

Department of Space Science Comprehensive Exam

The Department of Space Science holds a day-long “comprehensive” written exam on the subjects of Plasma Physics, Electromagnetic Theory, and Thermal and Statistical Physics between the end of the Spring and start of the Summer semesters each year (typically mid-May). All students in the PhD and non-thesis MS programs must take this exam as soon as they have successfully completed all three corresponding courses:

- SPA 522 INTRODUCTION TO PLASMA PHYSICS
- SPA 622 CLASSICAL & QUANTUM STATISTICS
- SPA 631 WAVES AND FIELDS

The exam will be divided into three sections according to the subject areas above. Questions will be motivated by the topics covered in the corresponding courses. The exam will run from 9am to 5pm, and students may bring snacks and drinks. All phones and smart watches must be turned off for the duration of the exam. Only one student at a time may leave for a bathroom break.

Math tables (e.g. Schaum’s outlines Mathematical Handbook of Formulas and Tables) are permitted, along with non-programmable scientific calculators. All pages must have your UAH “A-number” at the top. Do not write your name or any other identifiable markings on your papers, as we want the graders to not be influenced by knowing whose paper they are looking at.

To continue in the PhD program, students must pass at the PhD level, defined to be an average score of 60% or above, with a minimum of 40% in each section. If a student fails to reach the 40% threshold for any section or sections, they can have a second attempt at answering those sections the following year. Sections with a score between 40% and 60% may also need to be repeated to raise the average score. No third attempts will be granted.

Students in the non-thesis MS program must pass at the MS level, defined to be an average score of 40% or above, with a minimum of 20% in each section. If a student fails to reach the 20% threshold for any section or sections, they can have a second attempt at answering those sections the following year. No third attempts will be granted.

A student who fails to reach the PhD level pass on their second attempt will not be able to continue in the PhD program. If such a student passed at the MS level, then they can transfer to the non-thesis MS program. Students who fail to pass at the MS level on their second attempt cannot complete the non-thesis MS program, and may transfer to the thesis option MS program. Irrespective of the program the student is enrolled in, the Space Science Comprehensive Exam may be taken a maximum of two times.

Copies of exam questions from previous years are available upon request from the Space Science Department.