**Master of Arts in Science Education High School (grades 9-12) Program Checklist**

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| **Check one of following programs of study: Comprehensive Science Education****Biology Education** |  |
| **Required Professional Studies Core (15 hours)**\_\_\_\_\_EDN 5440 Survey of Educational Research (3) **(can substitute with approval for another research course but should be taken before SCE5700)**\_\_\_\_\_EDN 5660 Advanced Educational Research (3) **(should be taken before SCE 5700)**\_\_\_\_\_SCE 5600 Foundations of Science Education (3)\_\_\_\_\_SCE 5700 Improving 9-12 Science Classroom Instruction (3) **(capstone course taken the semester before grad.)**\_\_\_\_\_SCE 5800 Contemporary Issues in Science Education (3) (online) | 15 |
| **Academic Specialization: Choose 12 credits in 1 area of concentration from the following courses. (12 hours)** **Choose 3 additional courses outside of concentration area (9 hours)*****\*Note: Biology Education students may choose 15-18 hours in Biology. Community College concentration is 18 graduate credits in ONE area of science.*****Biology** \_\_\_\_\_ BIO 5100 Marine Biology (3) (course fee – travel to Bermuda) \_\_\_\_\_BIO 5120 Topics in Ecology and Environmental Biology (3)\_\_\_\_\_BIO 5150 Advanced Microbiology (3)\_\_\_\_\_ BIO 5140 Biogeography (3) \_\_\_\_\_BIO 5200 Current Trends in Molecular and Cell Biology (3)\_\_\_\_\_BIO 5250 Evolutionary Botany (3)\_\_\_\_\_BIO 5350 Evolutionary Zoology (3)\_\_\_\_\_ BIO 5280 Teaching Practicum in Biology (3) \_\_\_\_\_ BIO 5400 The Natural History of Costa Rica (3) (course fee – international travel)\_\_\_\_\_BIO 5550 Independent Biology Research (3)\_\_\_\_\_ BIO 5770 Science in the Natural Environment (3) (course fee – travel to coast)\_\_\_\_\_ BTEC 5300 Medical Biotechnology (3)\_\_\_\_\_ BIOS XXXX Medical Entomology (3) \_\_\_\_\_ BIOS XXXX Advanced Modern Biology (3)\_\_\_\_\_ BIOS XXXX Genomics and Bioinformatics (3)\_\_\_\_\_ BIOS XXXX Field Ornithology (3)\_\_\_\_\_ BIOS XXXX Advanced Comparative Anatomy and Physiology (3)\_\_\_\_\_ BIOS XXXX Principles of Neurobiology (3)**Chemistry**\_\_\_\_\_CHM 5200 Current Trends in Chemistry (3)\_\_\_\_\_CHM 5420 Environmental Chemistry (3) (Hybrid) \_\_\_\_\_CHM 5480 Historical Perspectives of Chemistry (3) \_\_\_\_\_CHM 5500 Spectroscopic Methods of Structure Determination (3)\_\_\_\_\_CHM 5600 Instruments for Chemical Analysis (3)\_\_\_\_\_CHMS XXXX Forensic Chemistry (3) (Online)\_\_\_\_\_ CHMS XXXX Atmospheric Chemistry & Climate Change (3) (Hybrid)**Earth Science**\_\_\_\_\_GLY 5010 Essentials of Earth Science (3)\_\_\_\_\_GLY 5020 Essentials of Earth History (3)\_\_\_\_\_ GLY 5030 Geology of North Carolina (3)\_\_\_\_\_GLY 5410 Meteorology and Climatology (3) \_\_\_\_\_ GLYS 5160 Essentials of Oceanography (3) \_\_\_\_\_GLYS 5010 Geology Fieldtrip (3) \_\_\_\_\_ GLYS 5060 Isotope Geochemistry (3)\_\_\_\_\_ GLYS 5090 Quaternary Climate Change (3)\_\_\_\_\_ GLYS 5130 Environment & Culture (3)\_\_\_\_\_ GLYS 5140 Remote Sensing (3)\_\_\_\_\_ GLYS 5150 Local Geologic Research (3)**Physics**\_\_\_\_\_PHS 5000 The Art & Science of Chemistry & Physics (3) (online)\_\_\_\_\_PHY 5200 Current Trends in Physics (3)\_\_\_\_\_PHY 5480 Historical Perspectives of Physics (3)\_\_\_\_\_PHY 5500 Classical Mechanics (3)\_\_\_\_\_PHY 5600 Modern Physics (3) PHYS XXXX Instrumentation in Physics (3) \_\_\_\_\_ PHYS XXXX Astronomy (3) | **21** |
| **Capstone Experience**Researched unit and lesson plan (SCE 5800), Individual Action Research (SCE 5700), 3 written comprehensive exam questions, Taskstream e-Portfolio and Comprehensive Exit Oral Interview |  |
| **TOTAL** | **36-39** |