课程代码（Coursenumber）：
C191.

课程名（Coursename）：
Quantum Information Science and Technology.

学分（credit) ：(3)

课程设置（course setting）：Three hours of lecture and one hour of discussion per week.

选课要求（prerequisite）：Math 54; Physics 7A; Physics 7B; and either Physics 7C, Math 55, or Computer Science 170 are required.

课程描述（Description）： This multidisciplinary course provides an introduction to fundamental conceptual aspects of quantum mechanics from a computational and informational theoretic perspective, as well as physical implementations and technological applications of quantum information science. Basic sections of quantum algorithms, complexity, and cryptography will be touched upon, as well as pertinent physical realizations from nanoscale science and engineering. Also listed as Computer Science C191 and Physics C191. (F)

教参信息（Textbookinfo）:
1 Quantum Communication and Information Technologies (NATO Science Series II: Mathematics, Physics and Chemistry) by Alexander S. Shumovsky and Valery I. Rupasov (Hardcover - Dec. 31, 2003)
ISBN-13: 978-1402014529
世界各地拥有馆藏的图书馆（OCLC）:78
2 Entanglement, Information, and the Interpretation of Quantum Mechanics (The Frontiers Collection) by Gregg Jaeger (Hardcover - Sept. 18, 2009)
ISBN-13: 978-3540921271
世界各地拥有馆藏的图书馆（OCLC）:80
3 Theory of Quantum Computation, Communication and Cryptography: 4th Workshop, TQC 2009, Waterloo, Canada, May 11-13. Revised Selected Papers (Lecture Notes ... Computer Science and General Issues) by Andrew Childs and Michele Mosca (Paperback - Jan. 22, 2010)
ISBN-13: 978-3642106972
世界各地拥有馆藏的图书馆（OCLC）:23
4 Quantum Computing, Revised and Enlarged: A Short Course from Theory to Experiment (Physics Textbook) by Joachim Stolze and Dieter Suter (Paperback - Mar. 21, 2008)
ISBN-13: 978-3527407873
世界各地拥有馆藏的图书馆（OCLC）:100
5 The LLL Algorithm: Survey and Applications (Information Security and Cryptography) by Phong Q. Nguyen and Brigitte Vallée (Hardcover - Dec. 2, 2009)
ISBN-13: 978-3642022944
世界各地拥有馆藏的图书馆（OCLC）:17
6 Introduction to Quantum Information Science (Oxford Graduate Texts) by Vlatko Vedral (Hardcover - Apr. 5, 2007)
ISBN-13: 978-0199215706
世界各地拥有馆藏的图书馆（OCLC）:190
7 Entanglement and Decoherence: Foundations and Modern Trends (Lecture Notes in Physics) by Andreas Buchleitner, Carlos Viviescas, and Markus Tiersch (Hardcover - Oct. 23, 2008)
ISBN-13: 978-3540881681
世界各地拥有馆藏的图书馆（OCLC）:74
8 Quantum Computer Science: An Introduction by N. David Mermin (Hardcover - Sept. 17, 2007)
ISBN-13: 978-0521876582
世界各地拥有馆藏的图书馆（OCLC）:488
9 Solid-State Quantum Computing: Proceedings of the 2nd International Workshop on Solid-State Quantum Computing & Mini-School on Quantum Information Science (AIP Conference Proceedings) by Hsi-Sheng Goan and Yueh-Nan Chen (Hardcover - Dec. 4, 2008)
ISBN-13: 978-0735406056
世界各地拥有馆藏的图书馆（OCLC）:38
10 Introduction to Quantum Information Processing (QIP) (Micro & Nano Technologies) by Tim Spiller and Bill Munro (Hardcover - July 15, 2010)
ISBN-13: 978-0815515753
世界各地拥有馆藏的图书馆（OCLC）:4