

Human Factors in the Underwater Environment

Kinesiology 485

Section: D100

Term: 2006 Spring

Instructor: Lecture: Dr. Jim Morrison - K8512

tel: 291-3669

jmorrison@sfu.ca

Lab/Tutorial: Duncan Milne K8628

tel: 268-6623

dmilne@sfu.ca

Discussion Topics: The theme of this course is human factors in underwater environments with emphasis on the physical and physiological effects of pressure on the human body, the ergonomic design of underwater life support systems and protective equipment, the principles of SCUBA diving, operational procedures, and diving safety. Aspects of diving equipment and procedures will be examined as they relate to solving physiological and human-machine interface problems over the complete range of pressure exposure. Topics covered include:

History of Diving

Work Physiology

Physics of gases

Breathing Apparatus

Decompression theory

Inert Gas Narcosis

Decompression disorders

High Pressure Nervous Syndrome

Treatment of decompression disorders

Diving Accidents

Thermal Protection and hypothermia

Human Factors in the Underwater Environment

Diving Systems

Pulmonary Function

Saturation Diving

Atmospheric Diving Suits

Grading: Midterm - 20%

Laboratory/Assignments- 40%

Final Exam - 40%

All course Labs & Assignments must be handed in by the due date to receive full grade (late work assessed penalty of -5% per day).

Students will only be allowed to write a make-up exam if clear medical evidence of inability to write the scheduled exam is presented. The university provides the exam schedule with registration material. Therefore, a student may not write the final exam at another time except where there is a direct exam conflict or a medical problem.

Required Texts: Courseware will be provided through the bookstore.

Recommended Texts: C Edmonds, C Lowry, J Pennefather, and R Walker. Diving and Subaquatic Medicine. 4th. edition. Oxford University Press, 2002: 719 pages ISBN: 0-340-80630-3.

Materials/Supplies:

Prerequisite/Corequisite: PREREQUISITES: Kin 305, Math 152 or 155. Basic SCUBA certification is recommended (can be taken concurrently).

Notes: MEDICAL:

Diving medical clearance (obtained from family physician) is required for participation in hyperbaric and underwater Labs.

COURSE FEE:

A fee of \$25 is assessed to cover supplementary materials.

This outline is derived from a course outline repository database that was maintained by SFU Student Services and the University's IT Services Department. The database was retired in 2014 and the data migrated to SFU Archives in 2015.