

BE 4360-Mobile Fluid Power Control

Catalog Data: BE 4360 **Mobile Fluid Power Control F (3)** Prereq: ME 3834 or equivalent. 2 hrs. lecture; 3 hrs. lab. Theory and design of hydraulic systems and basic components; power steering, hydrostatic transmissions, electrohydraulic servovalves, manual and automatic control applications.

Textbook: John S. Cundiff, **Fluid Power Circuits and Controls**, CRC Press, 2002

Reference texts: K. Ogata, **Modern Control Engineering**, Prentice Hall.

Herbert Merritt, **Hydraulic Control Systems**, J. Wiley, 1991

Industrial Hydraulic Technology, 0232-B1, Parker Hannifin, 1997

Design Engineers Handbook, 0224-B1, Parker Hannifin.

Instructor: Dr. M.P. Mailander, Rm. 167 E. B. Doran, Phone 578-1058, 338-0527,

e-mail: aemail@lsu.edu **Office hours:** whenever I am in or by appointment.

Goals: This course is intended to give engineering seniors and graduate students an ability to select fluid power components and subsystems and to integrate them into fluid power control system designs.

Criteria for determining grade:

Homework, quizzes and lab reports	50%
Exams	30%
Design project	20%

Your final course grade will be determined from the following scale:
A = (100 - 90)%, B = (89 - 80)%, C = (79 - 70)%, D = (69 - 60)%, F = (59 - 0)%.

Policies:

Class attendance and participation are expected.

Academic Misconduct, as defined in the Code of Student Conduct, will not be tolerated in this course. Go to <http://appl003.lsu.edu/slas/judicialaffairs.nsf/index> for a copy of the current Code of Student Conduct. This issue is particularly important for engineering students who must be responsible for the safety of the public.

Schedule for the semester

Date 2008	Chapter	Assignment
January 14	1 - Introduction	Do problems 1.1-1.5
January 16	2- Pressure Flow, Power	
January 21	MLK Holiday	
January 23	2 – Fluid Properties	Do problems 2.1-2.5
January 28	4 - Pumps	
January 30	5- Motors	
February 4 & 6	Mardi Gras Holiday	
February 11	7 – Linear actuators	
February 13	3 – Pressure control valves	
February 18	3 - Flow control valves	
February 20	3 – Directional control valves	
February 25	No Class	
February 27	No Class, review in lab	
March 3	EXAM 1	
March 5	8 – Filters	
March 10	8- Temperature control, filters	
March 12	9 – Reservoirs, accumulators	
March 17 & 19	Spring Break Holiday	
March 25	9 – Conductors, seals, etc	
March 27	Troubleshooting	
March 31	6- Hydrostatic transmissions	
April 2	Power steering, brakes etc	
April 7	10- pneumatics	
April 9	EXAM 2	
April 14	11 –Servo valves	
April 16	Laplace transform	
April 21	Control systems analysis	
April 23	12 – Proportional valves	
April 28	Electronics	
April 30	Review	
May 8	FINAL EXAM	3-5 pm