ME 332 FLUID MECHANICS LABORATORY
Spring, 2002

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Textbook
There is no text for the course, but you should consult the book that you used for AME334 Fluid Mechanics.

Meetings
Unless you are informed to the contrary, there will be class on Wednesdays at 08:30–09:20 in DeBartolo 138.

Assistance
Weihua Cai will be in the laboratory twice a week for consultation about the experiments and the procedures. Alejandro Espinosa and Paul S. Nebosky will grade the reports and should be contacted about them. John Koenigshof is responsible for the equipment and should be e-mailed if there is any malfunction. The laboratory staff can be consulted at any time about the experiments. E-mail is encouraged, especially after working hours. Answers to questions of general interest will be e-mailed to all.
Laboratory

The students will do their experimental work in the Fluid Mechanics Laboratory, Room A-59 Fitzpatrick, at any time that is convenient for them, except between the hours of midnight and 6:00 AM. The combination is 1-4-3-5. The laboratory will be unmonitored but, for reasons of safety, there should be at least two persons present for students to carry out their experiments.

Grouping of experiments

There will be equipment for six experiments available at a time but there is no particular order in which they should be done. The experiments are grouped in the following manner.

- Before spring break: Experiments 1–6
- After spring break: Experiments 7–12

Sign-up

At most two students can work together in the laboratory to do the experiments (all work outside the lab should be done separately, though discussions can take place). To avoid conflicts, students should sign up beforehand for a specific experiment. Sign-up sheets are available in the lab. Sign-up can be for at most two hours at a time on any given day, though work can continue if no one else wants to use the equipment. Students should also log in and out of the laboratory, indicating the times they have actually been there and the experiment they have worked on.

Handouts

Handouts are on the course Webpage

http://www.nd.edu/~msen/Teaching/FMLab/

Procedures

The objectives for each experiment are in the course notes. The students should read the appropriate material and decide on operating procedures and calculations to be carried out before coming to the laboratory. In the lab they can take all the data that they need. It is suggested that the students sign up for two laboratory sessions a week on different days, one to familiarize themselves with the equipment and to plan the experiment, and the other to actually take the data. They can come back to the laboratory if any further information is needed. There is no restriction on the time spent in the laboratory. Data should be neatly recorded in a laboratory notebook.

Safety

Safety is an important subject in the education of an engineer, but is especially important here since the students will be on their own in the laboratory. The equipment has been designed with this in mind, with all reasonable effort having being
made in that regard. Students should, however, be conscious of safety at all times: they should think carefully before switching on machinery or electrical equipment, and otherwise comport themselves in a manner that will not endanger themselves or others. Emergency telephones numbers are prominently displayed in the laboratory.

**Maintenance**

Equipment in the laboratory will be maintained in good, working order. However, it is possible that a breakdown occur which may or may not disable an experiment. In either case the student(s) involved should immediately communicate with the laboratory staff; the equipment will be fixed as soon as possible. Other than that, students should clean up their workspace and leave the equipment as they found it.

**Honesty**

The provisions of the *Academic Code of Honor Handbook* will be strictly adhered to. By signing the login sheet the student indicates responsibility for his or her actions in the laboratory. Each report should have a signed *Declaration* at the end (sample provided) in which the student affirms that, though there may have been collaboration with another person in doing the experiment and in taking the data, everything in the report itself is his or her own work. Students can and are encouraged to discuss all aspects of the experiments with others, but do the calculations and writing themselves.

**Reports**

The TAs will grade all reports. Reports are individual and each student should submit one for each one of the experiments. At least one report should be handed in on each one of the following dates:

- After spring break: March 26, April 2, April 9, April 16, April 23, April 30.

**Exams**

There will be two exams in class, one on March 5 on experiments 1–6 and the other on April 30 on 7–12.

**Grading**

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<tr>
<td>Reports</td>
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<td>First exam</td>
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