



— ARKANSAS COLLEGES OF —
HEALTH EDUCATION

**Master of Science in Biomedicine
Student Handbook & Academic Catalog
2019 – 2020**

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July 2019

Arkansas Colleges of Health Education

Master of Science in Biomedicine

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This document is provided to students of the ACHE Master of Science in Biomedicine (MSB) as a guide to the interpretation and application of ACHE policies and procedures. This Handbook does not include all details of every policy, but rather seeks to cover the essential provisions of the policies and procedures of ACHE and is considered to cover ACHE policies.

The information contained within reflects the status of ACHE as of July 2019. ACHE reserves the right to delete any course or clinical site described in this handbook. ACHE also reserves the right to affect any changes in the curriculum, tuition/fees, administration, or any other phase of school activity without prior notice.

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2019 – 2020 Academic Calendar

MSB 2019-2020 Calendar Year

FALL SEMESTER – 2019

MSB Student Orientation.....	(TH) July 25
Fall Semester Begins for OMS-I and MSB	(F) July 26
Census Date	(M) August 19
Labor Day Observed (<i>No Classes; Offices Closed</i>).....	(M) September 2
Thanksgiving Holiday Break (<i>No Classes; Office closed 11/28 – 11/29</i>) .	(W-F) November 27 -29
Fall Semester Ends for OMS-I and MSB	(F) December 13
Final Grades due for OMS-I, OMS-II, and MSB	(T) December 17
Winter Break Begins (<i>Offices Closed 12/20 – 1/1</i>)	(F) December 20

SPRING SEMESTER – 2020

Spring Semester Begins for MSB	(TH) January 2
Martin Luther King, Jr. Day Observed (<i>No Classes</i>).....	(M) January 20
Census Date	(T) January 21
Spring Holiday Break	(W-F) March 25 – 27
Spring Semester Ends for MSB	(TH) May 14
Final Grades Due for MSB	(F) May 15
MSB Commencement.....	(SA) May 16
Memorial Day Observed (<i>Offices Closed</i>).....	(M) May 25

Notice of Receipt and Disclaimer

As a Master of Science in Biomedicine (MSB) student at the Arkansas Colleges of Health Education (ACHE), I acknowledge that I have received access to an online copy of the ACHE Master of Science in Biomedicine Student Handbook & Academic Catalog and that it is my responsibility to read and comply with the policies within as well as any revisions made at a later date. I understand that this document is located at www.acheedu.org/students. I further understand that it is my responsibility to read and comply with the policies within the ACHE Student Handbook, which is also online.

Information contained in this document is subject to change without prior notice and shall not constitute a legally binding contract. Changes will be distributed to students electronically and will become effective immediately unless otherwise specified.

Notice of anticipated changes will be given to the students in advance of implementation whenever possible. Each subsequent edition of this MSB Student Handbook & Academic Catalog supersedes all previous handbooks titled the same and directives where they may be in conflict. Failure to read the handbook and to be familiar with the rules, policies, and procedures does not excuse the student from being required to comply with the provisions of the policy.

I further understand that:

- a. I will be assigned a campus e-mail address that will be the only mechanism by which I will receive all official notices from ACHE ;
- b. It is my responsibility to check that e-mail address regularly;
- c. I am deemed to have notice of all information sent to my address.

I have been advised that some non-campus e-mail services are not compatible with the campus e-mail service, so attempts to forward e-mail to a non-campus address may be unsuccessful.

Any recommendations for additions, deletions, or changes must be submitted in writing to the Vice President of Academic Affairs of ACHE. Final approval is by the President and the CEO of the Arkansas Colleges of Health Education (ACHE).

By signing this form, I understand that it is my responsibility to read the ACHE MSB Student Handbook, regularly check my campus e-mail account, and be familiar with the policies established by ACHE .

Signature

Date

Print Full Legal Name

Student Number

Accreditation

Arkansas Colleges of Health Education is a not-for-profit corporation registered with the Arkansas Secretary of State and approved by the Internal Revenue Service as an institution of higher learning in Fort Smith, Arkansas.

ACHE has been granted certification by the Arkansas Higher Education Coordinating Board (AHECB) to offer the degree of Master of Science in Biomedicine.

Arkansas Higher Education Coordinating Board certification does not constitute an endorsement of any institution or program. Such certification merely indicates that certain criteria have been met as required under the rules and regulations implementing institutional and program certification as defined in A.C.A. §6-61-301.

Applicability of the Handbook

This Handbook DOES NOT replace the ACHE Student Handbook. If any specific conflicts are found, the ACHE Student Handbook shall supersede. Otherwise, this Handbook is to be used and followed as an Addendum to the ACHE Student Handbook. All MSB Students of ACHE are bound by both the ACHE Student Handbook and this MSB Student Handbook and Academic Catalog.

Introduction

Arkansas Colleges of Health Education Mission Statement

To educate and train a diverse group of highly competent and compassionate health care professionals; to create health and research support facilities; and to provide healthy living environments to improve the lives of others.

The Master of Science in Biomedicine (MSB) is a one-year graduate program administered through the Arkansas Colleges of Health Education (ACHE) designed to fortify students in foundational basic science. Taught wholly by full-time faculty of the Arkansas Colleges of Health Education (ACHE), the MSB program has been conceived to provide clinically-oriented, graduate-level training to students who wish to boost their academic standing towards a long-term goal of pursuing a career in medicine or biomedical science.

We have as a goal the graduation of students who are prepared to succeed in any graduate medical education program they decide to pursue. In addition, we are committed to ensuring that our graduates have the foundation of knowledge, skills, and competencies that will enable them to meet the needs of the wide diversity of patients they will encounter in their professional careers. We are committed to producing healthcare professionals who are knowledgeable, skilled and competent, but also professional and ethical. The college is dedicated to educating those with the skills needed to remain lifelong learners, the desire to contribute to the advancement of healthcare knowledge, and the passion to be of service to their patients throughout their professional careers.

ACHE prepares to accomplish these goals by:

- Providing experienced and dedicated professionals and faculty who demonstrate excellence in their knowledge, skill, professionalism, ethics in their personal conduct and dedication for the education of students, to serve as the educators, mentors, and role models for our students.
- Providing the facilities and resources necessary to ensure that its students have access and opportunity to acquire a state-of-the-art education in a positive learning environment.
- Providing the resources and support for research and scholarly activity that aligns the needs of our communities, students, and faculty.

Requirements for Admission

ACHE does not have a set minimum GPA or MCAT score as we conduct a holistic review of applicant materials taking into consideration all factors that might indicate an applicant is a fit for our mission. While competition dictates that most students will have an overall GPA > 3.5 and science GPAs > 3.4, respectively, which reflect greater opportunity for success with the curriculum, students with GPAs below these averages may be considered. The upper division grades in the sciences are scrutinized by the faculty in making admission decisions.

Students must take the MCAT or other nationally normed, standardized, post-graduate, medical professional exam (DAT, GRE, etc.) and have official scores sent to admissions.msb@acheedu.org. Scores are valid for three years from the test date.

The minimum required prerequisite courses for matriculation are:

Discipline	Hours Required
Biological Science	8 semester hours
Biochemistry	3 semester hours
Inorganic Chemistry with Laboratory (8 hours of general/college chemistry will fulfill this requirement)	8 semester hours
Organic Chemistry with Laboratory	8 semester hours
Physics with Laboratory	8 semester hours
Additional Science Electives: Faculty recommend courses in Anatomy, Physiology, Cellular Biology, Immunology, Microbiology, or Genetics to enhance student's success in medical school	4 semester hours
English Composition and Literature	6 semester hours

These basic requirements must be taken for credit and passed at a college or university accredited by a regional accrediting body that is recognized by the U.S. Department of Education.

PostBacCAS Application Process

ACHE will participate with other post-baccalaureate programs in a centralized application processing service called PostBacCAS. An application may be submitted online at <http://postbaccas.liaisoncas.org/students/>. To initiate the application process, applicants must

apply directly to PostBacCAS.

Applications Deadline

Applications will be available through PostBacCAS each year with a priority deadline of June 1.

- Must include official transcripts from each college/university attended
- Official MCAT score
- 2 letters of recommendation from science faculty or an official recommendation from a University Pre-Professional Advisory Committee

Admission Process

- ACHE will screen applicants and invite those qualified for an interview.
- Interviews will take place via video conference.
- Interviews will be conducted by members of the Admissions Committee
- A student will be notified of their admission decision within 10 business days after the interview.
 - Accept, deny or placed on alternate/wait list
 - Initially via email or phone, followed up with a mailed letter
- Once admission has been offered, a \$500 deposit will be due by a designated deadline
 - Applied toward MSB tuition at matriculation
- Shot records – state law requires 2 MMR for students in the classroom. Submit upon admission offer with deposit to the MSB admissions/program director.
- For admission eligibility, MSB applicants must be U.S. citizens or permanent residents

Immunizations

- Annual influenza immunization is required by ACHE

Measles, Mumps, and Rubella

- Two (2) doses of MMR vaccine OR serologic proof of immunity for Measles, Mumps, and/or Rubella is required
- If the student's titer is negative or equivocal for Measles they will require 2 doses of MMR
- If the student's titer is negative or equivocal for Mumps they will require 2 doses of MMR
- If the student's titer is negative or equivocal for Rubella they will require 1 dose of MMR

Interview Selection Process

To be considered for an interview, an applicant must meet all the preceding admissions requirements and Technical Standards for Admissions and Continued Enrollment, have a complete file and all required letters of recommendation.

After the Office of Admissions receives these materials, the applicant's file is reviewed to determine eligibility for an interview, based on the established criteria of the Admissions Committee. If it is found to meet the standards and mission of ACHE, an invitation may be

extended to interview.

Interviewing candidates are required to read and sign an acknowledgement that they:

- Have read and comply with ACHE 's Attendance and Dress Code policy, Code of Student Conduct/Academic Responsibility, Code of Behavioral Conduct, and Standards for Conduct for Teacher-Learner Relationship found in the ACHE Student Handbook.
- Meet the Technical Standards for Admissions and Continued Enrollment (any questions pertaining to whether a standard is met must be addressed with the Director of Admissions);

Each applicant who interviews with ACHE will be reviewed by the Admissions Committee. An interview is not a guarantee of admission. An admissions decision, based on academic performance, professional experience, and interview will be provided to the applicant.

(Please see ACHE Student Handbook for Technical Standards)

Intentional misrepresentation or omission of information on any form relevant to admissions or records will subject the student to rescinding of admission offer or dismissal. ACHE reserves the right to deny admission to any applicant for any reason it deems sufficient. Matriculation will be denied to applicants who have failed to maintain a good record of scholastic performance and/or good record of personal conduct between the time of their acceptance and their matriculation at ACHE. After the interviews, the interviewers forward their recommendation to the Admissions Committee.

All offers of admission are conditional until such time as the applicant has undergone a criminal background check and drug and alcohol screen to ensure they meet the Technical Standards for Admissions and Enrollment established by ACHE, meet the physical, immunization and immunization titers requirements as verified by ACHE.

Transfer and International Student Applicants

Transfer or International applicants will not be considered for admission. Students applying with a master's degree will be considered for admission only if the ACHE MSB coursework does not materially replicate previous course of studies.

Matriculation Process

Accepted applicants must fulfill the conditions set forth in the matriculation agreement. Matriculating students must sign and submit by the deadlines published:

- Matriculation Agreement
- ACHE Master of Science in Biomedicine Student Handbook & Academic Catalog Receipt and Disclaimer
- ACHE Student Handbook Notice of Receipt and Disclaimer
- **Documentation of Completion of Required Prerequisite Coursework:**
Students must take the MCAT and have official scores sent to admissions.msb@acheedu.org . MCAT scores are valid three years from test date.

Please see the ACHE Student Handbook for additional Prerequisite Coursework.

- **Any other requirements set forth in the matriculation agreement**

Non-Refundable Deposit

Payment of a non-refundable \$500 must be made within two weeks of admissions notification in order to reserve an MSB class seat. Deposits will be applied to tuition. In the event that a student has also applied to Arkansas Colleges of Osteopathic Medicine and is accepted in the same academic year, the deposit likewise will be applied to tuition.

Tuition, Fees and Deposits

Average Annual Tuition for 2019-2020	\$30,000.00
Acceptance Fee/Tuition Deposit (non-refundable)	\$500.00
Annual Fees:	
Technology Fee	\$750.00
Administrative Fee (Laboratory and Graduation Fees)	\$750.00
Student Activity Fee (Student club fees)	\$500.00
Student Health Fee (annual flu shot if not covered by student insurance, mental health resources, record keeping, disability insurance)	\$200.00
Parking and Auto Registration	\$50.00

ACADEMIC POLICIES AND REGULATIONS

Student Grievances and Appeals

Academic Related Grievances

An individual concern that is academic in nature should be first discussed with the immediate instructor and must be done in a professional manner within three business days. If a resolution cannot be reached, the student may, within three days submit a written appeal to the MSB Program Director. If resolution cannot be reached from the prior appeals, the student may appeal, in writing within three days to the Provost, whose decision will constitute the final resolution. A concern over general course procedures or grading policies should be addressed through the student representative on the Curriculum Committee.

Cause for Final Grade Appeals

In order to appeal a final grade, a student must offer convincing arguments that good cause exists for mandating a change of grade. A request for a grade appeal is not automatically granted.

Each of the following reasons, if supported by sufficient evidence, shall constitute “good cause”:

- Assignment of a grade that is malicious and/or discriminatory: i.e., in determining the grade, the Course Director or Coordinator, Program Director, or Systems Co-coordinator (“professor”) clearly did not apply the same standards he/she used for grading other members of the class whose work and behavior were similar to those of the appealing student.

- Assignment of a grade that is arbitrary or capricious: i.e., the professor had apparently no discernible rationale for arriving at the grade given.
- Assignment of a grade that has resulted from human error: i.e., the professor reported an incorrect grade as the consequence of a mistake in computation, in recording, or in some other mechanical aspect of the grading process.

The following reasons do not constitute “good cause” for the purposes of appealing a grade:

- Disagreement with the course or systems requirements established by the professor.
- Disagreement with the grading standards established by the professor.
- Disagreement with the judgment of the professor in applying his/her grading standards so long as he/she has made a reasonable effort in good faith to be fair and consistent in exercising that judgment. Good faith on the professor’s part shall be presumed unless the student can offer convincing arguments to the contrary.
- The student’s desire or “need” for a particular grade, while compelling to the individual on a personal level, shall not be considered “good cause” for purposes of appeal.

A student seeking to appeal a decision regarding a non-failure classroom grade should seek solutions through the following administrative channels; entering at the appropriate level and proceeding in the order stated:

1. Course Instructor/Course Director
2. MSB Program Director
3. Provost (final level of appeal)

A student seeking to resolve a grade concern through the administrative channels above must initiate such action in writing within three business days from the date the grade is recorded at the Registrar's Office. Review of a student problem and complaint at each administrative level will be carried out as expediently as possible. If the student is not satisfied with the decision, he or she may appeal to the next administrative level. If the student chooses to continue the appeal, this must be done in writing within seven business days of the date the decision was rendered at each level of the appeal, excluding weekends and official school holidays. No administrative grade changes will be accepted 30 days after the grade is recorded.

Academic Grading, Promotion and Graduation Policies

Students are assessed all year regarding academic progress on the basis of their performance on assignments and written and practical examinations. Students are required to pass all courses in each block in order to progress to the next block. Students must pass each course with a C (70%) or better. To pass the course, the student must pass each and every component of the course.

Academic Standing

Each student's academic achievement is reviewed each semester, and the Office of the Registrar compiles a transcript. A copy of this transcript is available to the student, the Office of the Dean, the Associate Dean of Academic Affairs, the Student Progress Committee, the Office of Student Affairs, the Office of Administration and Finance, and to other individuals or facilities when authorized by the student or the Program Director. Enrolled students in good standing may download their own unofficial transcript at any time, free of charge, through the Student Portal.

The transcript includes:

- All grades earned
- Deficiencies (incompletes, failures, etc.)
- Semester GPA and cumulative GPA
- Honors

Any student not in good academic standing may be prohibited from participating in any outreach, extracurricular, or other student activities, holding office in any ACHE organization, or being elected to any honorary or other school organizations. The student may be required to withdraw from all student activities, extracurricular activities, etc. by the Office of Student Affairs or the Office of the Program Director. Failure to comply with this policy or directives will be considered a lack of professional responsibility, a breach of ethical practices and standards, and constitutes a basis for dismissal from ACHE.

Students who are not in good academic standing will be referred to the Director of Academic Support who will meet with each student to develop an individualized academic plan and arrange services such as tutoring. Those students who continue to be unable to make satisfactory progress in passing all courses and requirements will be referred to the Student Progress Committee (SPC). The SPC, in the process of determining eligibility for promotion or graduation, may consider the results of the student assessments, attendance, conduct and potential professional attributes.

Students are expected to maintain Good Academic Standing as they progress towards degree completion. Students will be evaluated on course grades, cumulative grade, academic standards, and professional standards. Academic standing is classified as follows:

- Good Academic Standing
- Academic Probation
- Academic Dismissal

Good Academic Standing - A student is considered to be in good academic standing when he or she has successfully completed all required courses to date with a cumulative overall grade of 70 (grade point average of 2.00) or better. A student in good standing must have successfully completed all incomplete course work and is not currently on academic or administrative probation, suspension, or dismissal.

Academic Probation - A student will be placed on academic probation when he or she has a cumulative overall grade less than 70 (GPA 2.0), any incomplete coursework, or Student Progress Committee imposed sanction. A student on this status will be prohibited from certain activities and officiating positions.

Academic Dismissal - A student will be dismissed when he or she fails to make satisfactory academic progress, fails to meet academic standards, has multiple course failures.

MSB Student Progress Committee

Membership and Function: The MSB SPC will consist of seven voting faculty members; at least four (4) members will be ARCOM basic science faculty who teach in the MSB program. Up to three (3) members may be clinical faculty or faculty from other ACHE medical professional programs as appropriate. The MSB Program Director and Assistant/Associate Dean of Student Affairs (or a proxy appointed by the same) shall serve as the ex-officio members.

The MSB SPC will function identical to enumerated functions in the ACHE Student Handbook except that remediation exams for individual course failures will not be offered.

At Risk Categories

Risk designations are determined after each exam throughout a semester. Both moderate and high risk categories have varying levels of academic intervention activities required by the student. These interventions include; mandatory attendance in certain academic sessions, advisor meetings, tutoring, and meetings with other faculty/staff as appropriate. Exams taken after a risk designation may result in the student moving from one risk status to another.

- 1) **Low Academic Risk Category-** A student is considered to be at low academic risk when he or she has a running average score in each of the required course components of 80 or above.
- 2) **Moderate Academic Risk Category-** A student will be at moderate academic risk when he or she has a running average score of any required course components equal to or greater than 70 but less than 80. A student who raises his or her running average in each required component of a course to greater than 80 will return to the low risk category for that course. To ensure that the student has adequate time to commit to the academic endeavors required to be successful with the curriculum and the requirements of the professional degree he or she is seeking, a student on this status may be prohibited from certain extracurricular activities and officiating positions. Students at moderate academic risk will have mandatory class attendance and will be required to meet with their faculty advisor. Tutoring will be available to students at moderate academic risk. Students risk status will be reevaluated throughout the semester.
- 3) **High Academic Risk Category-** A student will be considered at high academic risk

when he or she has a running average score of any required course components less than 70. A student who raises his or her running average in each required component of a course to 70 or greater will return to a lower academic risk category for that course. A student on this status must seek tutoring, attend all class sessions where the course failure occurred, and will be prohibited from certain activities and officiating positions. Student in this status will be required to seek academic consultation and assistance if a second exam failure occurs in any course. Students risk status will be reevaluated throughout the semester.

Satisfactory Academic Progress

In order for a student to be deemed as making satisfactory academic progress, the student must be in good academic standing, meet the requirements as set forth by the SPC, and demonstrate adequate professional potential in progress as determined by the faculty and administration.

Attendance

The attendance policy for individual courses, laboratory sections, small-group meetings, and other non-lecture encounters, if variant from overall policy, will be specified in the course syllabus along with the requirements and/or penalties.

The attendance policy at any educational session where the presence or absence of the individual student potentially adversely affects the normal operation of the course, or the education of other students (group learning activities, anatomy), is **mandatory** unless excused in advance. While students should always notify their course director/coordinator, excused absences during are coordinated through the Office of Student Affairs. Any student who misses, without prior approval, an assigned laboratory session with his or her group will receive a grade of zero for that session and will not be allowed to make it up.

ACHE does not grant retroactively excused absences except in dire emergencies but does grant reasonably excused absences (proactively). Students are not entitled to make up work, missed exams, etc. if they do not have an excused absence. Reasonably excused absences may include illness, death in the family, attendance at professional events, etc. In such cases, the student should contact via email the Assistant/Associate Dean for Academic Affairs as soon as possible, within 48 hours upon return to school and provide a written explanation (via email) for the absence and any supporting documents (i.e. doctor's note). Illness may be required to be documented by a healthcare professional at the request of the administration. Any absence for illness lasting more than three days requires a medical release to return to class. Any missed examination for medical illness will require documentation of the illness from a healthcare provider.

Any student who plans to be absent from a lecture or examination for planned events (e.g. ACHE travel, educational event) must contact the Office of Student Affairs in writing prior to the date of the absence. Upon return, the student must contact the Office of Student Affairs. The student is responsible for any assignments and lecture material missed during their

absence. A student who misses a scheduled examination for such an event will be entitled to take the make-up examination.

Lectures at ACHE will be digitally recorded to supplement learning and for student review of information provided during the class. They are also available for review during the student's clinical education but are not a replacement for attendance in class. There is no guarantee that every lecture will be recorded or that the lecture recording will be of a quality that can be utilized for primary learning.

As a point of policy, recorded lectures generally are not released until 72 hours after the active presentation. Lectures will not be broadcast "live" over the CCTV system or the internet during presentation except in specific incidences such as inclement weather or when a clinical lecture was previously cancelled at the last minute, as directed by the Program Director.

Students must notify the Office of Student Affairs, in writing regarding circumstances that may necessitate being absent three or more days from school. Students must contact the appropriate faculty upon his or her return.

Any student, who is absent from classes for five consecutive school days without notifying the Office of Student Affairs may be considered to have voluntarily withdrawn from ACHE.

Unexcused Absences

All unexcused absences will be reported to Student Progress Committee. If a student has more than two unexcused absences, they will be referred to and required to appear before the Student Progress Committee.

Student Grades

Grading for ACHE students is based on a scale of 0 to 100%, rounded to the nearest whole number. ACHE requires a grade of 70% or above for passing of all courses, any grade below 70% is failing. To pass the course, the student must pass each and every component of the course. In the MSB program, components are (1) Lecture-based didactic materials including any associated learning assignments that support the didactic component, which will be assessed by scheduled in-class examinations, quizzes, or take-home graded assignments; and (2) Laboratory-based material assessed by graded practical examinations or skill-based laboratory assessments.

Grading Scale		
MSB		Other Grades
A	90-100%	P – Pass
B	80-89%	F – Fail
C	70-79%	I – Incomplete
F	69% and below	R – Repeat
		W - Withdrawal

Examinations and Reexamination

A student is expected to report to each examination at the scheduled time. Students who fail to attend a regularly scheduled exam may be required to take a make-up examination, if eligible, or may receive a grade of zero for that examination if not eligible for the make-up. No student in a written and/or computer-generated examination will be permitted to leave the examination before 30 minutes after the examination starting time.

Make-up Examination

A student who does not take an examination at its scheduled time and has a verified excusable absence, or any student who reports to take an examination after the scheduled starting time of the examination may be eligible or required to take a make-up examination.

Make-up examinations may be short answer, essay, verbal, or multiple-choice formats at the course director's discretion and will be treated the same as any other examination in terms of grading.

Any and all exceptions will be stated in the course syllabus. The student is responsible to read each course syllabus and to comply with the policies as stated.

Make-up examinations will be given within 10 business days after the original examination on a day and time determined by the Office of Academic Affairs. The examination may be given outside of regular ACHE hours or days at their discretion.

If the student misses the make-up examination, he or she will receive a score of zero for that examination. The policies for examinations will pertain to all make-up examinations. In the interim, the student will have a grade of "I" for the course. Any exception will be made solely at the Program Director's discretion.

No student will be eligible to take more than one of the scheduled examinations as make-ups in those courses offering more than one examination. Failure to take each course's examinations as scheduled, outside of this policy exception, will result in failure of the course. In those courses with only one examination, missing the examination will result in the student taking a make-up examination as stated above.

Transcript Notations

Failing grades will be included in calculating the average numeric grade for that semester and the cumulative numeric grade average.

Academic Credit

Academic credit is granted for classes successfully completed in the MSB program. One credit hour is defined as a total of 12 lecture hours or a total of 24 laboratory hours.

Examinations and anticipated study outside of the assigned requirements are not included in the calculation of academic credit.

Example:

A course consists of 48 lecture hours.

Total Course Credit Hours= $48/12=$ 4.0 credit hours

A course consists of 72 lecture hours and 36 laboratory hours.

Total Course Credit Hours = $72/12 = 6 + 36/24 = 1.5 = 7.5$ or 8.0 credit hours

Course credit hours are rounded up for 0.5 or above and rounded down for less than 0.5.

No student may graduate from ACHE without completing all of the requirements of the curriculum as established by the faculty and administration, meeting all of the requirements for knowledge, skill, procedures, and techniques and completing the ACHE academic program of study.

Graduation Requirements

A student who has fulfilled all the academic requirements may be granted a Master of Science in Biomedicine provided the student:

1. Has satisfactorily completed all of the curriculum.
2. Has completed all academic requirements.
3. Has complied with all the curricular, legal, and financial requirements of ACHE .
4. Has attended the compulsory portions of graduation week, including graduation rehearsal and the graduation ceremony, unless the requirement has been waived by the MSB Program Director.
5. Has demonstrated the ethical, personal, and professional qualities deemed necessary by the ACHE faculty and gained the recommendation for graduation from the Student Progress Committee and the Faculty Council.
6. Has demonstrated compliance with the Code of Behavioral Conduct.

Awarding of the MSB Degree

Granting of the MSB degree requires that the ACHE faculty believe the student has attained sufficient maturity of thought, ethical, and professional proficiency.

Degrees are not awarded solely upon the completion of any prescribed number of courses, credits, or upon passing a prescribed number of examinations. Granting of the degree requires in addition, that the ACHE faculty believes the student has attained sufficient maturity of thought, ethical, and professional proficiency. Matriculation and enrollment does not guarantee the issuance of a degree without satisfactorily meeting the aforementioned curriculum and degree requirements.

The process of verification that a student meets all graduation requirements is as follows:

- 1) Registrar provides current listing of students in good standing to the Student Progress Committee.
- 2) The Student Progress Committee makes a recommendation of students to graduate to the Faculty Council.
- 3) The Faculty Council makes a recommendation of students to graduate to the VPAA of ACHE .
- 4) The VPAA of ACHE passes the recommendations to the President of ACHE.
- 5) The President of ACHE forwards to the Board of Trustees.
- 6) The Board of Trustees has final granting authority.

Curriculum Schedule for ACHE Master of Science in Biomedicine

REQUIRED COURSES

Fall Semester 2019

	Credit Hrs.	Contact Hrs. (20 wks.)
Fundamentals of the Anatomical Sciences*	8	78 Lecture/39 Lab
Medical Biochemistry	4	48 Lecture
Healthcare Foundations	3	36 Lecture
Totals	15	201
Spring Semester 2020		
	Credit Hrs.	Contact Hrs. (20 wks.)
Medical Cellular and Molecular Biology	5	60 Lecture
Medical Microbiology/Immunology	4	48 Lecture
Integrated Pathophysiology	3	36 Lecture
Medical Ethics and Professionalism	3	36 Lecture
Totals	15	180

*Taken with Medical Students at ARCOM.

MSB COURSE DESCRIPTIONS

MSB 571 (COM 571): Fundamentals of the Anatomical Sciences (FAS)

Fall Semester 2019

8 credit hrs., 78 lectures and 39 Lab Sessions

Course Director: David McWhorter, PhD

Fundamentals of the Anatomical Sciences course consists of components from four preclinical courses: 1) Gross (macroscopic) Anatomy, 2) Histology (microscopic anatomy), 3) Embryology (early human development), and 4) Regional Neuroanatomy (e.g., telencephalon, metencephalon, and myelencephalon). The main goal of the course is to provide students with the foundation necessary to seamlessly transition into the systems-based, hybrid curriculum used at ARCOM. Large group sessions will utilize interactive learning strategies, shifting classroom time from passive conveyance of course material to deeper learning with opportunities for application of course concepts. The format of anatomy laboratory sessions will consist of small group learning and peer teaching in which teams actively learn about the human body via dissections within groups as well as among groups. Surface anatomy, medical imaging, and clinical correlations will be emphasized to provide meaningful context to students' learning of the anatomical sciences.

Heather Guzik, M.A. (University of Southern Mississippi)
Anatomy Lab Instructor, ARCOM

Joanne Peterson, Ph.D. (University of Oklahoma Health Sciences Center)
Assistant Professor of Anatomy, ARCOM

David L. McWhorter, Ph.D. (Kent State University in conjunction with Northeast Ohio Medical University)
Professor and Chair of Anatomy, ARCOM

Raja Rachakatla, Ph.D. (Kansas State University)
Associate Professor of Anatomy, ARCOM

Zachary Throckmorton, Ph.D. (University of Wisconsin)
Associate Professor of Anatomy, ARCOM

MSB 411: Medical Biochemistry (MB)

Fall Semester 2019

4 credit hrs., 48 lectures

Course Director: Matthew White, PhD

The Medical Biochemistry (MB) course covers foundational concepts of biology, chemistry, biochemistry, molecular and cell biology as they relate to human health and

disease. Specific content will include but may not be limited to: The structural basis of life, including essential organic chemical principles; nucleic acid, protein, lipid and carbohydrate structure and function; and enzymatic mechanisms whereby biological molecules are transformed in critical biochemical pathways. Bioenergetics will be presented from the standpoint of metabolic energy storage and utilization. Cell structure and function will be surveyed with emphasis on organelle function and basic mechanisms of cell signal transduction. The course will also introduce fundamental genetic principles.

Lance C. Bridges, PhD (University of Oklahoma Health Sciences Center)
Associate Professor of Biochemistry, Molecular & Cell Sciences ARCOM

Brandy Ree, PhD (University of Arkansas Fayetteville)
Assistant Professor of Biochemistry, Molecular & Cell Sciences ARCOM

Ken Hensley, PhD (University of Kentucky)
Professor of Biochemistry, Molecular & Cell Sciences ARCOM

Matthew White, PhD (University of Texas Health Science Center/MD Anderson Cancer Center)
Assistant Professor of Biochemistry, Molecular & Cell Sciences ARCOM

MSB 421: Healthcare Foundations (HF)

Fall Semester 2019

3 credit hrs., 36 lectures

Healthcare Foundations (HF) provides a basic understanding of the U.S. healthcare system, its funding and methods of practice; interprofessional health care team member roles and responsibilities; healthcare databases and knowledge management platforms. Basis of population health will be stressed with emphasis placed on social determinants throughout the lifespan. Content will consist of a mixture of didactic lectures, facilitated discussions of historical cases and current events, team-based learning (TBL) exercises and simulated experiences. All topics covered will provide principles presented on board exams and the practice of medicine.

Harvey Potts, MD, MPH (Windsor University Schools of Medicine and University of Oklahoma Health Science Center)
Executive Director of Simulation and Clinical Skills, Assistant Professor and Course Director

Ken Hensley, PhD (University of Kentucky)
Professor of Biochemistry, Molecular & Cell Sciences ARCOM

MSB 431: Medical Cellular & Molecular Biology (MCMB)

Spring Semester 2020

5 credit hrs., 60 lectures

Course Director: Brandy Ree, PhD

This course provides a basic understanding of eukaryotic genetics and cell biology, with an emphasis on the molecular and cellular basis for the development, diagnosis, treatment, and inheritance of human disease. Specific content will include but may not be limited to: DNA replication, transcription and translation, protein homeostasis, organelle structure and function, cell signaling, cell cycle, cell motility, cell death and injury, stemness, cancer, therapeutics, and toxins. Special emphasis will be placed on mechanisms of established and experimental therapeutics, along with how genetics impact therapeutic decisions. Content will be derived from both textbooks and current literature, with the underlying goal of providing a foundational understanding for the evolving influence of genetics and cell biology on medicine.

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MSB 451: Integrated Pathophysiology (IP)
Spring Semester 2020
3 credit hrs., 36 lectures

An introduction to fundamentals of physiology and human disease. This course will include study of basic human organ system physiology with an emphasis on the most common clinical pathologies that cause challenge to and deviations from homeostasis. The autonomic, musculoskeletal, cardiopulmonary, renal, gastrointestinal and neuroendocrine systems will be emphasized. Fundamentals of pharmacology will be discussed including pharmacodynamics and pharmacokinetics.

Talal El-Hefnawy, MD, PhD (Univ of Turku, Zagazig University Medical School)
Chair of Physiology, Pharmacology and Pathology ARCOM

Eric Lee, PhD (University of Oklahoma Health Science Center)
Assistant Professor of Physiology, Pharmacology and Pathology ARCOM

MSB 441: Medical Microbiology/Immunology (MMI)
Spring Semester 2020

4 credit hrs., 48 lectures

Interim course director: Abby Geis, PhD

This course will provide a foundation in both mechanisms of host defense and the major pathogens that cause infectious disease. Broad topics in immunology that students can expect to discuss include the origin and function of various immune cells and tissues and the concerted actions of the innate and adaptive immune systems. The medical importance of how the immune system uniquely targets distinct threats and how it can also cause pathological inflammation and disease will be emphasized. Topics in microbiology that will be introduced include classification by taxonomy and the broad categories of human pathogens, including prokaryotes, viruses, fungi, protozoa, and helminths. The relative significance of each category of pathogen to human health will be emphasized. When appropriate, discussion will encompass factors that contribute to host susceptibility to select immune or infectious diseases and epidemiology of those diseases. Students will be expected to present, participate in discussions at a high level, and demonstrate critical thinking skills.

Ross Longley, PhD (University of Oklahoma)
Professor, Microbiology and Immunology ARCOM

Abby Geis, Ph.D. (Johns Hopkins University)
Assistant Professor, Microbiology & Immunology ARCOM

MSB 461: Medical Ethics and Professionalism

Spring Semester 2020

3 credit hrs., 36 lectures

Co-Course directors: Kenneth Hensley, PhD and Lance Bridges, PhD

This is a capstone course, in which students will evaluate and discuss matters involving scientific integrity, professionalism, and biomedical ethics. Students will conduct comprehensive literature reviews, develop a brief written summary and make a presentation either in the form of a research poster or oral research seminar defending their stance on particular issues from gene therapy to the management of stress. In this course, students will learn to read and critically review peer-reviewed scientific literature, synthesize the current understanding of their chosen topic from multiple perspectives and present the information in a formalized manner.

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Matthew White, PhD (University of Texas Health Science Center/MD Anderson
Cancer Center)
Assistant Professor of Biochemistry, Molecular & Cell Sciences ARCOM

Rakesh K. Singh, B. Pharm., PhD (University of Kansas)
Assistant Professor of Physiology, Pharmacology and Pathology ARCOM