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

Check one of following programs of study: Comprehensive Science Education Biology Education

### Required Professional Studies Core (15 hours)
- EDN 5660 Survey of Educational Research (3) *(should be taken before SCE5700)*
- EDN xxx Another Research Course – approval from Graduate SCE Director required (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)*

### Academic Specialization: Choose 12 credits in 1 area of concentration from the following courses. (12 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)
- 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 Comparative Vertebrate Anatomy (3)
- BIOS XXXX Molecular Biology (3) – OTHER BIOS courses as offered.

#### 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) – Other CHMS courses as offered.*

#### 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) – Other GLYS courses as offered.

#### 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)

### Capstone Experience

TASKSTREAM advanced documents and dispositions REQUIRED. TASKSTREAM should be purchased UPON ENTERING the program. 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