responsible student for each project. Discussion of the methodologies to be implemented.	Prof. Di Franco, Cannicci, Ramoni P.
Lunch time		
13:00 – 15:00	<i>Module IV – Crustaceans and mangroves.</i> Introduction on the phylogeny, morphology and physiology of mangrove crustaceans, with particular focus on true crabs (Brachyurans)	Prof. Cannicci
15:00 – 17:00	<i>Module V – Fishes and mangroves.</i> Introduction to ichthyology.	Prof. Di Franco
17:00 – 19:00	<i>Module VI – Mangroves: A bird's paradise.</i> Introduction to ornithology.	Prof. Ramoni P.
Dinner time		
20:00 –	Activities related to the project (data analysis, literature searching, report writing, etc.)	
<b>DAY 11 (10/10/2024)</b>		
Breakfast time		
08:00 – 12:00	Practical session. Development of the projects.	Prof. Di Franco, Cannicci, Ramoni
Lunch time		
13:00 – 15:00	<i>Module IV – Crustaceans and mangroves.</i> A crash-course guide to the identification of the crustacean species common in Mozambican mangroves.	Prof. Cannicci
15:00 – 17:00	<i>Module V – Fishes and mangroves.</i> Fish anatomy and physiology.	Prof. Di Franco
17:00 – 19:00	<i>Module VI – Mangroves: A bird's paradise.</i> Bird identification basics.	Prof. Ramoni
Dinner time		
20:00 –	Activities related to the projects (data analysis, literature searching, report writing, etc.)	
<b>DAY 12 (10/11/2024)</b>		
Breakfast time		
08:00 – 12:00	Practical session. Development of the projects.	Prof. Di Franco, Cannicci, Ramoni
Lunch time		
13:00 – 15:00	Module V – Crustaceans and mangroves. Mangrove crabs monitoring: in field strategies and survey techniques.	Prof. Cannicci
15:00 – 17:00	Module IV – Fishes and mangroves. Fish identification techniques.	Prof. Di Franco
17:00 – 19:00	Module VI – Mangroves: A bird's paradise. Birds and mangroves.	Prof. Ramoni
Dinner time		
20:00 –	Activities related to the projects (data analysis, literature searching, report writing, etc.)	
<b>DAY 13 (10/12/2024)</b>		



Breakfast time		
08:00 – 12:00	Practical session. Development of the projects.	Prof. Di Franco, Cannicci, Ramoni P.
Lunch time		
13:00 – 15:00	<i>Module IV – Crustaceans and mangroves.</i> Mangrove crabs: morphological and physiological adaptations to life in unusual intertidal forests.	Prof. Cannicci
15:00 – 17:00	<i>Module V – Fishes and mangroves.</i> Fish behaviour and ecology.	Prof. Di Franco
17:00 – 19:00	<i>Module VI – Mangroves: A bird's paradise.</i> Avian monitoring techniques.	Prof. Ramoni P.
Dinner time		
20:00 –	Activities related to the projects (data analysis, literature searching, report writing, etc.)	
<b>DAY 14 (10/13/2024)</b>		
Breakfast time		
08:00 – 12:00	Practical session. Development of the projects.	Prof. Di Franco, Cannicci, Ramoni P.
Lunch time		
13:00 – 15:00	<i>Module IV – Crustaceans and mangroves.</i> Behavioral adaptations of mangrove crabs: the ecological roles of crabs within the mangrove ecosystem.	Prof. Cannicci
15:00 – 17:00	<i>Module V – Fishes and mangroves.</i> Fish diversity in various aquatic ecosystems with emphasis on mangroves.	Prof. Di Franco
17:00 – 19:00	<i>Module VI – Mangroves: A bird's paradise.</i> A primer on bioacoustics.	Prof. Ramoni P.
Dinner time		
20:00 –	Activities related to the projects (data analysis, literature searching, report writing, etc.)	
<b>DAY 15 (10/14/2024)</b>		
Breakfast time		
08:00 – 12:00	Activities related to the projects (data analysis, literature searching, report writing, etc.).	Prof. Di Franco, Cannicci, Ramoni P.
Lunch time		
13:00 – 15:00	Activities related to the projects (data analysis, literature searching, report writing, etc.).	Prof. Di Franco, Cannicci, Ramoni P.
15:00 – 17:00	Projects' presentations.	Prof. Di Franco, Cannicci, Ramoni P.
Dinner time		
<b>DAY 16 (10/15/2024)</b>		
Breakfast time		
08:00 – 12:00	Free time.	
Lunch time		
13:00 – 19:00	Free time.	
Dinner time		
<b>DAY 17 (10/16/2024)</b>		
Breakfast time		
08:00 – 12:00	Presentation of the third-week professors. Practical session. Proposal of projects by the three invited professors. Formation of student groups. Selection of the responsible student for each project. Discussion of the methodologies to be implemented.	Prof. Bourgeois, Sharma, Mandujano
Lunch time		
13:00 – 15:00	<i>Module VII – Mangrove restoration 1.</i> Introduction: global state of mangrove forests, loss drivers <i>and what to expect for the future.</i>	Prof. Bourgeois



15:00 – 17:00	<i>Module IIX – Mangrove restoration 2. The biogeochemistry of mangrove's ecosystem services.</i>	Prof. Sharma
17:00 – 19:00	<i>Module IX – Ecological concepts for wildlife conservation and management. General concepts of biodiversity and importance for conservation.</i>	Prof. Mandujano
Dinner time		
20:00 –	Activities related to the project (data analysis, literature searching, report writing, etc.)	
<b>DAY 18 (10/19/2024)</b>		
Breakfast time		
08:00 – 12:00	Practical session. Development of the projects.	Prof. Bourgeois, Sharma, Mandujano
Lunch time		
13:00 – 15:00	<i>Module VII – Mangrove restoration 1. Decision-making for mangrove conservation/rehabilitation/reforestation: step by step protocol.</i>	Prof. Bourgeois
15:00 – 17:00	<i>Module IIX – Mangrove restoration 2. Mangrove reforestation and expansion: biogeochemistry and ecophysiological considerations.</i>	Prof. Sharma
17:00 – 19:00	<i>Module IX – Climate finance of mangrove conservation and rehabilitation.</i>	Prof. Mandujano
Dinner time		
20:00 –	Activities related to the projects (data analysis, literature searching, report writing, etc.)	
<b>DAY 19 (10/20/2024)</b>		
Breakfast time		
08:00 – 12:00	Practical session. Development of the projects.	Prof. Bourgeois, Sharma, Mandujano
Lunch time		
13:00 – 15:00	<i>Module VII – Mangrove restoration 1. Development of the projects.</i>	Prof. Bourgeois
15:00 – 17:00	<i>Module IIX – Mangrove restoration 2. Development of the projects.</i>	Prof. Sharma
17:00 – 19:00	<i>Module IX – Ecological concepts for wildlife conservation and management. Population ecology applied to wildlife management.</i>	Prof. Mandujano
Dinner time		
20:00 –	Activities related to the projects (data analysis, literature searching, report writing, etc.)	
<b>DAY 20 (10/21/2024)</b>		
Breakfast time		
08:00 – 12:00	Practical session. Development of the projects.	Prof. Bourgeois, Sharma, Mandujano
Lunch time		
13:00 – 15:00	<i>Module VII – Mangrove restoration 1. Development of the projects.</i>	Prof. Bourgeois
15:00 – 17:00	<i>Module IIX – Mangrove restoration 2. Development of the projects.</i>	Prof. Sharma
17:00 – 19:00	<i>Module IX – Ecological concepts for wildlife conservation and management. Analysis of the distribution and abundance of meta(populations) at different geographic, ecological and administrative scales.</i>	Prof. Mandujano
Dinner time		
20:00 –	Activities related to the projects (data analysis, literature searching, report writing, etc.)	
<b>DAY 21 (10/22/2024)</b>		
Breakfast time		
08:00 – 12:00	Activities related to the projects (data analysis, literature searching, report writing, etc.).	Prof. Bourgeois, Sharma, Mandujano
Lunch time		



13:00 – 15:00	Activities related to the projects (data analysis, literature searching, report writing, etc.).	Prof. Bourgeois, Sharma, Mandujano
15:00 – 17:00	Projects' presentations.	Prof. Bourgeois, Sharma, Mandujano
Dinner time		
<b>DAY 21 (10/22/2024)</b>	<b>Return of students and third-week professors to Maputo</b>	
<b>DAY 22 (10/23/2024)</b>		
Breakfast time		
08:00 – 12:00	Theory-practical sessions. Pedologic activities at Laboratories at Eduardo Mondlane University	Prof. Armino Cambule
Lunch time		
13:00 – 17:00	Theory-practical sessions. Pedologic activities at Laboratories at Eduardo Mondlane University	Prof. Armino Cambule
Dinner time		
<b>DAY 23 (10/24/2024)</b>		
Breakfast time		
08:00 – 12:00	Theory-practical sessions. Pedologic activities at Laboratories at Eduardo Mondlane University	Prof. Armino Cambule
Lunch time		
13:00 – 17:00	Theory-practical sessions. Pedologic activities at Laboratories at Eduardo Mondlane University	Prof. Armino Cambule
Dinner time		
<b>DAY 23 (10/25/2024)</b>		
Breakfast time		
08:00 – 12:00	Theory-practical sessions. Pedologic activities at Laboratories at Eduardo Mondlane University	Prof. Armino Cambule
Lunch time		
13:00 – 17:00	Theory-practical sessions. Pedologic activities at Laboratories at Eduardo Mondlane University	Prof. Armino Cambule
Dinner time		
<b>DAY 24 (10/26/2024)</b>	<b>Official closure of the course</b>	
<b>DAY 25 (10/27/2024)</b>	<b>Italian students depart</b>	

Please note that this syllabus can be further customized based on the specific goals, duration, and resources available for the course.