# Seychelles Maritime Academy

ADVANCED CERTIFICATE IN FISHERIES SCIENCE & FISHING TECHNOLOGY

## LEARNERS PROGRAMME HANDBOOK

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# VISION

"To contribute skilled professionals to the fishing industry who can be the key in the development of Seychelles Blue Economy".

# MISSION

*"Mentoring the younger generation to be an integral part of Seychelles' fishing industry through quality training, both theoretically and practically by the skilled instructors using the advances facilities".*

# Introduction

## RATIONALE OF THE COURSE

Seychelles has vast natural resources of ocean with an EEZ of about 1.4 squares million kilometers. Ocean also forms the backbone of the country's economy and is a vital source of employment for the younger generation. However, there is a need to encourage the young Seychellois to take up a career at sea and this would be the only possible with the availability of quality maritime training in Seychelles. In the present day scenario, it is pertinent that this training is in tune with the international standards in this field, which will enable the younger generation to compete with counterparts from other countries in the maritime job market.

The fishing sector is also one of the pillars for the local economy. The industrial fishing fleets currently operating employ mainly foreign seaman. There is always significant demand for trained personnel in the Fisheries Sector.

**ENTRY REQUIREMENTS**

School leavers who have satisfactorily completed S5 (IGCSE level) and have attained D grade or above in

- English,
- Mathematics
- Biology

Learner should also be:

- Physically and mentally fit.
- Have a secondary school's Record of Achievements including studies and projects in the maritime field.
- Ability to swim 50 meters.
- Have the aptitude to withstand overnight fishing trips.
- Have proven attitude and interest in Fisheries. A strong liking for sea and maritime related activities.
- Have a high standard of conduct and discipline.
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In addition learners must:

Have proven aptitude and interest in the course applied for

- Have the aptitude to withstand overnight fishing trips.
- Have a high standard of conduct and discipline.

Candidates are also advised that maritime career as demand physical and medical fitness, including hearing, eyesight and colour vision. The ability to swim 50 metres is also necessary.

**Technical pathway**

- 02 years of experience in the Fisheries industry.

**Advanced Certificate Fisheries Science & Fishing Technology (Year 02)**

**Academic pathway:**

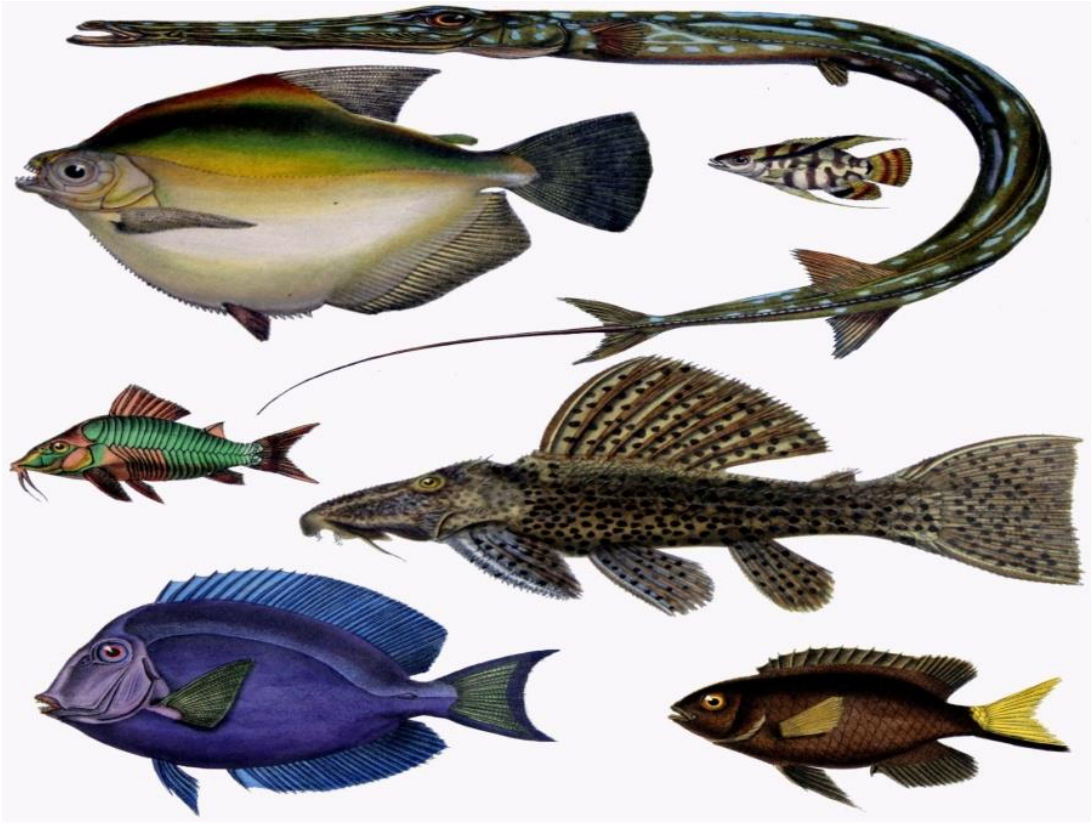
**Certificate in Fishing Technology,**

PROGRESSION CRITERIA

- General average: 65%
- All the units are to be passed
- Minimum attendance: 90%

**Technical pathway:**

Pass in Certificate in Fishing Technology course with 2 years of relevant experience in the Fisheries Industry.



## IDENTIFICATION OF PROGRAMME

## General description of the occupation of a fisheries technician

### 1.1 Definition of the occupation (Fisheries technician)

A Fisheries technician is a person who works in the fisheries sector. He/she must be knowledgeable and skilled in conducting fishing trips, operating mariculture and aquaculture farms, processing fish and prawns, carrying out research and undertaking administrative duties, and carrying out fish inspection and marketing duties in conformity with safety rules and regulations and quality control. A fisheries technician must be committed, reliable, responsible, and methodical.

## GENERAL GOAL OF THE COURSE DERIVED FROM THE DEFINITION OF THE OCCUPATION

As the island is having more sea than land, the courses offered at S.M.A. are providing trained and qualified citizens to the vast areas of Fisheries, Tourism and Maritime Industry.

- **CERTIFICATE IN FISHING TECHNOLOGY**

The course is so designed to equip the students with the skills and knowledge to be employable in Artisanal Fishing Sector.

- **ADVANCED CERTIFICATE IN FISHERIES SCIENCE & FISHING TECHNOLOGY**

The course is so designed to equip the students to meet the different job opportunities in the field of Fisheries. The students will be having two options to select for their Advanced Study after completing their Certificate Level.

- Option 01: Fishing Technology
- Option 02: Fisheries Science

## POSSIBLE OCCUPATIONS

### ❖ CERTIFICATE IN FISHING TECHNOLOGY

Occupation(s) targeted for the graduates of the Course: Fisherman (Artisanal) & Gear Technician.

### ❖ ADVANCED CERTIFICATE IN FISHERIES SCIENCE & FISHING TECHNOLOGY

Occupation(s) targeted for the graduates of the Course;

***Option 01***- Fisherman/skipper (Semi Industrial)

- diver /skipper (Sea Cucumber industry)
- Gear Technician (Industrial Net Mending & Repair,)
- Fishing Gear Apparatus Technician (Echo Sounder, Electrical Reels, Fish Finder)
- Scientific observer onboard industrial fishing vessel.
- Fly fishing guide

***Option 02-***

- Quality Control technician {Indian Ocean Tuna (I.O.T.), Sea Harvest, Oceana Fisheries, Seychelles Fishing Authority (S.F.A.) & Fish Inspection Quality Control Unit (F.I.Q.C.U), Indian Ocean Tuna Commission (I.O.T.C.)}
- Pond Technician
- Farm Technician
- Lab Technician
- Assistant Fish inspector
- Park Rangers
- Assistant Marine biologist etc.

# Competencies

# Certificate in Fisheries Science & Fishing Technology Year 1

**List of Competencies: Advanced Certificate in Fisheries Science and Fishing Technology – Year 1**

| N$^0$ | Statement of Competency | Course Title | Contact hrs | Non-Contact hrs |
|---|---|---|---|---|
| 1 | Basic safety courses STCW 1978 as amended;<br>• Proficiency in elementary first aid<br>• Proficiency in personal safety and social responsibilities<br>• Proficiency in personal survival techniques<br>• Proficiency in fire prevention and fire fighting<br>• Proficiency in ship security awareness | • Proficiency in elementary first aid<br>• Proficiency in personal safety and social responsibilities<br>• Proficiency in personal survival techniques<br>• Proficiency in fire prevention and fire fighting<br>• Proficiency in ship security awareness | 70 | 35 |
| 2 | Analyse Fisheries Industry in Seychelles | Fisheries Industry in Seychelles | 45 | 20 |
| 3 | Apply basic knowledge on Biology Of Fish | Fish Biology | 45 | 20 |
| 4 | Apply Mathematical skills in the context of fisheries science | Mathematics | 30 | 15 |
| 5 | Apply English for oral and written communication | Maritime English | 60 | 30 |
| 6 | Apply artisanal Fishing techniques | Artisanal Fishing Techniques | 90 | 45 |
| 7 | Apply French for oral and written communication | Maritime French | 60 | 30 |
| 8 | Apply information and communication technology skills (ICT) | ICT | 60 | 30 |
| 9 | Apply rules, laws and regulations in the context of Fisheries science | Fisheries Legislation | 45 | 20 |
| 10 | Apply basic mechanics in the context of fisheries science | Basic Marine Mechanics | 45 | 20 |
| 11 | Apply basic navigation and seamanship techniques | Navigation And Seamanship Techniques | 30 | 15 |
| | | | | |
| | | | | |
| **Total Contact and Non-Contact Hours** | | | **625** | **300** |
| **Total N$^0$ of Hours** | | | **925** | |

| | | |
|---|---|---|
| Total Contact and Non-Contact Hours | C 625 hrs + NC 300 hrs | 925 hrs |
| Apply knowledge and skills of fisheries industry during work-based experience | | 320 hrs |
| **TOTAL** | | **1245 hrs** |

**Type and frequency of Work-Based Experience:**

| Semester | Number of weeks | Number of hours for the semester |
|---|---|---|
| **Semester 01** | 4 | 160 |
| **Semester 02** | 4 | 160 |
| **Total hours :** | **8** | **320 hours** |

**Advanced Certificate in Fisheries Science & Fishing Technology – Year 1 = 1245 notional hours**
**Work Based Experienced = 320 hours**
**Total Number of Courses – Year 1 = 12 courses**
**Total Duration = 1245 hours**
**Total Number of Credits = 124.5**

**List of Competencies: Advanced Certificate in Fisheries Science and Fishing Technology – Year 2 Option 1**

| N⁰ | Statement of Competency | Course Title | Contact hrs | Non-Contact hrs |
|---|---|---|---|---|
| 1 | Apply fishing techniques | Semi Industrial Fishing | 90 | 45 |
| 2 | Demonstrate understanding of Plan, Prepare & Conduct Fishing Trip | Planning, Preparation Of Fishing Trips-II | 90 | 45 |
| 3 | Demonstrate understanding of Plan, Prepare & Conduct Fishing Trip | Conduct Of Fishing Trips-II | 90 | 45 |
| 4 | Apply navigation and seamanship techniques | Navigation & Seamanship | 90 | 45 |
| 5 | Apply administrative and basic accounting skills in the context of fisheries science | Basic Administration & Accounting | 45 | 20 |
| 6 | Apply basic marketing and customer care principles and practices | Basic Customer Care & Marketing | 45 | 20 |
| 7 | Apply information and communication technology skills (ICT) | ICT | 75 | 40 |
| 8 | Use Spanish for oral communication | Spanish | 75 | 40 |
| 9 | Apply statistical skills in the context of fisheries science | Statistics | 60 | 30 |
| | | | | |
| | **Total Contact and Non-Contact Hours** | | **660** | **330** |
| | **Total No. of Hours** | | **990hrs** | |

| | | |
|---|---|---|
| Total Contact and Non-Contact Hours | C 660 hrs + NC 330 hrs | 900 hrs |
| Apply knowledge and skills of fisheries science during work-based experience | | 320 hrs |
| **TOTAL** | | **1310 hrs** |

**Type and frequency of Work-Based Experience:**

| Semester | Number of weeks | Number of hours for the semester |
|---|---|---|
| Semester 03 | 4 | 160 |
| Semester 04 | 4 | 160 |
| Total | 8 | 320 |

**Advance Certificate in Fisheries Science and Fishing Technology – Year 2 Option 1= 1310 notional hours**
**Work-Based Experience = 320 hrs**
**Total Number of Courses – Year 2 Option 1 = 9 courses**
**Total Duration = 1310 hours**
**Total Number of Credits = 131**

**List of Competencies: Advanced Certificate in Fisheries Science and Fishing Technology – Year 2 Option 2**

| N⁰ | Statement of Competency | Course Title | Contact hrs | Non-Contact hrs |
|---|---|---|---|---|
| 1 | Demonstrate knowledge of marine organisms and species in their habitats | Marine Organism | 60 | 30 |
| 2 | Execute routine operational activities related to Mari-culture farm | Mari-culture | 60 | 30 |
| 3 | Demonstrate basic biology knowledge in the context of fisheries science | Fisheries Biology | 60 | 30 |
| 4 | Apply HACCP and quality control principles & practices | HACCP | 60 | 30 |

| | | | | |
|---|---|---|---|---|
| 5 | Apply statistical skills in the context of fisheries science | Statistics | 60 | 30 |
| 6 | Conduct fish inspection & execute all activities related to the processing, the packaging and export shipment of fish product | Fish Inspection, Processing, Packing & Shipment | 60 | 30 |
| 7 | Apply administrative and basic accounting skills in the context of fisheries science | Basic Administration & Accounting | 45 | 20 |
| 8 | Apply basic marketing and customer care principles and practices | Basic Customer Care & Marketing | 45 | 20 |
| 9 | Apply information and communication technology skills (ICT) | ICT | 75 | 40 |
| 10 | Apply and Use Spanish for oral communication | Spanish | 75 | 40 |
| 11 | Apply Research in the context of fisheries science | Research | 60 | 30 |
| | | | | |
| | **Total Contact and Non-Contact Hours** | | **660** | **330** |
| | **Total No. of Hours** | | **990 hrs** | |

| | | |
|---|---|---|
| Total Contact and Non-Contact Hours | C 660 hrs + NC 330 hrs | 990 hrs |
| Apply knowledge and skills of fisheries science during work-based experience | | 320 hrs |
| **TOTAL** | | **1310 hrs** |

**Type and frequency of Work-Based Experience:**

| **Semester** | **Number of weeks** | **Number of hours for the semester** |
|---|---|---|
| **Semester 03** | 4 | 160 |
| **Semester 04** | 4 | 160 |
| **Total** | 8 | 320 |

**Advance Certificate in Fisheries Science and Fishing Technology – Year 2 Option 1= 1310 notional hours**
**Work-Based Experience = 320 hrs**
**Total Number of Courses – Year 2 Option 1 = 12 courses**
**Total Duration = 1310 hours**
**Total Number of Credits = 131**

# EXIT PROFILE YEAR 1 (Certificate)

**Definition of the occupation:** A Fisheries technician is a person who works in the fisheries sector. He/she must be knowledgeable and skilled in conducting fishing trips, operating Mariculture farms, processing fish and prawns, carrying out research and undertaking administrative duties, and carrying out fish inspection and marketing duties in conformity with safety rules and regulations and quality control.

## Common areas

| Specific competencies | Sciences | Communication |
|---|---|---|
| Analyse fisheries industry in Seychelles | Demonstrate knowledge of marine organisms and species in their habitats | Use English for oral and written communication |
| Execute all activities related to the processing, the packaging and export shipment of fish product | Demonstrate basic biology knowledge in the context of fisheries science | Use French for oral and written communication |
| Demonstrate knowledge and skills of fisheries science in work based-experience | Apply sampling techniques in the context of fisheries science | Use Spanish for oral communication |
| Execute routine operational activities related to mariculture farm | Apply mathematical skills in the context of fisheries science | Apply communication skills in the context of fisheries science |
| Participate in research projects in the context of fisheries science | Apply statistical skills in the context of fisheries science | Apply radio and telecommunication skills |
| Conduct fish inspection | | Apply information and communication technology skills (ICT) |
| Apply basic marine mechanics in the context of fisheries science | | |
| Apply fishing techniques (artisanal and semi-industrial fisheries/ industrial) | | |
| Apply basic navigation techniques | | |
| Conduct fishing trip | | |

| Legislation | Safety | Management |
|---|---|---|
| Apply rules, laws and regulations in the context of fisheries science | Apply swimming and diving techniques<br>Apply elementary first aid techniques<br>Demonstrate life saving skills<br>Apply basic fire prevention and fire fighting techniques on board vessel<br>Apply health and safety procedures (PSSR, PST) | Apply administrative and basic accounting skills in the context of fisheries science<br>Apply basic marketing and customer care principles and practices<br>Apply HACCP and quality control principles and practices<br>Prepare fishing trip |

## Attitudes

| | | | | |
|---|---|---|---|---|
| **Responsibility** | **Commitment** | **Resourcefulness** | **Methodical/ Rigour** | **Alertness** |

**Educational intentions :**

- Protect and conserve the marine environment
- Contribute to the economic development of the country
- Promote status of maritime professionals
- Provide compulsory training for standardisation

# EXIT PROFILE 2 (Advanced Certificate Option 1)

**Definition of the occupation:**

***Option 01***: Fishing Technology

A Semi Industrial fisherman is a person who works in the semi industrial fishing sector. He/ she must be knowledgeable and skilled in planning, Preparing and conduct fishing trip. He/she must be well verse in different fishing gears and fishing method practised in the preservation onboard.

## Common areas

### Specific competencies

Apply fishing techniques

Apply basic marine mechanics in the context of fisheries science

Participate in fishing trips

Plan, Prepare and Conduct fishing trips

Apply basic navigation and seamanship techniques

Execute all activities related to the handling, the preservation, the processing, the packaging and export shipment of fish products

Apply principles and practices of marine craft production

Demonstrate knowledge and skills of fishing technology in work based-experience

### Sciences

Demonstrate basic knowledge on biology and ecology of fish

Demonstrate knowledge of mathematical skills in the context of fisheries science

### Communication

Use English for oral and written communication in the context of fisheries science

Use French for oral and written communication in the context of fisheries science

Apply radio and telecommunication skills

Use ICT in different contexts

Use Spanish for oral communication in the context of fisheries science

## Safety

Apply elementary first aid principles and practices

Apply basic fire prevention and fire-fighting techniques on board vessel

Apply health and safety procedures (PSSR, PST)

Apply swimming and diving techniques

## Legislation

Analyse fisheries industry in Seychelles

Apply rules, laws and regulations in the context of fisheries industry

## Management

Apply administrative and basic accounting skills in the context of fisheries science

Apply basic marketing and customer care principles and practices

## Attitudes

| | | | | |
|---|---|---|---|---|
| Responsibility | Commitment | Resourcefulness | Methodical/Rigour | Alertness |

**Educational intentions :**

- Protect and conserve the marine environment
- Contribute to the economic development of the country
- Promote status of maritime professionals
- Provide compulsory training for standardisation

# EXIT PROFILE 2 (Advanced Certificate Option 2)

**Definition of the occupation:**

Option 02: Fisheries Science

A person with Advanced Certificate in Fisheries Science & Fishing Technology will be working in the Fisheries Sector and related fields. He/she must be knowledgeable and skilled in operating mariculture farms, processing fish and prawns, carrying out Sampling, Fish Inspection and undertaking administrative duties, and marketing duties in conformity with safety rules and regulations and quality control.

## Common areas

### Specific competencies

Apply fishing techniques

Apply basic marine mechanics in the context of fisheries science

Participate in fishing trips

Apply basic navigation and seamanship techniques

Execute all activities related to the handling, the preservation, the processing, the packaging and export shipment of fish products

Execute routine operational activities related to aquaculture farm

Conduct fish inspection

Demonstrate knowledge and skills of fishing technology in work based-experience

### Sciences

Demonstrate basic knowledge on biology and ecology of fish

Demonstrate knowledge of mathematical skills in the context of fisheries science

Demonstrate knowledge of marine organisms and species in their habitats

Apply sampling techniques in the context of fisheries science

Apply statistical skills in the context of fisheries science

### Communication

Use English for oral and written communication in the context of fisheries science

Use French for oral and written communication in the context of fisheries science

Apply radio and telecommunication skills

Use ICT in different contexts

Use Spanish for oral communication in the context of fisheries science

## Safety

Apply elementary first aid principles and practices

Apply basic fire prevention and fire-fighting techniques on board vessel

Apply health and safety procedures (PSSR, PST)

Apply swimming and diving techniques

## Legislation

Analyse fisheries industry in Seychelles

Apply rules, laws and regulations in the context of fisheries industry

## Management

Apply administrative and basic accounting skills in the context of fisheries science

Apply basic marketing and customer care principles and practices

Apply HACCP and Quality Control principles and practices

## Attitudes

| Responsibility | Commitment | Resourcefulness | Methodical/Rigour | Alertness |
|---|---|---|---|---|

**Educational intentions :**

- Protect and conserve the marine environment
- Contribute to the economic development of the country
- Promote status of maritime professionals
- Provide compulsory training for standardisation

After successful completion of the two years programme, the learners will be awarded with a Advanced Certificate in Fishing Technology or a Advanced Certificate in Fisheries Science depending of their option. The learners who are not successful in all modules will receive only a reference.

The qualification awarded is Level 3 on the National Qualification Framework (NQF)

## Assessment

The assessment policy of this programme is in line with the assessment policy for professional centers prepared by the Ministry Of Education and Human Resource Development. Assessment approach varies from one unit to another. After completing every elements of the unit, the learners are given an assessment as part of their continuous assessment. An overall assessment will be conducted at the end of each unit/module to assess the overall competency of learner in that unit/module.

## Principles

- Each unit/module shall be assessed independently.
- Assessment activities are representative samples from the domain of learner learning within the unit.
- Assessment shall be based on elements of competency or related outcomes.
- Assessment activities shall be based on skills, knowledge and attitudes.
- Various modes of assessment are used.
- Learners are made aware of the assessment details in the unit outline which is given prior to start of the unit.

- Learners are given opportunities for practice with feedback, before the final assessment/examination.
- Learners gain a clear idea of their own progress and attainment as they proceed through the unit/module.
- The quantity and quality of assessed work is comparable between units/modules.
- The student must successfully complete all the prerequisite units/modules.
- The student must successfully complete all the relevant work-based experience.
- The student must have displayed acceptable standards of professional conduct and behavior
- The student should attend a minimum of 90% of the scheduled contact sessions.

## Recording of marks

- Overall assessment is 60% of total mark for the unit/module.
- Learner must achieve a pass grade for the overall assessment.
- The weighting for individual continuous assessments for the unit/module will depend on the nature of the task and/or the importance of the competency.
- The marks for continuous assessments will be combined and will constitute 40% of the total mark for the unit/module. Learners must achieve a pass mark for continuous assessments.
- Team assessments may not constitute more than 20% of the total mark for the unit/module.
- The grade for continuous assessments and overall assessment shall be combined to give the final grade for the unit/module.
- Learners must achieve a pass mark for continuous assessments and overall assessment combined.
- Final grade for a course/programme shall be based on Grade Point Average (GPA) of all final grades achieved for units/modules.

## Minimum requirements for the attainment of the qualification

1. Learners should pass all the individual units (Pass Mark 55%)
2. Overall Attendance in a Unit/Module: 90%

# Re-sit Policy

- Only one Re-sit is offered per module for the overall examination.
- Only the pass mark will be reflected on the transcript for success on Re-sit.

## Career Pathways in the fishing industry

The learners can be employed as

1. Aquaculture technician
2. Fisheries technician
3. Professional divers
4. Park Rangers (Marine Park)
5. Conservationist officers

## Higher Education Pathways

After successful completion of the Advanced Certificate Programme, the learners can choose their higher studies at the University of Seychelles in the programme

**ENTRY REQUIREMENT TO APPLY FOR UNIVERSITY OF SEYCHELLES AFTER ADVANCED CERTIFICATE IN FISERIES SCIENCE**

- In the top five best performer at the completion of the advance certificate in fisheries science programme.
- Graduate with a distinction.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