

SPRING 2009
Biology 305 – ENS 320
Scientific/Recreational SCUBA Diving Certification Course
LIVING SCHEDULE

Instructor: Mark Flahan, Diving Safety Officer, NAUI Course Director
Office: Physics 240
Office Hours: Monday 11-12 pm, Thursday 1-2pm, or by appointment
Phones: 619-594-6799 direct and messages, (619-977-6275 Cellular)
Recorded dive site, activity and information: 619-594-5867
Weather, surf and dive conditions: 619-221-8824
E-mail: mflahan@sciences.sdsu.edu

Course Objective: While meeting all NAUI and AAUS requirements, train and certify a knowledgeable, effective, competent and safe NAUI Advanced and CSU/AAUS qualified Scientific Diver.

Prerequisites:

1. Successfully complete of swimming proficiency test given at first lab/pool session.
Swimming Pre-entrance Requirements (bathing suits only)
 - a. 25 yards underwater on a single breath
 - b. 400 yard swim in less than 10 minutes
 - c. 50 yard swimmer transport
 - d. 10 minute water tread, 1 minute with a 10-pound weight
2. Medical Exam Approval for SCUBA Diving. Be physically fit to scuba dive as indicated by completing the Medical History Form and passage of a CSU/AAUS medical exam for scuba diving within the previous 6 months.
3. Provide the personal scuba equipment as indicated below.
4. Complete waiver for SCUBA Diving.
5. Be able and prepared to make all the scheduled class meetings, pool sessions and dives.

Special Considerations:

- Physical exams for scuba must be completed within the first 4 weeks.
- Students should be prepared to spend the entire time at the dive site.
- Students should not dive 24 hours prior to ocean dives.
- Students should not fly or go to altitude (over 1000ft) within 24 hours after diving.
- There may be some boat diving and field trips involved. Students will be required to pay the appropriate costs for any rentals, field trips, etc.
- Students may be contacted through e-mail regarding announcements, assignments, activities, schedule changes, etc. You must check your email regularly.
- Messages for Mark must be left at 619-594-6799. Do not call my cell after 10pm.
- Each student must maintain a personal log to be submitted at the end of the course.
- CPR, First Aid, Oxygen Administration certification must be current at end of semester. Courses may be made available as part of course – time permitting.
- **Must earn 80% or better on exams(s) to be eligible for Catalina WIES field trip**
- Final Written Exam on 5-18. Allow extra time for grading, exam review and certification ceremony.

Equipment Considerations:

Student Supplies: Mask
Snorkel
Fins
Boots
Gloves

Wet Suit (6-7mil) with hood
 Weight Belt
 Textbooks

University Supplies: Regulator with AAS
 Gages
 Buoyancy Compensator
 Tank with Air
 Specialized Equipment

Schedule: This is a proposed schedule. **Actual activity, dive site, dive objective or meeting time may vary with the environmental conditions.** La Jolla shores or Mission Bay may be used as an alternate dive sites. This class meets regardless of the weather conditions. Dives are not canceled. PLAN TO ARRIVE EARLY - DO NOT BE LATE!

<u>Wk</u>	<u>Day</u>	<u>Date</u>	<u>Location</u>	<u>Time</u>	<u>Activity</u>
1	Mon Wed	1-26 1-28	Classroom Pool	7 –11am 8 –11am	Orientation , Swim Eval, Equipment
2	Mon Wed	2-2 2-4	Classroom Pool	9 - 10:40am 7 –11am	Physics, Physiology Scuba skills #1, Snorkel Skills
3	Mon Wed	2-9 2-11	Classroom Pool	9 - 10:40am 7 -11am	Physics, Physiology Scuba skills #2
4	Mon Wed	2-16 2-18	Classroom Pool	9 - 10:40am 7 -11am	DCS & Dive Tables Snorkel skills, Scuba skills #3
5	Mon Wed	2-23 2-25	Classroom Pool	9 - 10:40am 7 -11am	Equipment Scuba Skills #4
6	Mon Wed	3-2 3-4	Classroom Pool	9 - 10:40am 7 -11am	Midterm Exam Scuba Skills #5
7	Mon Wed	3-9 3-11	Classroom Ocean	9 - 10:40am 7 - 11am	Oceanography, Marine Life **Snorkel Dive
8	Mon Wed	3-16 3-18	Classroom Ocean	9 - 10:40am 7 - 11am	Panic, Dive Planning Scuba Dive #1
9	Mon Wed	3-23 3-25	Classroom Ocean	9 - 10:40am 7 - 11am	Diving Safety, Scuba Dive #2
10	Mon Wed	3-30 4-1			Spring Break Spring Break
11	Mon Wed	4-6 4-8	Classroom Ocean	9 - 10:40am 7 - 11am	Marine Life, Fish and Game Scuba Dive #3-4
12	Mon Wed	4-13 4-15	Classroom Ocean	9 - 10:40 am 7 - 11am	SCUBA Equipment Scuba Dive #5-6

13	Mon	4-20	Classroom	9 - 10:40am	Rescue and Emergency Procedures
	Wed	4-22	Ocean	7 - 11am	Scuba Dive #7-8, Rescues
14	Mon	4-27	Classroom	8:00-9:3 am	Search & Salvage, Deep & Night
	Wed	4-29	Ocean	7 - 11am	Scuba Dive #9-10
	Fri	5-1	Catalina	5am – 10pm	Catalina Field Trip (5-8 Dives)
	Sat	5-2	Catalina	8am – 10 pm	Catalina Field Trip
	Sun	5-3	Catalina	8am – 4pm	Catalina Field Trip
15	Mon	5-4	Classroom	9 - 10:40am	Special Situations & TBA
	Wed	5-6	Ocean	7 - 11am	Scuba Dive #11-12
16	Mon	5-11	Classroom	9 - 10:40am	Scientific Diving, Review
	Wed	5-13	Ocean	7 - 11am	Scuba Dive #13-14
17	Mon	5-18	Ocean	8 - 10am	Final Exam, Certifications

Texts: NAUI, NAUI Master Scuba Diver, 2004
 NAUI, Master Diver Workbook
 NAUI Plastic Dive Tables
 NAUI Log Book and Training Record
 NAUI First Aid, 2007
 Course Syllabus/handouts/attachments
 CSUC Manual for Diving Safety - supplied sections

- Fees:**
1. Appropriate Lab Fee for pool rental (\$50-60), books, equipment and some materials.
 2. Certification materials fee - \$35. Includes card, certificate and decal.
 3. Personal equipment – Mask, snorkel, fins, boots, gloves. Wet suit and weight belt for ocean dives. Rentals available from local dive stores - \$30/wk for each ocean session.
 4. Physical exam - completed by the first open water SCUBA session or sooner if required by instructor. SDSUHS for \$135.
 5. Optional boat dive or field trip at personal expense.

Certification Requirements for NAUI Advanced and SDSU AAUS Science Diver Certifications:

A. Pass written examinations with minimum score of 80%.

Areas include:

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| 1. Skills and Safety | 7. Diving Emergencies and First Aid |
| 2. Equipment | 8. Decompression, Tables (100%), Computers |
| 3. Physics | 9. Scientific Diving |
| 4. Medical Aspects | 10. Marine Conservation & Fish and Game Regulations |
| 5. Oceanography | 11. Lifesaving and CPR |
| 6. Local Marine Life | 12. Specialized Diving Techniques |

B. Acceptable performance on all skills evaluated during pool practical examination(s).

1. Swimming Pre-entrance Requirements (bathing suits only)
 - a. 25 yards underwater
 - b. 400 yard swim in less than 9 minutes
 - c. 50 yards underwater surfacing no more than 4 times
 - d. 50 yard swimmer transport
 - e. 10 minute water tread, 1 minutes with 10-pound weight

2. Snorkel Skills (snorkel diving equipment)
 - a. 800 yard kick in less than 20 minutes (demonstrating proper kicks)
 - b. Water entries
 - c. Mask and snorkel ditch and recovery
 - d. Surface dives
 - e. Tired divers assists
3. Scuba Skills (full Scuba)
 - a. Select, assemble, adjust all equipment and make thorough buddy check
 - b. Complete rescue of another scuba diver (RBHABET)
 - c. Emergency ascents
 - d. Controlled descents and ascents
 - e. Air sharing - buddy breathing and alternate air source as donor and receiver
 - f. Demonstrate proper weighting and neutral buoyancy on the surface and underwater
 - g. Demonstrate cramp removal and buddy assistance for an exhausted diver
 - h. Equipment removal and replacement on the surface and on the bottom
 - i. Ditch and recovery
 - k. Demonstrate proper buddy system for SCUBA diving

C. Acceptable performance on all skills evaluated during the open water dives.

1. Snorkel Skills evaluated during the snorkel dive (can not be missed)
 - a. Complete rescue of another snorkel diver (RBHABET)
 - b. Demonstrate proper weighting and neutral buoyancy on the surface and underwater
 - c. Select, assemble, adjust all equipment, make thorough buddy check.
 - d. Demonstrate proper buddying techniques
 - e. Surf entries and exits, surface dives, proper kicks
 - f. Mask and snorkel clearing
 - g. Demonstrate proper snorkeling technique
 - h. Tired diver's assists
2. SCUBA Skills (full Scuba) evaluated during the SCUBA dives
 - a. Select, assemble, adjust all equipment and make thorough buddy check
 - b. Demonstrate proper buddy system for SCUBA diving
 - c. Mask and regulator clearing
 - d. Surf entries and exits, surface dives and proper kicks (Boat diving if available)
 - e. Controlled descents and ascents
 - f. Navigate underwater
 - g. Air sharing - buddy breathing and alternate air source as donor and receiver
 - h. Demonstrate proper weighting and neutral buoyancy on the surface and underwater
 - i. Kick 800 yards on the surface
 - j. Emergency ascents
 - k. Bring a diver simulating unconsciousness to the surface, perform artificial respiration, remove equipment for transportation (RBHABET). Must complete rescue dive
 - l. Demonstrate cramp removal and buddy assistance for an exhausted diver
 - m. Equipment removal and replacement on the surface and on the bottom
 - n. Monitor all gauges during dives (prevent running out of air or exceeding maximum depth)
 - o. Complete a minimum of 12 SCUBA Dives for 240 minutes of actual dive time plus snorkel dive for Scientific Diver Certification.
 - p. Complete all specialized dives - rescue, 3R's, night dive, sampling procedures, transects, light salvage, navigation, deeper diving, nitrox if available.
 - q. Safely plan(SEABAG) and complete a dive under instructor supervision
 - r. Complete all log book entries and have countersigned

D. CPR, First Aid, Field Neuro and Oxygen Administration Requirements- If unable to attend scheduled courses, certifications must be completed outside of normal class times.

E. Administrative Requirements

1. Attend all classroom lecture, pool and open water training sessions
2. Current certification in CPR, First Aid and Oxygen Administration.
3. Medical exam approval for SCUBA Diving within last 6 Months.
4. Completion of all administrative details, training and evaluation requirements, and payment of all fees.

F. Instructor's subjective evaluation of student's ability to safely dive following the course.

G. Grading and attendance: Attendance at each session mandatory for certification.

Unexcused absence, failure to make-up required work and your attitude will affect your certification and final standing in the course.

Lecture - 55%

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| 1. Midterm exam | 140 points |
| 2. Certification/Final written examination | 180 |
| 3. Dive site/project proposal/assignments (TBA) | <u>40</u> |
| | Total 360 possible |

A = 370 pts(90%) B = 328 pts(80%) C = 286 pts(70%) D = 246 pts(60%) F = < 246 pts

Lab - 45%

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| 1. Pool practical test(s) (12 skills @ 10 points each - see section 2 above) | 120 points |
| 2. Open water dives & practical tests plus minimum of 9 dives or 80%
(18 Skills @ 10 points each - see section 3 above) | <u>180</u> |
| | Total 300 possible |

A = 270 pts(90%) B = 240 pts(80%) C = 210 pts(70%) D = 180 pts(60%) F = < 179 pts
(In the event that the points for each area of evaluation differ the percentage of the total points available corresponding to each grade will be used.)