EMERGENCY MEDICAL CARE
— B.S.

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The two-year, upper division program leading to the Bachelor of Science degree is a sequence of professional course work intended to prepare emergency medical care (EMC) providers for leadership positions in education, management, or advanced clinical practice. Course work may be applied toward meeting entrance requirements for dentistry, medicine, and other graduate programs.

Those electing to study on a part-time basis must complete the junior and senior years within a four-year period. Students new to the profession should be employed a minimum of sixteen hours per week in an emergency medical care-related position in order to gain the most from the program.

Program outcomes
In addition to the stated institutional learning outcomes, the emergency medical care student is expected to meet the following program learning outcomes:

1. Exhibit advanced leadership skills.
2. Demonstrate the ability to apply management concepts and theory to decision making, process management, and emergency medical-care administration.
3. Demonstrate understanding of and apply theory of knowledge acquisition and learning theory.
4. Employ understanding of the role and application of science and research in the practice of emergency medical care.
5. Demonstrate advanced knowledge of emergency medical care practice and delivery.

To be eligible for the junior year of the Emergency Medical Care (EMC) Program, the applicant must:

• Be an EMT or a paramedic, a registered nurse/MICN, or a respiratory therapist.
• Complete the subject requirements listed as prerequisites.
• Arrange for an interview at the University by appointment.

Computer requirement
The Emergency Medical Care (EMC) Program faculty uses distance education technology to facilitate teaching of course work. This technology requires that all prospective students applying for admission to the program have access to a computer with Internet capabilities, by the time they actually begin the program. The program and its faculty will not be responsible for course work not completed due to inability to access a computer. Computer hardware specifications may be obtained from the Department of Cardiopulmonary Sciences administrative secretary.

CPR certification
Students are required to have current health-care provider cardiopulmonary resuscitation (CPR) certification (adult, child, and infant) for all scheduled clinical experience. CPR certification must be completed at the American Heart Association health-care provider level. Certification may be completed prior to beginning the program of study or may be obtained at Loma Linda University. Classes are available on campus at Life Support Education, University Arts building, 24887 Taylor Street, Suite 102.

Admissions
In addition to Loma Linda University (http://llucatalog.llu.edu/about-university/admission-policies-information/#admissionrequirementstext) and School of Allied Health Professions (http://llucatalog.llu.edu/allied-health-professions/#generalequations#text) admissions requirements, the applicant must also complete the following requirements:

Prerequisite/Corequisite (general program track)

Humanities. Choose a minimum of three areas from the following: * 20

<table>
<thead>
<tr>
<th>History</th>
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<tbody>
<tr>
<td>Philosophy</td>
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<tr>
<td>Foreign language</td>
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<tr>
<td>Art/music appreciation/history</td>
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<tr>
<td>Human anatomy, with laboratory **</td>
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<tr>
<td>Human physiology, with laboratory **</td>
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<tr>
<td>Chemistry one quarter/semester, with laboratory **</td>
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<tr>
<td>Introductory physics, one quarter/semester <strong>,</strong>*</td>
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<tr>
<td>Microbiology with laboratory</td>
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<tr>
<td>College algebra <strong>,</strong>*</td>
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<tr>
<td>General psychology or General sociology **</td>
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<tr>
<td>Cultural anthropology or an approved course dealing with cultural diversity **</td>
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<tr>
<td>Select 4 more quarter units from the following: 4</td>
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<tr>
<td>Sociology</td>
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<tr>
<td>Economics</td>
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<tr>
<td>Geography</td>
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<tr>
<td>Political science</td>
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<tr>
<td>Psychology</td>
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<tr>
<td>English composition, complete sequence **</td>
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<tr>
<td>Personal health or nutrition</td>
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<tr>
<td>Two physical activity courses</td>
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<tr>
<td>Electives to meet 96 quarter units</td>
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</tbody>
</table>


Prerequisite/Corequisite (pre-physician assistant track)
Humanities. Choose a minimum of three areas from the following:  * 20

- History
- Literature
- Philosophy
- Foreign language (Spanish language recommended)
- Art/music appreciation/history
- Human anatomy, with laboratory **
- Human physiology, with laboratory **
- Genetics course, recommended
- Microbiology with laboratory
- General chemistry with laboratory, complete sequence **
- Introductory physics with laboratory or general physics **
- College algebra **
- General psychology or General Sociology **
- Cultural anthropology or an approved course dealing with cultural diversity **
- General or introductory sociology
- Freshman English, complete sequence **
- Personal health or nutrition
- Two physical activity courses

Electives to meet 96 quarter units

* Included in this minimum, 4 units of religion per year of attendance at a Seventh-day Adventist college or university
** Denotes EMC B.S. degree program prerequisites
*** Requirement may be waived based on review of previous course work completed

Political science
Anthropology
Psychology

Freshman English, complete sequence **
Personal health or nutrition

Two physical activity courses
Electives to meet 96 quarter units

* Included in this minimum, 4 units of religion per year of attendance at a Seventh-day Adventist college or university
** Denotes EMC B.S. degree program prerequisites

Note: A maximum of 105 quarter units or 70 semester units from a junior/community college may be transferred for credit.
Additionally, C- grades and below are not transferable for credit.

General education requirements
For total unit requirements for graduation, see Division of General Studies (http://llucatalog.llu.edu/about-university/division-general-studies/#courserequirementstext).

Program requirements

Junior Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>AHCJ 305</td>
<td>Infectious Disease and the Health-Care Provider</td>
<td>1</td>
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<tr>
<td>AHCJ 328</td>
<td>Wholeness Portfolio I</td>
<td>1</td>
</tr>
<tr>
<td>AHCJ 426</td>
<td>Introduction to Computer Applications</td>
<td>2</td>
</tr>
<tr>
<td>EMMC 301 or</td>
<td>Pathophysiology in Emergency Care I</td>
<td>3</td>
</tr>
<tr>
<td>AHCJ 402</td>
<td>Pathophysiology in Emergency Care II</td>
<td>3</td>
</tr>
<tr>
<td>EMMC 302 or</td>
<td>Pathophysiology in Emergency Care II</td>
<td>3</td>
</tr>
<tr>
<td>AHCJ 403</td>
<td>Pathophysiology in Emergency Care III</td>
<td>2</td>
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<tr>
<td>EMMC 303</td>
<td>Pharmacology</td>
<td>3</td>
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<tr>
<td>EMMC 308</td>
<td>Pharmacology</td>
<td>3</td>
</tr>
<tr>
<td>EMMC 314</td>
<td>ECG Interpretation and Analysis</td>
<td>2</td>
</tr>
<tr>
<td>EMMC 315</td>
<td>Cardiology</td>
<td>3</td>
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<tr>
<td>EMMC 316</td>
<td>12-Lead ECG Interpretation</td>
<td>2</td>
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<tr>
<td>EMMC 325</td>
<td>Current Issues in Emergency Medical Care</td>
<td>2</td>
</tr>
<tr>
<td>EMMC 331</td>
<td>Theories of Emergency Medical Services I</td>
<td>3</td>
</tr>
<tr>
<td>EMMC 332</td>
<td>Theories of Emergency Medical Services II</td>
<td>3</td>
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<tr>
<td>EMMC 389</td>
<td>Junior Seminars</td>
<td>1</td>
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<tr>
<td>EMMC 425</td>
<td>Instruction and Curriculum Design in Emergency</td>
<td>3</td>
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<td>EMMC 451</td>
<td>Health Care Management for Prehospital Providers</td>
<td>2</td>
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<tr>
<td>EMMC 484</td>
<td>Legal Issues in Health Care</td>
<td>2</td>
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<tr>
<td>RELT 423</td>
<td>Loma Linda Perspectives</td>
<td>2</td>
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<tr>
<td>RELT 440 or</td>
<td>World Religions</td>
<td>2</td>
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<td>416</td>
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Senior Year

<table>
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<tr>
<th>Course</th>
<th>Description</th>
<th>Units</th>
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<tbody>
<tr>
<td>AHRM 471</td>
<td>Statistics and Research for Health Professionals I</td>
<td>3</td>
</tr>
<tr>
<td>AHRM 472</td>
<td>Statistics and Research for Health Professionals II</td>
<td>3</td>
</tr>
<tr>
<td>AHCJ 498</td>
<td>Wholeness Portfolio II</td>
<td>1</td>
</tr>
<tr>
<td>EMMC 429</td>
<td>Psychosocial Models and Interventions</td>
<td>3</td>
</tr>
<tr>
<td>EMMC 435</td>
<td>Disasters, WMD, and Terrorism</td>
<td>3</td>
</tr>
<tr>
<td>EMMC 436</td>
<td>Trauma and Surgical Care</td>
<td>3</td>
</tr>
</tbody>
</table>
EMMC 445  Perinatal and Pediatric Care  3
EMMC 446  Physical Diagnosis  3
EMMC 447  Geriatrics and Aging  3
EMMC 448  Advanced Physical Diagnosis and Critical Care  3
EMMC 452  Seminars in EMS Management I  2
EMMC 453  Seminars in EMS Management II  2
EMMC 464  Ethics and Leadership in Emergency Services  2
EMMC 471  Senior Project I  2
EMMC 472  Senior Project II  2
EMMC 489  Senior Seminars  1
RELE 457  Christian Ethics and Health Care  2
RSTH 411  Advanced Cardiac Life Support  2
REL R 427  Crisis Counseling  2

Total Units: 87

1 May substitute for another REL_4__ religion course elective

Normal time to complete the program
2 years [6 academic quarters] based on full-time enrollment; part time permitted

Courses

EMMC 217. Community Emergency Response Team I. 1 Unit.
Theory and practice of the community emergency response team role. Addresses disaster preparedness, fire suppression, disaster medical care, search and rescue, crisis psychology, response to terrorism, and team organization and administration. Requires completion of skills laboratory.

EMMC 301. Pathophysiology in Emergency Care I. 3 Units.
Develops understanding of human anatomy and physiology to integrate pathophysiology, disease mechanisms, and dysfunction within an emergency medicine framework. Emphasizes integration of organ systems ranging from cardiac, vascular, respiratory, gastrointestinal, and genitourinary; along with specific mechanisms—such as injury, inflammation, and infection—that highlight pathology in medical patients.

EMMC 302. Pathophysiology in Emergency Care II. 3 Units.
Advances knowledge and integration of pathophysiology within emergency medicine by adding additional organ systems and approaches to disease mechanisms. Emphasizes integration of neurology, endocrine, musculoskeletal, and multisystem areas with a focus on injury and inflammation in trauma patients.

EMMC 303. Pathophysiology in Emergency Care III. 2 Units.
Focuses on critical thinking, conceptual knowledge, and application of the foundational principles of pathophysiology. Emphasizes recognition of common disease states, integration of the disease mechanisms and process, and presentation of case reflections to summarize pathology in patients presenting with medical or traumatic complaints.

EMMC 308. Pharmacology. 3 Units.
General overview of pharmacology, including pharmacokinetics, pharmacodynamics, and therapeutics of drugs. Basic definitions, sources of information, classification of drugs, and principles and mechanisms of drug actions. Emphasizes prehospital drug categories.

EMMC 314. ECG Interpretation and Analysis. 2 Units.
Develops basic ECG interpretation skills. Focuses on anatomy and physiology, underlying pathophysiology, and basic rhythm recognition. Overview of related treatments. Emphasizes skills needed by bedside practitioner to differentiate between benign and life-threatening dysrhythmias.

EMMC 315. Cardiology. 3 Units.
Assists the health care provider to develop assessment skills and to increase knowledge of medical management of the patient with acute and chronic cardiovascular disorders. Focuses on anatomy and physiology, underlying pathophysiology, advanced history taking and physical assessment, cardiovascular pharmacology, electrical modalities, cardiac diagnostic testing, and current research. Emphasizes the emergency care of patients with myocardial infarction and trauma to the cardiovascular system. Assignment includes interaction with cardiac patients and observation of diagnostic studies in the clinical setting.

EMMC 316. 12-Lead ECG Interpretation. 2 Units.
Designed for health care providers who are familiar with basic ECG monitoring and are seeking to learn principles of application and interpretation of the 12-lead system. Emphasizes recognition of the acute myocardial infarction. Additional topics include identifying axis deviation, acute ischemic conditions, electrolyte imbalances, bundle-branch block, and infarct impostors. Practical application of information to bedside care of cardiac patients, emphasizing patient assessment, data collection, and use of the 12-lead to guide rapid intervention. Certificate issued upon successful completion of the course.

EMMC 317. Community Emergency Response Team Development and Instruction. 2 Units.
Development of sustainable community emergency response team (CERT) programs. Review of core CERT knowledge and competencies, and instructional techniques in disaster preparedness, fire suppression, disaster medical care, search and rescue, crisis psychology, response to terrorism, and team organization and administration. Discussion of adult learning theories and skills instruction. Meets federal/state criteria to become a CERT trainer. Prerequisite: EMMC 217 or equivalent CERT Basic certification.

EMMC 325. Current Issues in Emergency Medical Care. 2 Units.
Seminar-style discussion on current issues and controversies in emergency medicine. May include topics such as prehospital use of thrombolytic therapy, managed care; primary-care, advanced scope paramedic practice, etc.

EMMC 331. Theories of Emergency Medical Services I. 3 Units.
Introduces prehospital medical services. Roles and responsibilities of paramedics and EMTs. EMS systems design, constraints, and operating problems. EMS environment and scene issues. Medical-legal issues. History and current state of prehospital care and medical oversight.

EMMC 332. Theories of Emergency Medical Services II. 3 Units.
Investigates the dimensions of emergency medical services. Influence of environment on oxygen delivery. Develops paradigms for EMS. Decision making in the constrained environment. Stress models and role theories. Discusses EMS as sequential environments from public health to critical care.

EMMC 389. Junior Seminars. 0.5-1 Units.
Discusses issues of professionalism and career development in the whole person context; written, oral, and electronic communication; writing and research skills; use of computer resources.
EMMC 425. Instruction and Curriculum Design in Emergency Services. 3 Units.
Methods of effective instruction and curriculum design for adult learners. Discusses classroom-management techniques and instructional presentation in public education, in-service and continuing education, college classroom, clinical teaching, conferences, and individual guidance. Applies curriculum design theories to development of instructional units and objectives, evaluation procedures, and assessment tools. Introduces learning-experience design, appropriate technology selection, learner-centered handout/syllabus development, and cultivation of respect for diversity in learning.

EMMC 429. Psychosocial Models and Interventions. 3 Units.
Major models of stress, crisis, and psychological trauma; and how they relate to health-care providers. Psychosocial reactions and responses of populations, individuals, and care providers to societal disruption and trauma, medical emergencies, and death and dying. Applies principles for suicide intervention, critical incident debriefings, and death notification. Roles of psychiatrists, psychologists, social workers, family therapists, and chaplains. Methods of providing temporary, adequate psychological care for individuals in psychosocial crisis.

EMMC 435. Disasters, WMD, and Terrorism. 3 Units.

EMMC 436. Trauma and Surgical Care. 3 Units.

EMMC 445. Perinatal and Pediatric Care. 3 Units.
Emergency evaluation and care of the perinatal and pediatric patient. Cardiac, gastrointestinal, hematologic, renal, and metabolic conditions and treatment. Discusses appropriate versus inappropriate child development and behavior, including developmental stages, temperaments, feeding disorders, sleep disorders, mentally challenged, and attention deficit. Psychosocial aspects of pediatric, child, and adolescent psychiatric disorders.

EMMC 446. Physical Diagnosis. 3 Units.

EMMC 447. Geriatrics and Aging. 3 Units.
A forum for discussing current trends in aging and for identifying the needs of an older population. Discusses psychological and social changes in the older adult. Physiologic process of aging and the medical considerations unique to age. Management of geriatric trauma, medical emergencies, and the impact of chronic diseases. Establishing a social response to aging and viable health care-delivery models for older adults.

EMMC 448. Advanced Physical Diagnosis and Critical Care. 3 Units.

EMMC 451. Health Care Management for Prehospital Providers. 2 Units.
Basic principles of management and how they relate to EMS systems. Federal, state, and local authority for EMS delivery and services, resources for and constraints of EMS systems, relationship to and impact on public safety and health care-delivery systems, interface of public and private organizations, current and future issues.

EMMC 452. Seminars in EMS Management I. 2 Units.
Management theories applied to EMS management and practice. Public/private sector integration, public/media relations, government relations, stress management, management/leadership-skills development, decision making, performance improvement.

EMMC 453. Seminars in EMS Management II. 2 Units.

EMMC 464. Ethics and Leadership in Emergency Services. 2 Units.
Examines the theory and conceptual framework to view and practice ethical leadership as a collective enterprise. Explores emerging paradigms of leadership. Clarifies and contrasts differing approaches to leadership and leadership development. Compares and contrasts the situational approach of the processes of administration, management, and leadership. Utilizes learner-designated activities to develop a personal philosophy of leadership, assess individual characteristics, and relate those strengths to a leadership situation.

EMMC 471. Senior Project I. 2 Units.
Project developed, implemented, and evaluated by students for in-depth experience in area of choice. May include research; community projects; and/or education, management, or clinical affiliations. Students work under direct supervision of assigned faculty mentor.

EMMC 472. Senior Project II. 2 Units.
Continues project developed in EMMC 471.

EMMC 484. Legal Issues in Health Care. 2 Units.
Introduces the legal system as it pertains to health-care professionals. Concepts of malpractice, litigation, consent for and refusal of medical treatment, advanced directives, and patient confidentiality. Discusses employment issues, including discrimination and sexual harassment. Develops health and safety programs per OSHA regulations, risk management, legal issues in vehicle operations and equipment, and EMS and law-enforcement interactions.

EMMC 489. Senior Seminars. 1 Unit.
Discusses issues of scholarship, professionalism, portfolio development and refinement, short- and long-term goal setting, and development of resume/curriculum vitae.

EMMC 498. Special Topics. 1-4 Units.
Special topics in emergency medical care.

EMMC 499. Special Topics Laboratory/Clinical Practicum. 1-8 Units.
Special topics in emergency medical care laboratory and clinical practicum.