

**BACHELOR OF SCIENCE (BS) IN MIDDLE GRADES EDUCATION  
WITH CONCENTRATIONS IN MATHEMATICS AND SCIENCE**

Major Codes: 470 C, D (Teaching)  
2014-2015

Department of Curriculum and Instruction  
Reich College of Education

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**I. General Education Requirements**

44 SH

**SPECIAL NOTE:** Middle Grades Education majors should refer to page 3 of this Program of Study for important information for recommended General Education courses that can be taken and count in the major. Courses identified for Middle Grades Education majors on page 3 also meet the requirements for General Education. Students should contact their advisor or the Middle Grades Coordinator (identified above) for questions relating to General Education recommendations and requirements.

**II. Professional Education Requirements All courses must be completed with "C" (2.0) or better.**

24 SH

- C I 2300 Teaching and Learning in the Digital Age (2) *Entry course to teacher education. Required prior to admission to teacher education.*  
FDN 2400 Critical Perspectives on Teaching and Learning (2) *Required prior to admission to teacher education. Prerequisite or Co-requisite: CI 2300.*  
PSY 3010 Psychology Applied to Teaching (3) *May be taken prior to or after admission to teacher education. Prerequisite or Co-requisite: C I 2300.*  
SPE 3300 Creating Inclusive Learning Communities (3) *Admission to teacher education required. Prerequisites: CI 2300, FDN 2400, PSY 3010.*  
C I 3400 Policies and Practices in Educational Assessment (2) *Admission to teacher education required. Prerequisites: CI 2300, FDN 2400, PSY 3010.*  
C I 4900 Student Teaching (12) (Graded on S/U basis) **(CAP)** *All courses in professional education core must be completed with grades of C (2.0) or better prior to student teaching, along with other courses (including methods and reading) identified within the major to be completed prior to student teaching and/or requiring C (2.0) or better.*

Praxis Exams:

PRAXIS I Pre-Professional Skills Tests: \*CBT Reading \_\_\_\_\_ \*CBT Writing \_\_\_\_\_ \*PPST/CBT Mathematics \_\_\_\_\_  
PRAXIS II: Subject Tests: Middle school Mathematics \_\_\_\_\_ **OR** Middle School Science \_\_\_\_\_

**III. Major Requirements:**

69 SH  
(-12 Gen Ed)

- A. Middle Grades Academic Concentrations: Mathematics, Science  
(See listing of required courses on page 2 of this POS and meet with advisor.)

MATHEMATICS CONCENTRATION

SCIENCE CONCENTRATION


- B. The following courses must be taken using the cohort model. Please note that all cohort internships and student teaching can be done only in schools that have been identified by ASU as professional development schools. (See following page for additional information)

**Block I (Second Semester Junior year. Please note that this block is offered only during the SPRING SEMESTER.)**

- \*\* #+ CI 3900 Middle Grades Internship (3) (WID)
  - \*\* #+ CI 3910 Middle Level Education (3)
  - \*\*# + CI 3920 Teaching Young Adolescents (3)
- Courses from academic concentrations

**Block II (First Semester Senior Year. Please note that this block is offered only in the FALL TERM.)**

- \*\* #+ CI 4490 Middle Grades Curriculum, Instruction, and Assessment (4)
- \*\* #+ RE 4630 Reading in the Content Area (2)
- \*\* #+ CI/RE 4300 Literacy, Language, and Culture in the Middle Grades (3)
- \*\* #+ CI 4040 Mathematics in the Middle Grades (3)
- \*\* #+ GS 4403 Teaching Science in the Middle and High Schools (3)

#Cannot be taken before being admitted to Teacher Education

\*Should be taken before junior year (Pre-requisite to enter Teacher Education)

+Must have "C" (2.0) or higher for COE

\*\*Must be taken before student teaching

- C. **CI 4450 Portfolio/Exhibition** (1) is to be taken during the student teaching semester.

**IV. Second Academic Concentration** Second academic concentration requirements are met upon successful completion of middle grades content concentrations.

**V. Electives**

3 SH

**TOTAL**

128 SH

## MIDDLE GRADES CONCENTRATIONS

### **MATHEMATICS CONCENTRATION (24 SH)**

MAT 1110 Calculus with Analytic Geometry I (4) (**Gen Ed: Quantitative Literacy**) (Prerequisite: MAT 1025, with a grade of "C-" or higher, or equivalent)

MAT 3910 Introduction to the Logic and Structure of Mathematics I (4) (Prerequisite: junior or senior standing or permission of the instructor)

MAT 3920 Introduction to the Logic and Structure of Mathematics II (4) (Prerequisite: MAT 3910 or permission of instructor)

CI 4040 Mathematics in the Middle Grades (3) (**Block Two, Fall only**)(Prerequisite: senior standing in mathematics or permission of the instructor)

Select at least one of the following courses:

STT 2810 Introduction to Data Analysis and Statistical Inference (3) (Prerequisite: MAT 1010 or equivalent)

MAT 4930 Basic Concepts of Probability and Statistics (3)

Select at least one of the following courses:

MAT 3610 Introduction to Geometry (3) (Prerequisites: MAT 1120 and MAT 2110)

MAT 4910 Informal Geometry (3) (Prerequisite: MAT 3910 or MAT 3920 or permission of the instructor)

Additional courses may be selected from the following list. Courses not listed may be taken with permission from your advisor.

MAT 1120 Calculus with Analytic Geometry II (4) (Prerequisite: MAT 1110 (with a grade of "C-" or higher)

MAT 2240 Introduction to Linear Algebra (3) (Prerequisite: MAT 1120 or permission of the instructor)

MAT 3010 History of Mathematics (2)

MAT 3110 Introduction to Modern Algebra (3)(Prerequisites: MAT 2110 and MAT 2240 or permission of instructor and ENG 2001 or its equivalent

MAT 3520 Instructional Assistance (1)

### **SCIENCE CONCENTRATION (26 SH)**

The Science Inquiry Perspective requires 8 semester hours from one theme (underlined). Courses in themes marked with an \* must be taken sequentially. Check the course descriptions for any pre and co-requisites.

**Eight semester hours ( 8 SH) from one of the General Education Science Inquiry perspectives listed below:**

Biology and Society: \_\_\_\_BIO 1201, \_\_\_\_BIO 1202, \_\_\_\_BIO 1203

The Blue Planet: \_\_\_\_GLY 1104, \_\_\_\_GLY 1105

\* Chemistry Connections to Our Changing World: \_\_CHE 1101/ CHE 1110 \_\_\_\_, \_\_\_\_CHE 1102/ CHE 1120 \_\_\_\_

\*How Things Work: \_\_\_\_PHY 1101, \_PHY 1102

\*The Physics of Our Technological World: \_\_\_\_PHY 1103, \_\_\_\_PHY 1104

\*Physics of Self Expression: \_\_\_\_PHY 1101, \_\_\_\_PHY 1810, \_\_\_\_PHY 1812, \_\_\_\_PHY 1814

\*Physics with Calculus: \_\_PHY 1150, \_\_\_\_PHY 1151

Restless Planet: Earth, Environment and Evolution: \_\_\_\_GLY 1101, \_\_\_\_GLY 1102, \_\_\_\_GLY 1103

Required: One four hour (4 SH) science course from each of the remaining three sciences for a total of 12 sh:

Biology

Chemistry

Geology

Physics

GS 3300 Educational Applications of Science Concepts (3) (Prerequisites: MAT 1010 or higher and at least sophomore standing.)

GS 4403 Teaching Science in the Middle and High Schools (3) (**Block Two, Fall only**)

**SPECIAL NOTE:** Middle Grades Education majors should follow this General Education Checklist adapted by Middle Grades faculty with some designated courses for students taking Mathematics and Social Studies concentrations (see courses required for concentrations on page 2 of this Program of Study). Up to 12 SH can be double-counted for the major as identified on page 2. Students should contact their advisor or the Middle Grades Coordinator (identified on page 1) for questions relating to General Education recommendations and requirements.

**FIRST YEAR SEMINAR (required)**

\_\_\_ UCO 1200 or HON 1515 or WGC 1103 (3 s.h.)  
or \_\_\_ UCO MET\* (0 s.h.)

\*applies to students who transfer at least 30 s.h. AND are at least one year out of high school. Students using this option will have 41 s.h. of General Education.

**WRITING ACROSS THE CURRICULUM (6 s.h. required)**

\_\_\_ ENG 1000 or LLC 1000 or WGC 1103  
\_\_\_ ENG 2001 or WGC 2001

**MAJOR REQUIREMENTS**

\_\_\_ Junior Writing in the Discipline\*\*  
\_\_\_ Senior Capstone Experience \*\*

(\*\*These hours count in the major requirements, not the 44 hours of General Education requirements.)

**QUANTITATIVE LITERACY (4 s.h. required)**

\_\_\_ MAT 1010 \_\_\_ MAT 1030 \_\_\_ C S 1445 \_\_\_ STT 2810\*\*\*  
\_\_\_ MAT 1020 \_\_\_ MAT 1110 \_\_\_ ECO 2100\*\*\* \_\_\_ STT 3820\*\*\*  
\_\_\_ MAT 1025 \_\_\_ STT 2820 \_\_\_ STT 1810\*\*\*

(\*\*\*These courses are 3 s.h. courses and do NOT fulfill the Quantitative Literacy requirement on their own. All other courses listed above are 4 s.h. courses and will fulfill the Quantitative Literacy requirement by themselves.)

**WELLNESS LITERACY (2 s.h. required)- Choose from the following:**

1 s.h. courses: \_\_\_ P E 1530-1545, P E 1700-1877  
2 s.h. courses: \_\_\_ H P 1105 \_\_\_ HED 1000 \_\_\_ DAN 1400 \_\_\_ DAN 1400  
\_\_\_ DAN 1420 \_\_\_ DAN 2400 \_\_\_ DAN 2410 \_\_\_ DAN 2420  
\_\_\_ DAN 3280 \_\_\_ DAN 3480 \_\_\_ DAN 3580 \_\_\_ MSL 1101  
3 s.h. courses (additional hour counts as elective): \_\_\_ DAN 4460 \_\_\_ NUT 2202  
\_\_\_ P E 1718 \_\_\_ P E 1768 \_\_\_ P E 1769 \_\_\_ P E 3008

**DESIGNATIONS in Perspectives (3 s.h. of each required):** \_\_\_ Fine Arts (FA), \_\_\_ Historical Studies (HS), \_\_\_ Literary Studies (LS)

**PERSPECTIVES:** Choose one theme (underlined) from each of the following three Perspectives. Complete at least 6 semester hours in each of the themes and 9 semester hours in one of the themes (21 total s.h. required). Within the three Perspectives, you must have 3 s.h. in each of the three Designations: Fine Arts (FA), Historical Studies (HS) and Literary Studies (LS). *Italicized courses appear in multiple themes; however, courses may only be applied to one theme.*

**AESTHETIC PERSPECTIVE (6-9 s.h. from one theme; with the exception of "Creative Expressions of Culture," students must take courses from at least two disciplines in their chosen theme)**

- Analyzing Style and Form:** \_\_\_ DAN 2010 (FA), \_\_\_ MUS 2011 (FA), \_\_\_ *PHL 2013*, \_\_\_ THR 2010 (FA)
- The Body: Expression, Presentation and Representation:** \_\_\_ DAN 3430 (FA), \_\_\_ IDS 2210, \_\_\_ THR 3640 (FA)
- Creative Expressions of Culture:** \_\_\_ WGC 2300-2399, \_\_\_ WGC 3300-3399 (Check online course listing for information on specific courses offered each semester.)
- Cultivating Creative Expression:** \_\_\_ ART 2022 (FA), \_\_\_ MUS 2022 (FA), \_\_\_ THR 2022 (FA)
- Expressions of Belief:** \_\_\_ ANT 2300, \_\_\_ COM 3315, \_\_\_ *REL 2010* (LS), \_\_\_ *REL 2020* (LS)
- How We Tell Stories:** \_\_\_ *ENG 2170*, \_\_\_ IDS 3210, \_\_\_ LLC 2025 (LS), \_\_\_ *PHL 1502*, \_\_\_ *REL 2020* (LS), \_\_\_ THR 2005 (FA), \_\_\_ THR 2610 (FA)
- Shaping the Human Environment:** \_\_\_ *COM 3531*, \_\_\_ FCS 1000, \_\_\_ IND 2012
- Social Change Through the Arts:** \_\_\_ ART 2019 (FA)/*SOC 1100*, or \_\_\_ THR 2017 (FA)/*SOC 1100* (Linked classes (must be taken together) – Check online course listing for details), \_\_\_ MUS 2613 (FA)
- Traditions and Innovations:** \_\_\_ *ART 2130* (FA), \_\_\_ ENG 2050 (LS), \_\_\_ HIS 1110 (HS), \_\_\_ MUS 2611\* (HS), \_\_\_ MUS 2612\* (HS), \_\_\_ MUS 3611\* (HS), \_\_\_ *PHL 2013*  
(\*These courses are 2 semester hours.)

**HISTORICAL AND SOCIAL PERSPECTIVE (6-9 s.h. from one theme; with the exception of "Understanding Culture Through Social Practice," students must take courses from at least two disciplines in their chosen theme)**

- Ancient Worlds:** \_\_\_ ANT 1420, \_\_\_ *ART 2030* (FA), \_\_\_ HIS 2312 (HS), \_\_\_ REL 2010 (LS)
- Appalachia:** \_\_\_ A S 2410, \_\_\_ A S 2411, \_\_\_ A S/GLY 2301, \_\_\_ COM 3118, \_\_\_ HIS 3726 (HS), \_\_\_ A S/MUS 2016, \_\_\_ SOC 3710
- Capitalism and Its Critics:** \_\_\_ *ECO 2030*, \_\_\_ FIN 2860, \_\_\_ HIS 3524, \_\_\_ MGT 3040, \_\_\_ P S 3410
- Cultural Diversity:** \_\_\_ *ANT 1415*, \_\_\_ *ART 2011* (FA), \_\_\_ GHY 1040, \_\_\_ HIS 1120 (HS), \_\_\_ MUS 2023 (FA), \_\_\_ *REL 1110*, \_\_\_ SOC 4560, \_\_\_ W S 2421
- Individual and Society:** \_\_\_ ANT 2420, \_\_\_ FCS 2111, \_\_\_ *PHL 2000*, \_\_\_ *PSY 1200*, \_\_\_ RM 2100, \_\_\_ SOC 1000, \_\_\_ W S 2400
- Mind:** \_\_\_ HIS 3923 (HS), \_\_\_ IDS 3260, \_\_\_ LLC 2050, \_\_\_ *PHL 1501*, \_\_\_ *PSY 1200*
- Religion, Myth and Society:** \_\_\_ ANT 2430, \_\_\_ *ART 2030* (FA), \_\_\_ IDS 3261, \_\_\_ *REL 1110*, \_\_\_ THR 3730
- Revolutions and Social Change:** \_\_\_ COM 3532, \_\_\_ HIS 1501 (HS), \_\_\_ IDS 2200 (HS), \_\_\_ MUS 2015 (FA), \_\_\_ *PHL 3030*, \_\_\_ REL 2120, \_\_\_ *SOC 1100*
- This American Life:** \_\_\_ *ECO 2030*, \_\_\_ ENG 2350 (LS), \_\_\_ HIS 1200 (HS), \_\_\_ IDS 2000, \_\_\_ MUS 2014 (FA), \_\_\_ P S 1100, \_\_\_ P S 3722, \_\_\_ S W 2020
- Understanding Culture Through Social Practice:** \_\_\_ WGC 2100-2199, \_\_\_ WGC 3100-3199 (Check online course listing for information on specific courses offered each semester.)

**LOCAL TO GLOBAL PERSPECTIVE (6-9 s.h. from one theme; with the exception of WGC 1104 in "Investigations Global," students must take courses from at least two disciplines in their chosen theme)**

- Democracy and Personal Life:** \_\_\_ COM 2112, \_\_\_ ENG 2130 (LS), \_\_\_ P S 1200, \_\_\_ SOC 1110, \_\_\_ SOC 1530, \_\_\_ W S 2600
- Empire, Colonialism, and Globalization:** \_\_\_ *ANT 1415*, \_\_\_ *ART 2130* (FA), \_\_\_ *ENG 2040* (LS), \_\_\_ *GLS 2000*, \_\_\_ HIS 1400 (HS), \_\_\_ HIS/MSL 3823 (HS)
- Global Resources:** \_\_\_ ECO 2620, \_\_\_ *GHY 1020*, \_\_\_ IDS 3010, \_\_\_ NUT 2351, \_\_\_ TEC 2601
- Identity, Culture and Media:** \_\_\_ *ART 2011* (FA), \_\_\_ *COM 3531*, \_\_\_ *ENG 2170*, \_\_\_ *MUS 2018* (FA), \_\_\_ MUS 2615\* (FA), \_\_\_ MUS 2616\* (FA), \_\_\_ *PHL 1503*  
(\*These courses are offered in alternate years.)
- Investigations Global:** \_\_\_ WGC 1104 (6 s.h.) (This course is available only to Watauga Global Community students.)
- Origins and Migrations:** \_\_\_ ENG 2030 (LS), \_\_\_ FCS 2103, \_\_\_ *GLS 2000*, \_\_\_ HIS 1600 (HS)
- Performance of Culture:** \_\_\_ COM 3535, \_\_\_ DAN 2020 (FA), \_\_\_ DAN 2030 (FA), \_\_\_ *ARB/CHN/FRE/GER/JPN/POR/RSN/SNH) 1050*, \_\_\_ *(FRE/GER/SNH) 1060\*\**, \_\_\_ *MUS 2018* (FA), \_\_\_ THR 2020 (FA)  
(\*\*FRE/GER/SNH 1060 are 6 semester hours. Only 3 semester hours count in General Education.)
- Regions in Global Context:** \_\_\_ *ENG 2040* (LS), \_\_\_ *(ARB/CHN/FRE/GER/JPN/POR/RSN/SNH) 1050*, \_\_\_ *(FRE/GER/SNH) 1060\*\**, \_\_\_ *GHY 1020*, \_\_\_ HIS 1130 (HS),  
[NOTE: \_\_\_ HIS 1520(HS), and \_\_\_ HIS 1525 (HS) give Honors credit for HIS 1130. Do not take HIS 1130 in addition to either of these.], \_\_\_ R M 2140  
(\*\*FRE/GER/SNH 1060 are 6 semester hours. Only 3 semester hours count in General Education.)
- Sustainability and Global Change:** \_\_\_ FCS 2110, \_\_\_ GHY 1010, \_\_\_ *PHL 2015*, \_\_\_ *PHY 1830*, \_\_\_ SD 2400, \_\_\_ TEC 2029

GENERAL EDUCATION (con't)

The **SCIENCE INQUIRY PERSPECTIVE** requires 8 semester hours from one theme (underlined). Courses in themes marked with an \* must be taken sequentially. Check the course descriptions for any pre and co-requisites. *Italicized courses appear in multiple themes; however, courses may only be applied to one theme.*

**SCIENCE INQUIRY PERSPECTIVE (8 s.h. from one theme)**

- Biology and Society: \_\_\_ BIO 1201, \_\_\_ BIO 1202, \_\_\_ BIO 1203
- The Blue Planet: \_\_\_ *GLY 1104*, \_\_\_ GLY 1105
- \* Chemistry Connections to Our Changing World: \_\_\_ CHE 1101/ CHE 1110 \_\_\_, \_\_\_ CHE 1102/ CHE 1120 \_\_\_
- \* How Things Work: \_\_\_ *PHY 1101*, \_\_\_ PHY 1102
- \* The Physics of Our Technological World: \_\_\_ PHY 1103, \_\_\_ PHY 1104
- \* Physics of Self Expression: \_\_\_ *PHY 1101*, \_\_\_ PHY 1810, \_\_\_ PHY 1812, \_\_\_ PHY 1814
- \* Physics with Calculus: \_\_\_ PHY 1150, \_\_\_ PHY 1151
- Restless Planet: Earth, Environment and Evolution: \_\_\_ GLY 1101, \_\_\_ *GLY 1102*, \_\_\_ GLY 1103