

Course Descriptions

ADVANCED GRADES

Seamanship: Building on the basics learned in *BoatSmart*, *Seamanship* is an important foundation for other "advanced grade" courses. The first part, S101 Seamanship, leads the student through:

- Marlinespike
- Safety
- The Skipper's Responsibilities
- Before Leaving the Dock
- Weather and Wave Forms
- Nautical Etiquette and Customs

The second part of the course, S102 Boat Handling, discusses:

- Hull Design and Care
- Docking and Undocking, Towing, Trailering
- Anchoring, Rafting, Mooring and Dinghies
- Cruising Considerations
- Boating Emergencies - Be Prepared

Piloting: The Piloting course is the first in the sequence of USPS navigation courses covering the basics of coastal and inland navigation. This all-new course focuses on navigation as it is done on recreational boats today and embraces GPS as a primary navigation tool while covering enough of traditional techniques so the student will be able to find his/her way even if their GPS fails. The course includes many in-class exercises, developing the student's skills through hands-on practice and learning. Topics covered include:

- Charts and their interpretation
- Navigation aids and how they point to safe water
- Plotting courses and determining direction and distance
- The mariner's compass and converting between True and Magnetic
- Use of GPS – typical GPS displays and information they provide, setting up waypoints and routes, staying on a GPS route.
- Pre-planning safe courses and entering them into the GPS
- Monitoring progress and determining position by both GPS and traditional techniques such as bearings and dead reckoning
- The "Seaman's Eye" – simple skills for checking that one is on course.

Advanced Piloting: This all-new course continues to build coastal and inland navigation skill, allowing the student to take on more challenging conditions – unfamiliar waters, limited visibility, and extended cruises. GPS is embraced as a primary navigation tool while adding radar, chart plotters, and other electronic navigation tools. As with Piloting, the course includes many in-class exercises, advancing the student's skills through hands-on practice and learning. Topics covered include:

- Review of skills learned in Piloting
- Advanced positioning techniques such as advancing a line of position
- Other electronics: radar, depth sounders, autopilots, chart plotters, laptop computer software, etc.
- Hazard avoidance techniques using electronics (e.g., "keep out" zones in GPS)
- Collision avoidance using radar and GPS
- Working with tides: clearances, depth, effects of current
- Piloting with wind and currents
- The "Seaman's Eye" – simple skills for checking that one is on course

Junior Navigation: Junior Navigation is the first in a two-part program of study in offshore navigation. It is designed as a practical "how to" course. Subject matter includes -

- Precise time determination
- Use of the Nautical Almanac
- Taking sextant sights of the sun, moon, planets and stars

- Reducing sights to establish lines of position
- Special charts and plotting sheets for offshore navigation
- Offshore navigational routines for recreational craft

Navigation: This course is the second part of the study of offshore navigation, further developing the student's understanding of celestial navigation theory. The course covers -

- Additional sight-reduction techniques
- Honing skills in sight taking and positioning
- Orderly methods for the navigator's day's work at sea
- Navigating with minimal resources, as in a lifeboat

ELECTIVES

Cruise Planning: Designed for members who plan to cruise for a day or for as long as a year--in either a sail or powerboat. The manual includes a twelve-month cruise planning timeline. The course is non-modular with one final exam and covers the following topics:

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| • Cruise preparation and planning | • Crew and Provisioning |
| • Boat and Equipment | • Voyage Management |
| • Anchors and Anchoring | • Communications |
| • Security | • Navigation |
| • Chartering | • Weather |
| • Cruising Outside the United States | • Emergencies |

Engine Maintenance: The new modular, more in-depth Engine Maintenance courses are now available. Both of these courses are intended to help the recreational boater and both courses discuss inboards, stern drives, and outboard engines. Even if you've completed EM before, these courses are well worth taking as they introduce new material and provide greater information on all subjects. Completion of both of these modules is required for credit for Engine Maintenance.

- EM 101, *Basic Engine Maintenance*, provides information about marine propulsion systems, basic engine principles, engine components; controls, instruments and alarms, marine engine maintenance, and steering systems. There is a chapter on winter storage and spring servicing that includes a 25-step winterizing checklist.
- EM 102, *Advanced Engine Maintenance*, delves into cooling and exhaust systems, lubrication, fuel and air induction systems, ignition systems, electrical and starting systems, power trains, and trouble-shooting. It concludes with a chapter on emergency repairs afloat.

Marine Electronics: The Marine Electronics course consists of three modules: ME 101, *Boat Electrical Systems*, ME 102, *Marine Radio Communications*, and ME 103, *Marine Electronics for Navigation*. There are no prerequisites for any of these modules: however, it is suggested that a member take ME 101 before taking ME 102. All three modules must be successfully completed to receive credit for Marine Electronics.

- ME 101, *Boat Electrical Systems*, provides information about properties of electricity, electrical power requirements and wiring practices, direct current power, alternating current power, galvanic and stray-current corrosion, lightning protection, and electrical interference.
- ME 102, *Marine Radio Communications*, delves into radio waves and transmitters, receivers and transceivers, antennas and transmission lines, FCC Rules and Regulations, FCC Frequency Plan, marine radiotelephone operating procedures, and other communication services (Emergency Position Indicating Radio Beacon (EPIRB), Digital Selective Calling (DSC), Global Maritime Distress and Safety System (GMDSS), satellite communications, amateur radio, and more).
- ME 103, *Marine Electronics for Navigation*, presents information on depth sounders, RADAR, LORAN-C, GPS Navigation, and two new chapters: Electronic Charting, and Computer-Assisted Navigation (CAN). Members may take this module independent of any other ME module.

Weather: This course furnishes basic weather knowledge for safer and more enjoyable boating. The student will learn to make weather predictions based upon observations of the sky, upon barometer and wind information, as well as weather data provided by maps, satellite images, and radio and TV broadcasts. Wx 101 and Wx 102 use a *USPS* supplement manual together with *The Weather Book* from *USA Today* (second edition, 1997) as the textbook.

Wx 101 - Basic Weather - topics include:

- Effects of Heat and Cold
- Wind and Pressure
- Storms and Fronts
- Rain, Humidity and Fog
- Floods, Droughts, and Winter Precipitation

Wx 102 - Advanced Weather - topics include:

- Thunderstorms and Tornados
- Tropical Weather
- Atmosphere and Clouds
- Forecasting
- Climate

Sail: The course consists of two modules; Sail 101 and Sail 102. The first module covers basic Sail that includes the following topics:

- Sailboat Rigs
- Sail Plans
- Boat Design & Hull Types
- Sails
- Standing Rigging
- Running Rigging
- Wind
- Preparing to Sail
- Sailing Upwind
- Sailing Downwind
- Docking & Anchoring
- Marlinspike Seamanship
- Navigation Rules I

The second part of the course, Advanced Sail, covers the following topics:

- Wind Forces
- Stability
- Balance
- Sail Shape
- Tuning the Rig
- Steering & Helmsmanship
- Spinnaker Handling
- Heavy Weather Sailing
- Storm Conditions
- Sailing Safety
- Sailboat Racing
- Race Management
- Navigation Rules II

Instructor Development: Unlike other USPS courses, the Instructor Development course is not designed to enhance boating skills. Rather, its emphasis is on enhancing instructor skills. The course has been designed to demonstrate interactive teaching methods focused on adult learning. Students are required to prepare lesson plans and give four presentations to their peers utilizing a variety of teaching aids and presentation skills. Each presentation is to be given on a topic from one of the public boating classes with the intent that upon completion of the course every student will be qualified to teach or proctor at a squadron boating class.

Skipper Saver: *Man Overboard* is not the only emergency that can occur on a boat, but it may be the most dreaded. Skipper Saver teaches family members and friends what to do and how to operate the boat if you become disabled for any reason from a fall overboard to something as simple as a sprained ankle or seasickness. This guide is must-reading for anyone who may have to take over operation of a vessel in an emergency.

Operations Training: The operations training program is a management tool which offers members the opportunity to learn about the workings of USPS, including the relationship among squadrons, districts and the national organization. It includes insight into squadron education, training, staffing, planning, conducting a meeting, USPS protocol, and communications. The program, taught in designated modules, normally takes about twelve hours in class; however, there is no exam. Each squadron offers the program at least once each year and encourages all members to complete it. It is a prerequisite for becoming commander, unless waived by the district commander under extenuating circumstances.