Physics
UNIVERSITY OF COLORADO **BOULDER**

Applied Physics Application:
Quantum Information Science

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 7230 - Statistical Mechanics
   - ☐ PHYS 7320 - Electromagnetic Theory 2

2) Other Required Courses (6 credits):
   - ☐ PHYS 7570 - Quantum Information and Computing

   One more from this list *(More can be taken as electives.)*
   - ☐ PHYS 7250 - Quantum Many Body Theory
   - ☐ PHYS 7270 - Quantum Mechanics 3 (QFT 1)
   - ☐ PHYS 7280 - Advanced Quantum Theory (QFT 2)
   - ☐ PHYS 7550 - Atomic and Molecular Spectra
   - ☐ PHYS 7560 - Quantum Optics

3) Elective courses to bring total to 30 credits: *Note 18/30 of your credit hours must be in PHYS courses. 3 credit hours can be outside of this list.*
   - ☐ Any courses in the above lists List here:_____
   - ☐ CSCI 5254 - Convex Optimization and Its Applications
   - ☐ CSCI 5266 - Machine Learning
   - ☐ CSCI 5922 - Neural Networks and Deep Learning
   - ☐ CSCI 6622 - Advanced Machine Learning
   - ☐ ECEN 5005 - Optical and Quantum Metrology
   - ☐ ECEN 5156 - Physical Optics
   - ☐ ECEN 5166 - Guided Wave Optics
   - ☐ ECEN 5616 - Optoelectronic System Design
   - ☐ ECEN 5622 - Information Theory and Coding
   - ☐ ECEN 5626 - Active Optical Devices
   - ☐ ECEN 5634 - Microwave Lab
   - ☐ ECEN 5645 - Introduction to Optical Electronics
   - ☐ ECEN 5696 - Fourier Optics
   - ☐ ECEN 6006 - Numerical Methods in Photonics
   - ☐ MATH 5440 - Mathematics of Coding and Cryptography
   - ☐ PHYS 5030 - Math Methods 1
   - ☐ PHYS 5040 - Math Methods 2
   - ☐ PHYS 5070 - Computational Physics
   - ☐ PHYS 5160 - Fundamentals of Optics and Lasers
   - ☐ PHYS 5730 - Particle Physics
   - ☐ PHYS 5770 - Gravitational Theory
   - ☐ PHYS 7240 - Advanced Statistical Mechanics
   - ☐ PHYS 7440 - Theory of Solid State 1
   - ☐ PHYS 7450 - Theory of Solid State 2
   - ☐ PHYS 7650 - Nonlinear and Nano-Optics
   - ☐ PHYS 7660 - Ultrafast Optics
   - ☐ STAT 5530 - Mathematical Statistics
   - ☐ STAT 5610 - Statistical Learning

   - ☐ 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 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**.