Piloting (Coastal Navigation I)

Piloting is the first course in the sequence on navigation, covering the basics of coastal and inland navigation. It focuses on navigation with a GPS as well as traditional charting methods, enabling boaters to find their way even when the GPS fails (and it will!). Also covered: interpreting charts, navigation aids, plotting courses, determining direction and distance, using mariner's compass, planning safe courses, monitoring course progress, and determining position.

Advanced Piloting (Coastal Navigation II)

Advanced Piloting is the second part of the inland and coastal navigation series. It continues to build on the base developed in Piloting and includes practical use of additional electronic navigation systems and other advanced techniques for finding position in unfamiliar waters. Among topics covered are: finding position using bearings and angles, collision avoidance using GPS and RADAR, what to do when the electronics fail, tides, currents and wind and their effect on piloting, and electronic navigation with GPS, chart plotters, RADAR, autopilots, etc. If you are planning to earn your US Coast Guard Captain's License, this course is for you.

Junior Navigation (Offshore Navigation I)

Junior Navigation is the first of a two-part program of study in offshore (open coast) navigation. It is designed as a practical, how-to course using GPS for offshore navigation with sun sight-taking using a sextant as a backup. JN subject matter includes: basic concepts of celestial navigation; how to use the mariner's sextant to take sights of the sun; the importance and techniques of accurate time determination; use of the Nautical Almanac; how to reduce sights to establish lines of position (LOPs); and the use of GPS, special charts, plotting sheets and other navigational data for offshore positioning and passage planning.

Electronic Navigation

Electronic Navigation introduces GPS technology from the most basic receiver to chart plotter systems for navigation on board. The process of navigating by establishing waypoints and routes, and then running the planned courses, is demonstrated. Further, electronic charting software for the desktop computer is examined, with creation of waypoints and routes on the desktop and subsequent download to the onboard unit. Despite differences among the various manufacturers' offerings, a thorough discussion of the features being made available is included.

Special attention is paid to apps for tablets and smartphones that provide the electronic navigation function at the helm, for relatively little cost. Students should be familiar with basic charting concepts such as latitude, longitude, the compass, course plotting, and time/distance calculations.

Weather

The safety and comfort of those who venture out-on-the water have always been weather dependent. In this course students will become keener observers of the weather, but weather observations only have meaning in the context of the basic principles of meteorology - the science of the atmosphere. This course focuses on how weather systems form, behave, move, and interact with one another and reflects the availability of all sorts of weather reports and forecasts on the Internet.

Engine Maintenance

Marine Engine Maintenance covers inboard, outboard and diesel power systems. Learn to diagnose problems, make repairs, and work effectively with marine mechanics. Troubleshooting is emphasized, so students will be confident when working on their boats.

Sail

The Sail course starts with basic boat designs, rigging and sail types, then explains the forces that make a sailboat sail and the physics of sailing. Other chapters over in-depth sailing techniques, including rig tuning; sailing upwind and downwind; helmsmanship; spinnaker handling; heavy seas sailing and storm conditions; docking; anchoring; mooring; knots; and navigation. Option section on sailboat racing is available.

Marine Electrical Systems

Marine Electrical Systems (MES) covers the practice of wiring your boat, including marine electrical wiring standards and diagrams, direct and alternating current, galvanic and stray current corrosion, lightning protection, multimeters, and crimping procedures. Troubleshooting is emphasized, so students should feel comfortable performing even tricky wiring tasks after passing this course.

Marine Communications Systems

Marine Communication Systems is an in-depth, nine chapter class covering systems available to the recreational boater. Students learn to choose the best communications method for their situation. Covered topics include: Radio history and spectrum definitions; Definitions of radio circuits; Global Maritime Distress and Safety System (GMDSS); Updated FCC Rules and regulations; Radiotelephone operating procedures (both voice and digital messaging); High Seas radio - including an expanded section on MF/HF; Satellite communications; Other marine communications systems such as Family Radio Service transceivers.; Troubleshooting of radio installations; Voice Radio Operations