

Physics 5413: Chaos, fractals, and nonlinear dynamics – Spring Semester 2022

- Instructor:** Thomas Vojta
Office: 103 Physics, phone: 341-4793, email: vojtat@mst.edu
- Office hours:** The official office hours are Wednesday 2pm – 3pm, but you can drop in any time, or email me for an appointment.
- Course home page:** http://www.mst.edu/~vojtat/class_5413/class_5413.html
- Class time:** 9:00 – 9:50 am Monday, Wednesday, Friday,
Room 127 Physics
- Prerequisites:** Math 3304; Physics 2135 or Physics 2111
- Recommended texts:** “Chaos and nonlinear dynamics” by Robert C. Hilborn, Oxford University Press, 2000
“Nonlinear dynamics and chaos” by Steven H. Strogatz, Perseus, 1994
- Projects:** The course is project based. In class, we will usually discuss the basic concepts of a particular topic. I will then assign projects which further explore the material, including applications to specific systems, computer simulations and student talks. Some of the projects will be team projects. When working on the projects, discussions among colleagues are allowed and encouraged. However, the reports you hand in should be based on your efforts and not that of a group. For team projects, each team can submit a joint report, but you must explain who did what part of the work. You should document any reference material which you directly use.
- Grade:** Your grade will be based entirely on the projects. There will be seven regular projects worth 100 pts and a final project worth 200 pts. The lowest regular score will be dropped (the final score cannot be dropped). Thus, a total of 800 points can be earned.

The relation between performance and grade will be the standard one: $A \geq 90\% > B \geq 80\% > C \geq 70\%$. The boundaries between the grades may be revised downwards (i.e., to the students benefit) depending upon the judgement of the instructor, but will not be revised upwards.
- Accessibility and Accommodations:** It is the university’s goal that learning experiences be as accessible as possible. If you anticipate or experience physical or academic barriers based on disability, please contact Student Disability Services at (573) 341-6655, sdsmst@mst.edu, visit <http://dss.mst.edu/> for information, or go to mineraccess.mst.edu to initiate the accommodation process.
- Academic Dishonesty:** You should behave as responsible scholars and scientists. Academic dishonesty such as plagiarism, cheating, or sabotage is unethical and unacceptable and will be dealt with accordingly. For more detail, see the Student Academic Regulations which are available on the web at <http://registrar.mst.edu/academicregs/index.html>.

- Title IX:** The title IX policies, resources and reporting options are available online at <http://titleix.mst.edu>.
- Emergency exits:** Please familiarize yourself with the classroom emergency exits shown on the egress maps posted on-line at: <http://designconstruction.mst.edu/floorplan/>.
- Complaints:** It is hoped that any problems can be resolved through discussions between student and instructor. If there are any complaints that cannot be resolved you may contact Dr. Shannon Fogg, Associate Dean for Academic Affairs (sfogg@mst.edu).