Physics
UNIVERSITY OF COLORADO **BOULDER**

Applied Physics Application:
High Energy and Nuclear Physics

Student name:_____ Year of Grad Program Entry:_____
Date:_____
Please indicate all of your planned courses for this track:

1) Comps 1 Required Courses (12 credits):
   - ☐ PHYS 5250 - Quantum Mechanics 1
   - ☐ PHYS 5260 - Quantum Mechanics 2
   - ☐ PHYS 7310 - Electromagnetic Theory 1

   One more from this list *(More can be taken as electives.)*
   - ☐ PHYS 5210 - Theoretical Mechanics
   - ☐ PHYS 7320 - Electromagnetic Theory 2
   - ☐ PHYS 7230 - Statistical Mechanics
   - ☐ PHYS 7270 - Quantum Mechanics 3

2) Other Required Courses (3 credits):
   One from this list *(More can be taken as electives.)*
   - ☐ PHYS 5730 - Particle Physics
   - ☐ PHYS 7270 - Quantum Mechanics 3 (if not used as a Comps 1 course)
   - ☐ PHYS 7280 - Advanced Quantum Theory
   - ☐ PHYS 7730 - Theory of Elementary Particles

3) Elective courses to bring total to 30 credits: *Note 18/30 of your credit hours must be in PHYS courses and at least 6/30 must be outside of PHYS. 3 credit hours can be outside of this list.*
   - ☐ Any courses in the above lists List here:_____
   - ☐ APPM 5510 / STAT 5250 - Data Assim. in High Dimensional Dynamical Systems
   - ☐ APPM 5560 / STAT 5100 - Markov Processes, Queues, and MC Sim
   - ☐ APPM 5600 - Numerical Analysis 1
   - ☐ APPM 6640 - Multigrid Methods
   - ☐ ASTR 5770 - Cosmology
   - ☐ CSCI 5254 - Convex Optimization
   - ☐ CSCI 5622 - Machine Learning
   - ☐ CSCI 5502 - Data Mining
   - ☐ CSCI 5576 - High-Perf. Scientific Computing
   - ☐ CSCI 5606 - Principles of Numerical Computation
   - ☐ CSCI 5676 - Numerical Optimization
   - ☐ CSCI 5922 - Neural Networks and Deep Learning
   - ☐ CSCI 6502 - Big Data Analytics: Systems, Algorithms, and Applications
   - ☐ CSCI 6622 - Advanced Machine Learning
   - ☐ ECEN 5224 - High Speed Digital Design
   - ☐ ECEN 5355 - Prin. of Electronic Devices 1
   - ☐ ECEN 5414 - Essen. Prin. of Signal Integrity
   - ☐ ECEN 5424 - High Speed Channel Design for Signal Integrity
   - ☐ ECEN 5434 - S-Parameters for Signal Integrity in High Speed Digital Engineering
   - ☐ ECEN 5458 - Sampled Data and Digital Control Systems
   - ☐ ECEN 5478 - Online Convex Optimization and Learning
   - ☐ ECEN 5514 - Principles of Electromagnetics for High-Speed Digital Engineering
   - ☐ ECEN 5532 - Digital Signal Processing Lab
   - ☐ ECEN 5613 - Embedded System Design
   - ☐ ECEN 5622 - Information Theory and Coding
   - ☐ ECEN 5623 - Real-Time Embedded Systems
   - ☐ ECEN 5652 - Detection and Extraction of Signals from Noise
   - ☐ ECEN 5720 - Practical Printed Circuit Board Design Accelerator
   - ☐ ECEN 5813 - Principles of Embedded Software
   - ☐ PHYS 5070 - Computational Physics
   - ☐ PHYS 5150 - Introductory Plasma Physics
   - ☐ PHYS 5770 - Gravitational Theory
   - ☐ PHYS 6260 - Geometry of Quantum Fields and Strings (same as MATH 6260)
   - ☐ PHYS 7160 - Intermediate Plasma Physics
   - ☐ STAT 5000 - Stat. Methods and App. I
   - ☐ STAT 5010 - Stat. Methods and App. II
   - ☐ STAT 5310 - Stat. Modeling for Data Science
   - ☐ STAT 5530 - Mathematical Statistics
   - ☐ STAT 5610 - Statistical Learning
   - ☐ STAT 5630 - Computational Bayesian Statistics
   - ☐ 3 credit hours can be outside of this list. List here:_____

Any changes to the above requirements are to be approved by the Track Coordinator and Physics Assoc. Chair for Graduate Studies on the next page.

Are there any exceptions to the track requirements? ☐ Yes ☐ No

Exceptions to the track requirements:

Signatures are **only** required if exceptions are listed above.

Track Coordinator Name: _____

Signature_____ Date: _____

Grad Chair Name: _____

Signature_____ Date: _____

Please submit the completed form to the **Graduate Program Assistant**.