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## Science in Middle Grades (SCIM)

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## Science in Middle Grades

|         |                            |   |
|---------|----------------------------|---|
| SCIF498 | Title                      | student team and develops a research proposal to a science informatics problem posed by Montclair State faculty, other academic institutions, or industry representatives. Previous course SCIF 491 effective through Spring 2014.  |
|         | Prerequisites              | Research Experience in Science Informatics II.  |
|         | Number and type of credits | SCIF 497 and departmental approval.   |
|         | Course Description         | 3 hours lecture.<br>The student works as a member of an interdisciplinary Science Informatics student team and implements his/her research proposal developed in SCIF 497 for a science informatics problem posed by Montclair State faculty, other academic institutions, or industry representatives. Previous course SCIF 492 effective through Spring 2014. |
| SCIM501 | Title                      | Biology for Middle Grade Teaching.  |
|         | Prerequisites              | Restricted to majors in Elementary School with Subject Matter Specialization: Science 5-8 or program coordinator approval   |
|         | Special Fee                | Special fee.  |
|         | Number and type of credits | 3 hours lecture, 2 hours lab.   |
|         | Course Description         | This course will provide concepts and learning activities for middle school teacher and will emphasize the study of life from molecule to organism, with a focus on the structure and function of cells, mechanisms of heredity and change, biodiversity, phylogenetic relationships among organisms, biology of populations, and communities, and ecosystems.  |
| SCIM502 | Title                      | Physics for Middle Grades Teaching.   |
|         | Prerequisites              | Restricted to majors in Elementary School with Subject Matter Specialization: Science 5-8 or program coordinator approval   |
|         | Special Fee                | Special fee.  |
|         | Number and type of credits | 3 hours lecture, 2 hours lab.   |
|         | Course Description         | To provide individuals interested in teaching middle school science with knowledge of the principles and applications in physics from a unified energy-based outlook, and how to present the laws of physics to the middle grades students. Emphasis will be placed on problem solving methods and the  |
| SCIM502 | Course Description         | development of critical thinking skills.  |
| SCIM503 | Title                      | Earth and Space Science for Middle Grade Teaching.  |

|         |                            |  |
|---------|----------------------------|--|
|         | Prerequisites              | Restricted to majors in Elementary School with Subject Matter Specialization: Science 5-8 or program coordinator approval  |
|         | Special Fee                | Special fee.   |
|         | Number and type of credits | 3 hours lecture, 2 hours lab.  |
|         | Course Description         | This course introduces students to the physical world and how humans and other organisms fit into that world. The events that lead to the Earth's present configuration, natural phenomenon and water resource questions will be discussed.  |
| SCIM504 | Title                      | Chemistry for Middle Grade Teaching.   |
|         | Prerequisites              | Restricted to majors in Elementary School with Subject Matter Specialization: Science 5-8 or program coordinator approval  |
|         | Special Fee                | Special fee.   |
|         | Number and type of credits | 3 hours lecture, 1 hour lab.   |
|         | Course Description         | This course will provide concepts and learning activities in Chemistry for middle school teachers. Emphasis will be on examining changes of state, solutions, and simple chemical reactions. These teachers will develop the knowledge and experience that will allow them to define the properties of chemical compounds and elements. Laboratory investigations of the properties of substances and their changes through various chemical interactions will provide a basis for the high school student to understand diverse types of chemical reactions and their applications. |
| SOCI100 | Title                      | The Sociological Perspective.  |
|         | Number and type of credits | 3 hours lecture.   |
|         | Course Description         | An introduction to the study of human groups, from peer groups to families to societies. How and why culture, social structure, and group processes arise. Consequences of social forces for individuals.  |
| SOCI102 | Title                      | Racial and Ethnic Relations.   |
|         | Number and type of credits | 3 hours lecture.   |
|         | Course Description         | The social meaning of race and ethnicity. The social, psychological and structural sources of racism; the consequences of this phenomenon to groups; situation and comparative data. Meets General Education 2002 - Social Science. Meets World Cultures Requirement. Previous course SOCI 202 effective through Winter 2012.  |
| SOCI104 | Title                      | Sociology of the Family.   |