

# Maxsurf Training Curriculum

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<company>

(Preliminary)



**Attendants:**

**Dates:**

**Subjects:**

<b>Program</b>	<b>Demo</b>	<b>Introductory</b>	<b>Intermediate</b>	<b>Advanced</b>
Maxsurf		✓	✓	
Prefit	✓			
Hydromax		✓	✓	
Workshop	✓			
Hullspeed	✓			
Seakeeper		✓	✓	

**Trainer:**

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**Formation Design Systems Pty Ltd**

# About this document

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Maxsurf training schedules are dependent on the user's skills, required modules and specific requests. This document is to be used as a general guideline on the training topics that can be expected for Maxsurf training and what requirements the user needs to satisfy in order for the training to be effective.

Maxsurf advanced level is not possible in one training session. Advanced level is obtained by practising the intermediate skills in everyday work for at least one month. Then, another training can be organised to target particular issues.

## Pre-requisites

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### Staff skills

Attendees to the Maxsurf training will be assumed to have a good knowledge of Naval Architecture, especially on the topics

- **Hydrostatic stability**
- **Seakeeping analysis**
- **Resistance prediction techniques**

Reasonable computer skills will also be required.

### Training facilities

A training room will have to be prepared including:

- **A projector screen or wall -visible to all attendees- to project onto**
- **A whiteboard or blackboard**
- **Computer network with access to the server for the copy protection device and license manager program**
- **One computer per staff member**
  - **All Maxsurf programs installed**
  - **ShipConstructor and AutoCAD installed (if applicable)**
  - **Preferably the computers should be arranged so that working in pairs is possible**
- **A desk for the Formation Design Systems' staff member large enough for a laptop and have space to take notes, facing the attendees.**

### Formation Design Systems will supply:

- **Laptop and projector, power cables and adaptors**
- **Training manuals**
- **Training CD**
- **Network Copy Protection Device (if applicable)**

## Certification

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The trainer will assess the achieved skills level of each of the attendees in each of the programs and provide the attendee with a Maxsurf training certificate.

# Day 1: Maxsurf

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Morning 9:00 – 13:00

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## Introduction

- **Presentation on Maxsurf programs**
- **Background to NURB surface modelling**
- **Guided tour of Maxsurf User Interface**
- **Creating a design from scratch**
- **Sequence of modelling**
  - **1: Corner control points (Fixed position, snap to marker)**
  - **2: Edge control points (Fix edge shape)**
  - **3: Internal control points (Fairing: let Maxsurf's tools do the work)**
- **Basic fairing guidelines and tools**
- **Surface properties**
- **Maxsurf calculations**
- **Precision**



Create your first design; tutorial 1 (2 hours)

- **Add a surface**
- **Add control points and manipulate into simple ship-shape.**
- **Set up Grid and Frame of Reference**

Afternoon 14:00 – 18:00

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## Introduction II

- **More fairing tools**
  - **Smooth Control points**
  - **Align to vector/plane**
- **Control point controls**



Review design; tutorial 2 (1 hours)



Create a knuckle in the simple design; tutorial 5, 20.1 (1 hour)

- **Use compacted control points a to create a knuckle**
- **Investigate surface fairness**

# Day 2: Maxsurf

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Morning 8:30 – 12:30

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## Multiple surfaces

- Surfaces menu + organisation
- Trimming
- Bonding surfaces
- Summary: When to use trimming / bonding / compacted control points



## Trimming

- Add trimming surfaces
- Trim transom, deck edge, bow thruster



## Bonding (tutorial 3)

Afternoon 13:00 – 17:00

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## Importing and Exporting Data

- Exporting
  - Copy and paste
  - 2D/3D DXF & IGES
- Importing
  - DXF background
  - Images
  - DXF markers
- Surface fitting to existing design
  - Prefit standalone surface generation
  - Prefit within Maxsurf



## Maxsurf Summary (tutorial 4)

- Bonding, trimming
- Duplicating, Stiffness

# Day 3: Hydromax

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Morning 8:00 – 12:00

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## Hydromax Introduction

- **Hydromax Concept**
- **Preparing a Maxsurf Design for Hydromax**
- **Checking a design in Hydromax**
- **Analysis input**
  - **Loadcase**
  - **Tanks and Compartments**
  - **Key points**
- **Environment options**
- **Upright Hydrostatics**
- **Equilibrium**
- **Large Angle Stability**



## Hydromax start

- **Open the Hydromax advanced sample model and check the sections**
- **Run an upright hydrostatics, equilibrium and large angle stability**
- **Check criteria**

Afternoon 13:00 – 17:00

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## Hydromax Intermediate

- **Creating custom criteria**
- **Other analysis**
- **Results**
- **Reporting**

# Day 4: Seakeeper + Hullspeed

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The Seakeeper training is based on advanced naval architecture knowledge in seakeeping behaviour. The training will cover primarily how to produce Seakeeper data, rather than what to do with the data.

Morning 8:00 – 12:00

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## Seakeeper

- **Opening a model in Seakeeper**
- **Creating Seakeeper input data**
- **Analysing model**
- **Analysis results**
- **Animating ship movement**



Use a sample design and analyse with Seakeeper.

Afternoon 13:00 – 17:00

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## Hullspeed (1 hour)

- **Opening a Maxsurf design**
- **Hullspeed data**
- **Methods**
- **Results**



## Extra topics (reserved time)

- **Workshop demo**
- **Prefit demo**