

Training programme for icebreaker operators – IceOC Basic

Day 1	Contents	Part	Detailed contents	Resp.
Introduction 0,5 Hour	Explanations, introduction	OC:0	IceOC Basic Course Course Schedule Ice Endorsement Assessments	TT/FTA
Module 1,0 Hour	Organisations	OC:1:1 OC:1:2 OC:1:3 OC:1:4 OC:1:5	SMA Organization and Icebreaker Organization FMA Organization and Icebreaker Organization Financing Icebreaker manning Coordinator	TT/FTA
Module 1,0 Hour	Regulations	OC:2:1 OC:2:2 OC:2:3	Regulations Co-operations between the countries Sweden/Finland Winter Navigation	TT/FTA
Module 0,5 Hour	History	OC:3:1 OC:3:2	The icebreaker development Icebreaker origin	TT/FTA
Module 1,5 Hour	Ice classes and performance Ships in ice	PC:2:1 PC:2:2 PC:2:3 PC:2:4	Ice classes Ice classes for areas where old ice can occur (IACS PC rules) Polar ship rules contra Polar Code Icebreaker classes and SWE-FIN ice classes and equivalent Ship construction, hull, propulsion, power line, stability	TT/FTA
Module 1,0 Hour	Preparations and Safety	PC:5:1 PC:5:2 PC:5:3	Hypothermia, Cold weather health and safety Wind chill, hazards and necessary actions Protective clothing	NOVIA

Day 2				
Module 2,0 Hours	Weather	OC:5:1 OC:5:2 OC:5:3 OC:5:4 OC:5:5	Freeze-up and debacle in Bay and Sea of Bothnia and the Baltic area including the Gulf of Finland Low and high pressure impact on the ice The impact of the wind, waves and swell on the ice and ice movements Knowledge of the weather and ice forecast for the estimated ice movements Polar weather and Polar Low	NT/FMI
Module 1,0 Hours	Satellites	OC:6:1 OC:6:2 OC:6:3 OC:6:4	General information of satellites Types of satellites and performance Satellite images suppliers Resolution and accuracy in images	JV/FMI
Module 1,0 Hours	Ice characteristics Ice properties	PC:1:1 PC:1:2 PC:1:3 PC:1:4 PC:1:5	Sea ice Ice Egg code and equivalent, color code Concentration, floe size and age Difference between First Year Ice (FYI) and Old Ice (SYI and MYI). Forecasting and routing. Access to satellite images and how to use them. Ice regimes in Baltic, Canada and Russia.	JV/FMI
Module 0,5 Hour	Icebreakers	OC:4:1 OC:4:2 OC:4:3	Swedish Icebreakers and general arrangements Finnish Icebreakers and general arrangements Chartered icebreakers	TT/FTA

Day 3				
Module 2,0 Hour	IBNet	OC:8:1 OC:8:2	General information Education onboard and education handbook	TT/FTA
Module 1,0 Hour	Equipment's performance in cold climate	PC:8:1 PC:8:2 PC:8:3 PC:8:4	Equipment and materials Life-saving and fire-fighting equipments Effects of iceing Aids for navigation	MW/Novia
Module 0,5 Hours	Communications during icebreaking	OC:7:1 OC:7:2 OC:7:3 OC:7:4 OC:7:5 OC:7:6 OC:7:7 OC:7:8 OC:7:9	The need of communications and the importance of clear communications Satellite / VSAT Net1 / UkkoMobile IRIDIUM Mobile telephone VHF MF/HF Flight VHF UHF	SE/Arctia
Module 1 Hours	Icebreaker operations	OC:9:1 OC:9:2 OC:9:3 OC:9:4 OC:9:5 OC:9:6 OC:9:7 OC:9:8	General of the icebreaker operations Icebreaker bridge operations and duties in port Master duties, CO duties, 2 nd duties Officers duties when connecting and de-connecting towing Reporting Ice-routings Helicopter Orders from icebreakers	SE/Arctia
Module 2 Hours	Safe Operation Danger in ice operations	PC:3:1 PC:3:2 PC:3:3 PC:3:4	Damages to hull, propulsion and steering arrangement Remote areas, difficulties to get medevac and other assistance Extremely quick changes in wind force and direction resulting in dangerous changes in ice movements Ice pressure	SE/TT Arctia/FTA
0,5 Hours			Introduction to simulator training sessions	Novia

Simulator Practical training IceOC Basic

10 Hours

Module	Contents	Part	Detailed contents	Resp.
Module ST:1	Familiarization of equipment and maneuvering in ice	ST:1:1 ST:1:2 ST:1:3 ST:1:4 ST:1:5	Theory of the maneuverings Going through the ridges Maneuvering in ice channel Maneuvering passing iceberg Maneuvering through ice-pressure	
Module ST:2	Break loose coming from astern	ST:2:1 ST:2:2	Theory of the maneuverings Simulator training	
Module ST:3	Break loose coming from ahead	ST:3:1 ST:3:2	Theory of the maneuverings Simulator training	
Module ST:4	Assisting in the notch without wire	ST:4:1 ST:4:2	Theory of the maneuverings Simulator training	
Module ST:5	Break loose coming from astern of 2 merchant vessels	ST:5:1 ST:5:2	Theory of the maneuverings Simulator training	
Module ST:6	Towing	ST:6:1 ST:6:2	Theory of the maneuverings Simulator training	
Module ST:7	Azimuth thruster use for breaking loose operations	ST:7:1 ST:7:2	Theory of the maneuverings Simulator training	

TIMETABLE IceOC Basic COURSE / WEEK 47 2018 – Example timetable

Date	Time	Module	Resp.	Subject
Monday 19 Nov 2018	10:00-10:30		Novia	Welcome
	10:30-11:00	OC:0	FTA	Introduction
	11:00-12:00	OC:1	FTA	Organisations
	12:00-13:00			<i>Lunch</i>
	13:00-14:00	OC:2	FTA	Regulations
	14:00-14:30	OC:3	FTA	History
	14:30-15:00	PC:2	FTA	Ice classes and performance, ships in ice
	15:00-15:30			<i>Coffee break</i>
	15:30-16:00	PC:2	FTA	Ice classes and performance, ships in ice (continues)
	16:00-17:00	PC:5	Novia	Preparations and safety
Tuesday 20 Nov 2018	10:00-12:00	OC:6	FMI	Weather
	12:00-13:00			<i>Lunch</i>
	13:00-14:00	PC:1	FMI	Ice characteristics, ice properties
	14:00-15:00	OC:5	FMI	Satellites
	15:00-15:30			<i>Coffee break</i>
	15:30-16:00	OC:4	FTA	Icebreakers
Wednesday 21 Nov 2018	9:00-11:00	OC:8	FTA	IBNet
	11:00-12:00	PC:8	Novia	Equipment performance in cold climate
	12:00-13:00			<i>Lunch</i>
	13:00-13:30	OC:7	Arctia	Communications during icebreaking
	13:30-14:30	OC:9	Arctia	Icebreaker operations
	14:30-15:00			<i>Coffee break</i>
	15:00-16:30	PC:3	FTA+Arctia	Safe operation, danger in ice operations ice pressure
	16:30-17:00	ST:0	Novia	Introduction to simulator training sessions
Thursday 22 Nov 2018	9:00-17:00	ST:1		Simulator training
		ST:2		
		ST:3		
		ST:4		
		ST:5		
Friday 23 Nov 2018	9:00-15:00	ST:5		Simulator training
		ST:6		
		ST:7		