Table I – Approved Courses for the Graduate Certificate in Plasma Science and Engineering

Rubric	Course Title	Funda-mental	Techno logy	Lab	Support ing
Aerospace Engineering					
AEROSP 523	Computational Fluid Dynamics				X
AEROSP 532	Molecular Gas Dynamics				X
AEROSP 533 (ENSCEN 533)	Combustion Processes				X
AEROSP 536	Electric Propulsion		X		
Astronomy					
Astronomy 160	Introduction to Astrophysics				X (See Note 1)
Astronomy 530	Stellar Astrophysics				X
Climate and Space Sciences					
SPACE 101	Rocket Science				X (See Note 1)
SPACE 370 (EARTH 370)	Solar Terrestrial Relations	X (See Note 1)			
CLIMATE 450 (SPACE 450)	Geophysical Electromagnetics	X			
SPACE 477	Space Weather Modeling	X			
CLIMATE 479 (ENSCEN 533)	Atmospheric Chemistry				X
SPACE 495 (ENSCEN 495)	Upper Atmosphere and Ionosphere				
SPACE 545	High Energy Density Physics	X	X		
SPACE 564 (CLIMATE 564)	Stratosphere and Mesosphere				X
SPACE 565 (CLIMATE 565)	Planetary Science				X
CLIMATE 567	Chemical Kinetics				X
SPACE 571	Space Plasma Measurement Techniques		X	X	
CLIMATE 574 (AEROSP 574)	Introduction to Space Physics	X	X		
SPACE 595 (EECS 518)	Magnetosphere and Solar Wind	X			
SPACE 597 (AEROSP 597)	Fundamentals of Space Plasma Physics	X			
SPACE 598	Sun and Heliosphere	X			
Electrical Engr. & Computer Science					
EECS 423	Solid-State Device Laboratory		X	X	
EECS 425	Integrated Microsystems		X	X	

	Laboratory				
EECS 430 (SPACE 431)	Radiowave Propagation and Link Design				X
EECS 503	Introduction to Numerical Electromagnetics				X
EECS 517 (NERS 578)	Physical Processes in Plasmas	X	X		
EECS 530 (APPPHYS 530)	Electromagnetic Theory I				X
EECS 539 (APPPHYS 551) (PHYSICS 651)	Lasers				X
EECS 528	Principles of Microelectronics Process Technology		X		
EECS 587	Parallel Computing				X
EECS 598	Laser Plasma Diagnostics	X			
EECS 598	Plasma Chemistry and Plasma Surface Interactions	X			
EECS 633	Numerical Methods in Electromagnetics				X
Mechanical Engineering					
ME 523	Computational Fluid Mechanics				X
ME 586	Laser Materials Processing		X		
Mathematics					
MATH 571	Numerical Linear Algebra				X
MATH 572	Numerical Methods for Differential Equations				X
Materials Science and Engineering					
MSE 489	Materials Processing Design			X	X
Nuclear Engineering & Radiological Sciences.					
NERS 425	Application of Radiation		X		
NERS 471	Introduction to Plasmas	X			
NERS 472	Fusion Reactor Technology		X		
NERS 571	Intermediate Plasma Physics I	X			
NERS 572 (APPPHY 672)	Intermediate Plasma Physics II	X			
NERS 573	Plasma Engineering	X	X		
NERS 574	Introduction to Computational Plasma Physics	X			
NERS 575 (EECS 519)	Plasma Generation and Diagnostics Laboratory		X	X	
NERS 576	Charged Particle Accelerators and Beams	X	X		
NERS 577	Plasma Spectroscopy	X			
NERS 578 (EECS 517)	Physical Processes in Plasmas	X	X		
NERS 671	Theory of Plasma Confinement in Fusion Systems I	X			
NERS 672	Theory of Plasma Confinement in	X			

	Fusion Systems II				
NERS 673	Electrons and Coherent Radiation	X			
NERS 674 (APPPHY 674)	High Intensity Laser-Plasma Interactions	X			
Physics					
PHY 405	Intermediate Electricity and Magnetism				X
PHY 406	Statistical and Thermal Physics				X
PHY 505	Electricity and Magnetism I				X
PHY 506	Electricity and Magnetism II				X
PHY 510	Statistical Physics I				X

Notes: 1.This course is of general interest for plasmas but does not count towards the 14 credits required for the GPSE.