include a more advanced study of permutations, sequences in combinatorics, magic squares, the probabilistic method, etc. 3 Cr. Spring.

**MTH 471 Numerical Analysis I (A). Prerequisites: MTH 203.** Provides a survey of methods used to numerically approximate the solutions of a variety of mathematical problems. Covers the generation and propagation of round-off errors, convergence criteria, and efficiency of computation. Includes: roots of non-linear equations, systems of linear or non-linear equations, polynomial approximations, and an introduction to numerical differentiation and integration. Mathematical software, such as MAPLE, will be used. 3 Cr.

**MTH 481 Discrete Mathematics II (A). Prerequisites: MTH 201 and MTH 281.** A second course in discrete mathematics. Includes: study of algorithms, recurrence relations, inclusion-exclusion principle, partial order and equivalence relations, graph theory, and trees. 3 Cr. Every Semester.

**MTH 492 Mathematics Internship (A).** Allows for a supervised experience in applying mathematical skills and techniques in a practical work environment. Requires projects that may include applications in business, the social sciences, or physical sciences. A maximum of three credits can be applied toward the mathematics major. 1-6 Cr.

**MTH 499 Independent Study in Mathematics (A).** To be defined in consultation with the instructor/sponsor and in accordance with the procedures of the Office of Academic Advisement prior to registration. 1-3 Cr.

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**MEDICAL, DENTAL, VETERINARY AND ALLIED FIELDS; PRE-PROFESSIONAL PREPARATION; MEDICAL TECHNOLOGY — SEE DEPARTMENT OF BIOLOGICAL SCIENCES**

**METEOROLOGY — SEE DEPARTMENT OF THE EARTH SCIENCES**

**DEPARTMENT OF MILITARY SCIENCE—UNITED STATES ARMY ROTC**

C29 Cooper Hall
(585) 395-2249

*Chair and Professor:* LTC Tracy A. Davidson, EdD, Pensacola Christian College; *Assistant Professors:* MAJ(P) Patrick M. Clune, BS, New Jersey Institute of Technology; MAJ Nicholas A. Teta, BA, SUNY Albany; MAJ Charles Meyer, MSED, SUNY Oswego; CPT Daniel R. Fletcher, BA, The College at Brockport; *Instructors:* SFC John Leggat and MSG Chester Ciudad; *Support Staff:* Ashley Panzica-Tolbert and Rodney D. Brinkman.

The military science program offers courses of study leading to an academic minor in military science and an officer’s commission in the United States Army. Students may enroll in lower-division courses without incurring a military service obligation. The lower-division courses provide theoretical and practical training in leadership and management principles and applications, basic military skills, and officer responsibilities.

The military science program at the upper-division level consists of instruction in military skills, tactics, communications, and practical leadership experience.

Students must receive prior approval from the department chair and agree to contract with the Army before enrolling in any of the upper-division level courses. Contracted students receive a monthly stipend of $300-$500 per month up to $4,500 per academic year.
Additional military training available through participation in the program includes Airborne School, Air Assault School, Northern Warfare School, Army Nurse Training, etc. Other typical activities include marksmanship, land navigation, water operations, survival strategies, force-on-force exercises, rappelling, leadership reaction/confidence/obstacle courses, military formals, and a battle staff ride. Merit-based scholarships are available to interested and qualified students on a competitive basis. Scholarships pay for full tuition and academic fees (or room and board up to $5,000 per semester), plus a flat rate for textbooks valued at $600 each semester.

The department offers minors under two options.

**Option 1—Academic Minor in Military Science and US Army Officer’s Commission**

(a) Lower Division Course Prerequisites for the minor:  

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSC 101</td>
<td>2</td>
</tr>
<tr>
<td>MSC 102</td>
<td>2</td>
</tr>
<tr>
<td>MSC 201</td>
<td>3</td>
</tr>
<tr>
<td>MSC 202</td>
<td>3</td>
</tr>
<tr>
<td>MSC 310</td>
<td>3</td>
</tr>
<tr>
<td>HST 327</td>
<td>3</td>
</tr>
</tbody>
</table>

(b) Elective Courses:  
Two approved three-credit liberal arts core courses  
with grades of “C” or better  

Total: 22

**Option 2—US Army Commissioning Program**

(a) Prerequisites:  
Written permission from the Department of Military Science chair  
Intent to contract with US Army  
Lower Division Course Credit (see Note 1 for alternatives)

(b) Required Core Courses:  

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSC 103/104</td>
<td>4</td>
</tr>
<tr>
<td>MSC 301</td>
<td>4</td>
</tr>
<tr>
<td>MSC 302</td>
<td>4</td>
</tr>
<tr>
<td>MSC 401</td>
<td>4</td>
</tr>
<tr>
<td>MSC 402</td>
<td>4</td>
</tr>
<tr>
<td>MSC 310</td>
<td>4</td>
</tr>
</tbody>
</table>

Contracted cadets are required to take MSC 103 (fall) or MS 104 (spring) each semester enrolled; each session earns 1 credit

Total: 24

(c) Notes:
1. There are four alternatives for receiving Lower Division course credit.  
   1) Successfully complete MS 101, MS 102, MS 201, and MS 202.  
   OR  
   2) Successfully complete a five-week summer training program (Leadership Training Course), conducted off campus; all expenses paid by the Department of Military Science.  
   OR  
   3) Prior military service participation (honorable), which includes the successful completion of military basic training.  
   OR
Military Science Courses

MSC 101 Leadership and Personal Development (A). Introduces students to the personal challenges and competencies critical for effective leadership. Students learn how personal development of life skills such as goal setting, time management, physical fitness and stress management relate to leadership, officership and the Army profession. Focus is placed on developing basic knowledge and comprehension of Army Leadership Dimensions while gaining an understanding of the ROTC program, its purpose in the Army, and its advantages for the student. Classes meet for one hour of classroom instruction and two hours of leadership lab per week. Students incur no military obligation. Meets GEP 100 requirement. See Option 1 Academic Minor MSC 101. 2 Cr.

MSC 102 Foundations in Leadership (B). Provides an overview of leadership fundamentals such as setting direction, problem-solving, listening, presenting briefs, providing feedback and using effective writing skills. Explores dimensions of leadership values, attributes, skills and actions in the context of practical, hands-on and interactive exercises. Classes meet for one hour of classroom instruction and two hours of leadership lab per week. Students incur no military obligation. 2 Cr.

MSC 103 Military Fitness and Conditioning (B). Provides skills necessary to develop a balanced military-type fitness program for a group while maintaining focus on the individual’s needs and progression. Also provides an understanding of the whole-body fitness and conditioning principals used by the Army. Helps students develop skills necessary to plan, implement, evaluate and manage a military fitness program. Students incur no military obligation. 1 Cr. Fall.

MSC 104 Military Conditioning Lab (B). Provides hands-on application of the Army whole body fitness concept. This progressive program enhances strength, flexibility and endurance. Requires participation in group organization activities, cardiovascular training, muscle strengthening exercises and agility events contained in Army Field Manual 21-20. Includes monthly fitness tests to measure individual progression. Students incur no military obligation. 1 Cr. Spring.

MSC 201 Innovative Tactical Leadership (B). Explores dimensions of creative and innovative tactical leadership strategies and styles by studying historical case studies and engaging in interactive student exercises. Students practice aspects of personal motivation and team building in the context of planning, executing and assessing team exercises. Focuses on the continued development of the knowledge of leadership values and attributes, through an understanding of rank, uniform, customs and courtesies. Classes meet for two hours of classroom instruction and two hours of leadership lab per week. Students incur no military obligation. 3 Cr.

MSC 202 Leadership in Changing Environments (B). Examines the challenges of leading in complex contemporary operational environments. Dimensions of the cross-cultural challenges of leadership in a constantly changing world are highlighted and applied to practical Army leadership tasks and situations. Develops greater self-awareness as students practice communication and team-building skills. Contemporary Operating Environment case studies give insight into the importance and practice of teamwork and tactics in real-world scenarios. Classes meet for two hours of classroom instruction and two hours of leadership lab per week. Students incur no military obligation. 3 Cr.

MSC 203 Leaders’ Training Course (B). Provides practical leadership for students with little or no military experience in a four-phased course. Phases 1 and 2 focus on individual skill and confidence building exercises used to create a foundation for later learning. Phase 3 utilizes physical and mental obstacles to challenge students and evaluate their leadership potential. Phase 4 provides each student with personal feedback from their team of instructors. 4 Cr. Summer.

MSC 301 Adaptive Team Leadership (B). Prerequisite: MSC 202. Challenges cadets to study, practice, and evaluate adaptive leadership skills as they are presented with the demands of the ROTC Leader Development Assessment Course (LDAC). Challenging scenarios related to small unit tactical operations are used to develop self-awareness and critical-thinking skills. Cadets receive systematic and specific feedback on their
leadership abilities. Cadets begin to analyze and evaluate their own leadership values, attributes, skills and actions. Primary attention is given to preparation for LDAC and the development of leadership qualities. Classes meet for three hours of classroom instruction and two hours of leadership lab per week. 1-4 Cr.

MSC 302 Leader Development and Assessment (B). Prerequisite: MSC 301. Uses increasingly intense situational leadership challenges to build cadet awareness and skills in leading small units. Skills in decision-making, persuading and motivating team members are explored, evaluated, and developed. Aspects of military operations are reviewed as a means of preparing for the ROTC Leader Development Assessment Course (LDAC). Cadets are expected to apply basic principles to Army training, and motivation to troop-leading procedures. Emphasis is also placed on conducting military briefings and developing proficiency of operation orders. Classes meet for three hours of classroom instruction and two hours of leadership lab per week. 1-4 Cr.

MSC 303 Leadership Development and Assessment Course (B). Formalized evaluation of leader behavior during an intense, five-week training program with emphasis on proficiency in military skill, teamwork and leadership. Students are stressed in a time-constrained environment to accomplish complex tasks while leading a small team of students and managing scarce resources. At the conclusion of each evaluated task, and in summation at the completion of the course, each student receives personalized performance counseling. 6 Cr. Summer.

MSC 310 Survey of American Military History (A). Does not count toward the major in history or fulfillment of General Education requirements for history. Focuses on a narrative of American military history following a chronological format. Emphasizes the application of American military combat power in regards to governmental decisions, and domestic and foreign relationships concerning the United States. Class discussions and course work also cover the impact of technology on war, civil and political-military relationships, growth and the overall organization of the American armed forces and impact of its use on United States and world history. 3 Cr. Every Semester.

MSC 401 Developing Adaptive Leaders (B). Prerequisites: MSC 301: MSC 302 and one of HST 327, HST 355, HST 356, HST 362, HST 417 or HST 419. Develops cadet proficiency in planning, executing and assessing complex operations, functioning as a member of a staff, and providing leadership performance feedback to subordinates. Cadets are given situational opportunities to assess risk, make ethical decisions and provide coaching to fellow ROTC cadets. Cadets are challenged to analyze, evaluate and instruct younger cadets. Both their classroom and battalion leadership experiences are designed to prepare cadets for their first unit of assignment. Cadets identify responsibilities of key staff, coordinate staff roles, and use situational opportunities to teach, train and develop subordinates. Classes meet for three hours of classroom instruction and two hours of leadership lab per week. 1-4 Cr.

MSC 402 Leadership in a Complex World (B). Prerequisites: MSC 401, MSC 301 and MSC 302. Explores the dynamics of leading in the complex situations of current military operations. Cadets examine differences in customs and courtesies, military law, principles of war, and rules of engagement in the face of international terrorism. Aspects of interacting with non-governmental organizations, civilians on the battlefield, and host nation support are examined and evaluated. Significant emphasis is placed on preparing cadets for their first unit of assignment. Case studies, scenarios and “What Now, Lieutenant?” exercises are used to prepare cadets to face the complex ethical and practical demands of leading as commissioned officers in the United States Army. Classes meet for three hours of classroom instruction and two hours of leadership lab per week. 1-4 Cr.

Other Military Training - United States Air Force ROTC

Air Force ROTC is available to all full-time students through cross-registration with Rochester Institute of Technology (RIT). Details concerning Air Force ROTC classes and scholarships may be obtained by calling RIT at (585) 475-5196.