Hi.

Thanks for signing up for the Flow Visualization course. This email is going out to both enrolled and waitlisted students.

I want to make sure that you understand what the course will be like, and what my expectations are. If this course is not right for you, now is the time to find a different course. I want passionate students who are really interested in this topic, and are open to doing science for non-utilitarian purposes. Please don't take this course just because it fits your schedule, or just because you need an ME tech elect. There is a waitlist for students wanting to get in, so please make room if this course isn't a good fit for you.

This course will be more difficult than usual because of the pandemic. I'm planning a hybrid format: an in-person lecture, with screen-sharing on Zoom. I'll also try to record the lectures for you to watch later, but I can't promise that will work well. The lectures are interactive, and you will be expected to attend at the scheduled time, either in-person or remotely via Zoom. At least, this is the plan. Whether the university will give me a classroom for the in-person lecture is still up in the air. At the moment it looks like we'll be in ECCR 265, MWF 12:40 – 1:30. Even if your schedule says 'meets remotely' you'll have the opportunity to come to in-person class. I'll use a signup sheet to make sure we don't exceed safe capacity.

This course will require a lot of 'lab' time. You'll be designing and setting up your own fluids experiments at home, and there will be no procedures for you to follow. It will be frustrating at times; fluids experiments always are frustrating, and photographing them is harder than you think. Normally I'd put you on a team so you'd have help making your images and vids, but this semester you are likely to have to work alone, unless you have house mates who can help. If you are taking a heavy load of other courses, think twice about this course.

You need to provide your own camera. An appropriate camera will cost between $200 and $300, but you won't have to buy a textbook for the course. Most importantly, the camera must be capable of manual focus, i.e. by hand, not automatic only. It must also be capable of manual exposure, both shutter speed and aperture. If you are not sure your camera is up to spec, Zoom with me and I'll help you check it out. Be sure to download the camera's user guide first. Phone cameras can produce high quality images, but it is very difficult to control the focus, and usually impossible to change the aperture. If you plan to only use automatic settings and/or a phone camera, this is **not** the right course for you.

All students will be expected to complete 6 major assignments: creating images, both oral and written reports for your images and critiques of other students' work. There will also be a handful of smaller

assignments such as short homeworks on optics, surveys and guest lecture attendance. For both grads and undergrads, there will be little emphasis on mathematics, but a lot on physics and imaging. There may also be some content on the history of art, aesthetics, photography and imaging, but this is largely a technical course. The schedule from last year is at http://www.flowvis.org/wp-content/uploads/2019/12/ScheduleFlowVisMWF2019Fall.pdf so you can see what topics we'll cover.

I have high expectations of students signed up for the MCEN graduate section. These students will be expected to perform technical literature research (i.e. find and read reviewed journal articles and texts) on their own for each assignment, and to analyze the physics of their flows based on their readings. Each of your reports must be of publishable quality, with plausible physics and multiple references. You will be in trouble if you tell me part way through the semester, "Oh, I thought I was in the undergrad section!" or "Gee, can't I transfer to the undergrad section?"

Similarly, if you are in the CINE section, I expect you to have experience in photography and/or video. If you are in the ATLS section I expect you to have some hands-on and/or web experience. Everybody in the class will be put into mixed 'pods' for discussions and critiques, and you'll be expected to bring your background skills and knowledge to the table to contribute.

The grading will not be based on a quantitative scale. I'm going to match your performance up against my general expectations for students in each section; grad, undergrad, engineers, TAM and film students. If you need more defined grading procedures, i.e. x points for each assignment, then this course is not for you. In fact, you will get little to no feedback from me on your work outside of the class critique sessions. I will ask you to bring your laptop to class on critique days, and you will be expected to comment constructively on everyone's work live, online in the course website, plus additional in-depth, substantive critiques.

The website for this course is fantastic (imho) and I require you to give me publication rights to your images and reports for the website and for academic purposes (I write articles about the course). All of your work will be published on the Flow Vis website. This is a very high visibility site. Just Google 'flow visualization' and see. This means that your work for this course will become part of your online identity. In future years, your reports and image for this course may come up first when a potential employer Googles your name. If this makes you uncomfortable, do not take this course.

The FlowVis.org website is a WordPress site, and we will be making a user login for you soon, so watch for an email that will let you reset your initial password. You will be posting your public work there, and also submitting archival files through Canvas. You will have to deal with all the fussy details to make your posts work within the site; correct file and post formats, video upload rules, tagging correct categories, and meeting deadlines. It is painful, but required.

On the plus side, this course is a unique and amazing opportunity to see the world around you in a new way, and to contribute to your online professional portfolio. You might even have your work displayed in the Engineering Center hallways someday.

If you have more questions, do check out the website, http://flowvis.org . You'll find past syllabi, lecture notes and galleries of student work. Or feel free to request a Zoom chat with me.