

**Massachusetts Institute of Technology
Department of Aeronautics and Astronautics**

APPLICATION FOR ADMISSION TO THE DOCTORAL FIELD EXAM/RESEARCH EVALUATION

**Field Exam & Research Evaluation – Tuesday, January 26, 2010, 8:30am to 6pm, Rooms TBA
(Depending on the distribution of students taking the exams, an additional date of Monday, January
25, 2010 may be needed. If needed, this date will be announced by December 1, 2009.)**

Name: _____

E-mail: _____

Phone: _____

Current GPA: _____

MIT Research Advisor: _____

Select one field and, if applicable, indicate the elective content you have selected for field exam:

_____ **Aerospace computational engineering.** Core plus two from:

- A. _____ Fluid mechanics
- B. _____ Mechanics of solid materials
- C. _____ Numerical linear algebra
- D. _____ Optimization methods

_____ **Air-breathing propulsion.** Core plus one from:

- A. _____ Compressible flow
- B. _____ Internal flow in turbomachines

_____ **Aircraft systems engineering.** Core plus two from:

- A. _____ Aerodynamics
- B. _____ Aircraft instrumentation
- C. _____ Aircraft propulsion
- D. _____ Aircraft stability and control
- E. _____ Aircraft structures
- F. _____ Human factors
- G. _____ Software systems

_____ **Air transportation systems.** Core plus one from:

- A. _____ Air traffic control
- B. _____ Airline management
- C. _____ Airport systems

_____ **Autonomous systems.** Core including one from:

Core Option 1: _____ Dynamics programming
Core Option 2: _____ Stochastic estimation and control
Plus one elective from:

- A. _____ Algorithms for estimation and inference
- B. _____ Cognitive robotics
- C. _____ Distributed algorithms
- D. _____ Human factors engineering
- E. _____ Machine learning
- F. _____ Machine vision
- G. _____ Software engineering
- H. _____ Theory of computation

_____ **Communications and networking.** Select three from:

- A. _____ Applied probability
- B. _____ Data networks
- C. _____ Principles of digital communication
- D. _____ Principles of wide bandwidth communication
- E. _____ Statistics for engineers and scientists

_____ **Controls.** No elective content.

_____ **Humans in aerospace.** Core plus one from:

- A. _____ Aerospace biomedical engineering
- B. _____ Humans and automation

_____ **Materials and structures.** No elective content.

_____ **Space propulsion.** No elective content.

_____ **Space systems.** Core plus one from:

- A. _____ Space policy
- B. _____ Space system architecture and design
- C. _____ Space system engineering
- D. _____ System safety

FORM CONTINUES ON THE REVERSE SIDE

Tentative title of research presentation: _____

Note: a final title and abstract (300 word limit) are due to Barbara Lechner, Room 33-208, no later than Tuesday, December 1, 2009.

Signature of Student

Date

Faculty endorsement: I endorse the above student's application for admission to the Department of Aeronautics and Astronautics Doctoral Field Examination and Research Evaluation.

I will submit the separate recommendation form (e-mail or hard copy) to Barbara Lechner no later than Tuesday, December 1, 2009.

I will make a presentation of the candidate's academic achievements at the faculty review following the examinations, as an advocate of the candidate, and will communicate the decision of the faculty to the candidate following the evaluation meeting.

Signature of Faculty Member

Date

Please complete and return to Barbara Lechner, Room 33-208, no later than Monday, November 2, 2009