residual stresses; plastic forming of metals.

7743 Defects, Diffusion, and Transformations in Solids (3) F,S: PreReq.: PHYS 2002 or equivalent. Fundamental physical principles of solid state chemistry, crystallography, lattice dynamics and thermodynamics, solid phase transformations, solid state reactions, phase equilibria.

7753 Thermodynamics of Solid Materials (3) PreReq.: ME 2723 or 2733 and first year level course in thermodynamics. Review of thermodynamics; interatomic and electronic forces; relationship of structure to properties; concepts of entropy, enthalpy, free energy; application to metals, semiconductors, glasses.

7763 Advanced Corrosion Science and Engineering (3) PreReq.: ME 4763 or equivalent. Advanced topics in corrosion science and engineering: fundamentals of corrosion, mechanisms of metal-alloy systems, corrosion prevention, environmental and pollution issues, corrosion control.

7813 Computation of Boundary Layer Flows and Heat Transfer (3) PreReq.: ME 3834 and 4433 or equivalent. Theoretical and computational fluid dynamics as applied to boundary layer flows, including the Navier-Stokes equations, heat transfer, and optimization techniques.

7823 Computation of Fluid Flow and Heat Transfer (3) PreReq.: ME 3834, 4433 and ME 4533 or equivalent. Finite-difference methods for solving equations of fluid motion in engineering systems. Several engineering applications used to solve complex problems involving fluid flow, heat transfer, and chemical reaction; numerical models for turbulence, reaction, and heat transfer; system of equations arising from their computing implementation; practical examples and student application of prediction procedures for practical situations.

7833 Inviscid Fluid Flow (3) PreReq.: ME 7863 or equivalent. Non-Newtonian and turbulent fluid mechanics.

7863 Fluid Dynamics (3) PreReq.: credit or registration in MATH 2162 or equivalent. Fluid dynamics as continuum mechanics; potential flow using complex variables in two dimensions and superposition in three dimensions; viscous flow and Navier-Stokes equations; compressible flow, including Mach waves, shocks, and linearized aerodynamics.

7901 Seminar (1) All graduate students are expected to attend this course every semester; only 1 sem. hr. of credit in this course allowed toward degree. Pass-fail grading.

7903 Independent Study in Mechanical Engineering (3) May be taken for a max. of 6 hrs. of credit. Directed independent study for graduate students.

7933, 7943 Mechanical Engineering Problems (3,3) May be taken for a max. of 6 hrs. of credit when topics vary, with consent of department. Mechanical engineering treatment of problems not covered by other courses.

8000 Thesis Research (1-12 per sem.) S'Y* grading.

9000 Dissertation Research (1-12 per sem.) S'Y* grading.

MEDICAL PHYSICS + MEDP

General education courses are marked with stars (*).

2051 Radiation Science for Medical Applications (3) F,S: PreReq.: A grade of C or better in MATH 2162 and credit in PHYS 2092 or equivalent. Introduction to the physics of detection, instrumentation, and data analysis techniques used for radiation therapy, radiological imaging, and medical health physics.

4351 Radiation Detection and Instrumentation (2) F PreReq.: PHYS 2760 or equivalent in MEDP 4531 or equivalent; consent of instructor. Introduction to the physics of detection, instrumentation, and data analysis techniques used for radiation therapy, radiological imaging, and medical health physics.

Nonimmigrant aliens require approval from their governments prior to enrollment in these courses.

1010 Rifle and Pistol Marksmanship (1) hr. lecture; 1 hr. lab. Restricted to freshmen and sophomores or permission of instructor. May be taken for a max. of 6 sem. hrs. credit. Medical physics or health physics projects that study particular aspects of radiation therapy, medical imaging, or medical radiation dosimetry testing.

7991 Advanced Projects in Medical Physics and Health Physics (1-3) PreReq.: MEDP 4111 or 7331 and consent of instructor. May be taken for a max. of 12 sem. hrs. credit. Advanced project using specialized topics in medical physics and health physics technology of current interest.

7999 Research (1) F,S: PreReq.: credit or registration in MEDP 4111 or 7331 and consent of instructor. May be taken for a max. of 12 sem. hrs. credit. Determined investigation of a research problem technical skills.

8000 Thesis Research (1-12 per sem.) S'Y* grading.

Nonimmigrant aliens require approval from their governments prior to enrollment in these courses.

2101 Military Science "MILS"

1011 Leadership and Personal Development (1) F,S: PreReq.: credit or registration in MILS 2101 or equivalent. Leadership focus on developing basic knowledge and comprehension of Army leadership dimensions while situating an understanding of the purpose of the Army, and its advantages for students.

1012 Intro to Tactical Leadership (1) F,S: PreReq.: MILS 1011 or permission of instructor. 1 hr. lab. Overview of leadership fundamentals, including setting direction, problem-solving, listening, presenting briefs, providing feedback, and decision making.

1015 Physical Fitness Training (1) 1 hr. lab. Open to all LSU students. May be taken for a max. of 12 sem. hrs. of credit. Development of strength, stamina, agility, coordination, and flexibility through a combined program of group and individual exercise.

Nonimmigrant aliens require approval from their governments prior to enrollment in these courses.

2161 Innovative Team Leadership (2) F,S: PreReq.: MILS 1011 and 1012 or permission of instructor; 2 hrs. lab. Explores the dimensions of creative and innovative tactical leadership strategies and styles by studying historical case studies and engaging in interactive student exercises.

2162 Foundations of Tactical Leadership (2) F,S: PreReq.: MILS 2161 and MILS 2162 or permission of instructor; 2 hrs. lecture; 1.5 hrs. lab. Examines the challenges presented by the complex contemporary operating environment (COE). Complementary background knowledge of Army leadership is highly recommended.

2163 Adaptive Tactical Leadership (4) F,S: PreReq.: MILS 2161 and 2162 or equivalent. 4 hrs. lab. Examines the challenges presented by the complex contemporary operating environment (COE). Complementary background knowledge of Army leadership is highly recommended.

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