School of Health Professions

Clinical Embryology & Andrology Program
Student Handbook

2015-2017
# TABLE OF CONTENTS

**SCHOOL OF HEALTH PROFESSIONS BACKGROUND** ................................................................. 6

**PRE-MATRICULATION REQUIREMENTS** .................................................................................. 6

**POLICY** .................................................................................................................................. 6

**PROCEDURE** .......................................................................................................................... 6

**GRADING SCALE** .................................................................................................................... 7

**GRADE POINT CALCULATION** .............................................................................................. 7

**INCOMPLETE GRADES** ............................................................................................................. 7

**WITHDRAWALS** ...................................................................................................................... 8

**PROGRESS REVIEW** ............................................................................................................... 8

**GRADE APPEALS** ................................................................................................................... 8

**SATISFACTORY ACADEMIC PROGRESS** ................................................................................. 8

**TRANSFER CREDITS** ............................................................................................................... 9

**EVMS CREDIT DETERMINATION POLICY** ............................................................................. 9

**POLICY** .................................................................................................................................. 9

**PROCEDURE** .......................................................................................................................... 9

**Assigning Credit Hours** ......................................................................................................... 9

**ACADEMIC AND NON-ACADEMIC DEFICIENCIES** .............................................................. 10

**DEFICIENCIES** ....................................................................................................................... 10

**IDENTIFICATION AND REMEDIATION OF DEFICIENCIES** .................................................. 11

**ACADEMIC AND NON-ACADEMIC GRIEVANCE AND APPEAL PROCEDURES** ....................... 11

**WELCOME** ............................................................................................................................. 12

**BRIEF PROGRAM HISTORY** ................................................................................................ 12

**PURPOSE** ............................................................................................................................... 12

**MISSION STATEMENT** .......................................................................................................... 12

**GOALS AND OBJECTIVES** ..................................................................................................... 12

**ACCREDITATION** .................................................................................................................... 13

**KEY PROGRAM CONTACT INFORMATION** ......................................................................... 14

**PROGRAM FACULTY** ............................................................................................................ 15
<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>TECHNICAL STANDARDS</td>
<td>17</td>
</tr>
<tr>
<td>REGISTRATION</td>
<td>19</td>
</tr>
<tr>
<td>COURSE REGISTRATION</td>
<td>19</td>
</tr>
<tr>
<td>STUDENT FINANCES</td>
<td>19</td>
</tr>
<tr>
<td>PAYMENTS</td>
<td>19</td>
</tr>
<tr>
<td>TUITION STATEMENTS</td>
<td>19</td>
</tr>
<tr>
<td>FINANCIAL AID</td>
<td>19</td>
</tr>
<tr>
<td>FINANCIAL AID AND ACADEMIC PROBATION</td>
<td>19</td>
</tr>
<tr>
<td>ATTENDANCE</td>
<td>20</td>
</tr>
<tr>
<td>ONLINE PROCEDURES</td>
<td>20</td>
</tr>
<tr>
<td>EXAMINATION PROCEDURE</td>
<td>20</td>
</tr>
<tr>
<td>REVIEWING SECURE EXAMS</td>
<td>20</td>
</tr>
<tr>
<td>ASSIGNMENT PROCEDURE</td>
<td>20</td>
</tr>
<tr>
<td>GRADES</td>
<td>21</td>
</tr>
<tr>
<td>COURSE SURVEYS AND EVALUATIONS</td>
<td>21</td>
</tr>
<tr>
<td>INSTRUCTOR RESPONSE TIME</td>
<td>21</td>
</tr>
<tr>
<td>CLASS DEEMANOR</td>
<td>21</td>
</tr>
<tr>
<td>EMAIL</td>
<td>21</td>
</tr>
<tr>
<td>DISCUSSION BOARD</td>
<td>21</td>
</tr>
<tr>
<td>TROUBLESHOOTING</td>
<td>22</td>
</tr>
<tr>
<td>GRADING POLICIES</td>
<td>22</td>
</tr>
<tr>
<td>TRANSFER CREDIT</td>
<td>22</td>
</tr>
<tr>
<td>GRADING POLICY</td>
<td>22</td>
</tr>
<tr>
<td>MAKE-UP POLICY</td>
<td>22</td>
</tr>
<tr>
<td>LATE ASSIGNMENTS</td>
<td>22</td>
</tr>
<tr>
<td>INCOMPLETE POLICY</td>
<td>22</td>
</tr>
<tr>
<td>STUDENT PROGRESS</td>
<td>23</td>
</tr>
<tr>
<td>CEA ACADEMIC STANDING, WARNING AND PROBATION</td>
<td>23</td>
</tr>
<tr>
<td>PROFESSIONALISM AND SCHOLARLY REQUIREMENTS</td>
<td>24</td>
</tr>
<tr>
<td>CEA WRITING STYLE</td>
<td>24</td>
</tr>
<tr>
<td>CAPSTONE/THESIS WRITING STYLE GUIDELINES</td>
<td>24</td>
</tr>
</tbody>
</table>
THE EVMS HONOR SYSTEM ........................................................................................................... 24
PLAGIARISM/ TURNTIN PROGRAM POLICY ................................................................................... 25
GRADUATION REQUIREMENTS ......................................................................................................... 26
LENGTH OF TIME TO COMPLETE THE MASTER’S DEGREE ................................................................. 26
GRADUATION ........................................................................................................................................ 26
CEA PROGRAM REQUIREMENTS ..................................................................................................... 27
EVMS LABORATORY SAFETY AND ADDITIONAL TRAINING COURSES .................................................. 27
EVMS SCIENTIFIC MISCONDUCT POLICY ......................................................................................... 27
EVMS STUDENT PUBLISHING POLICY ............................................................................................... 27
CURRICULUM ........................................................................................................................................ 28
COURSE DESCRIPTIONS ..................................................................................................................... 29
BIOCHEMISTRY AND MOLECULAR CELL BIOLOGY ........................................................................... 29
LABORATORY TECHNOLOGY ............................................................................................................... 29
CURRENT TOPICS IN IVF ..................................................................................................................... 30
FEMALE REPRODUCTIVE ENDOCRINOLOGY AND INFERTILITY ......................................................... 30
GAMETES AND EMBRYOS .................................................................................................................. 31
RESEARCH METHODS CAPSTONE/THESIS: STATISTICS ................................................................ 31
RESEARCH METHODS AND THESIS: CAPSTONE/THESIS TOPIC SELECTION AND PROPOSAL ....... 32
MALE REPRODUCTIVE FUNCTION AND DYSFUNCTION .................................................................... 32
IN VITRO FERTILIZATION ................................................................................................................... 33
GENETICS OF REPRODUCTION AND INFERTILITY ....................................................................... 33
CRYOPRESERVATION .......................................................................................................................... 34
ETHICS, SOCIETY, LAW AND ART ..................................................................................................... 34
RESEARCH METHODS AND CAPSTONE/THESIS: RESEARCH AND SCIENTIFIC WRITING .......... 35
PROFESSIONAL SOCIETIES .............................................................................................................. 36
SOCIETY OF ASSISTED REPRODUCTIVE TECHNOLOGY (SART) .................................................... 36
AMERICAN SOCIETY FOR REPRODUCTIVE MEDICINE (ASRM) .................................................... 36
AMERICAN ASSOCIATION OF BIOANALYSTS (AAB) ........................................................................ 36
FAQs .................................................................................................................................................... 37
APPENDICES ......................................................................................................................................... 39
STUDENT CHECKLIST ........................................................................................................................ 40
TRACK AND MASTER’S TOPIC SELECTION FORM ________________________________________ 42
RESULTS OF MS MASTER’S PROJECT PROPOSAL PRESENTATION __________________________ 43
REQUIREMENTS HAVE NOT BEEN MET ________________________________________________ 44
THESIS / DIPLOMA DELIVERY ________________________________________________________ 45
THESIS ACCEPTANCE AND PROCESSING ________________________________________________ 46
M.S. in Biomedical Sciences—Clinical Embryology and Andrology Program __________ 47
Certification for Graduation _________________________________________________________ 47
To be completed by CEA Office _____________________________________________________ 47
Indicate the status of the following: _________________________________________________ 47
CLASS OF 2017 – YEAR 1 ___________________________________________________________ 48
CLASS OF 2017 – YEAR 2 ___________________________________________________________ 49
CEA PROGRAM CURRICULUM ________________________________________________________ 50
SCHOOL OF HEALTH PROFESSIONS BACKGROUND

The EVMS School of Health Professions (SHP) provides an administrative structure for multiple academic programs, including Art Therapy and Counseling (MS), Biomedical Sciences (PhD), Biomedical Sciences Research Master’s (MS), Biotechnology (MS), Laboratory Animal Science (MS), Master of Public Health (MPH), Master of Physician Assistant (MPA), Medical Master’s (MS), Master of Surgical Assisting (MSA), Clinical Embryology and Andrology (MS), and the Virginia Consortium Program in Clinical Psychology (PhD). EVMS serves as the school of record for all programs shown above except Clinical Psychology; other policies and procedures may be applicable for that program based on school of record responsibilities. In addition to the policies and procedures depicted below, each program may have additional grading or other essential requirements that are communicated to students in writing at the initiation of their first semester or at other times as deemed necessary.

PRE-MATRICULATION REQUIREMENTS

POLICY

It is the policy of EVMS that all students accepted into the Schools of Medicine and Health Professions must complete all pre-matriculation requirements, as set forth in the Conditions of Acceptance letter signed by the student, prior to matriculation.

PROCEDURE

The Admissions and Enrollment Office will track all pre-matriculation requirements and will initiate the process to withdraw students who are non-compliant after the date of matriculation, except as set forth below.

If an applicant is accepting an offer of admission within the three week period prior to matriculation, that student will have a three week period from the date the offer is accepted to complete all pre-matriculation requirements. The Associate Dean for Student Affairs will track these requirements for MD students. The applicable Program Director will track these requirements for Health Professions students. At the end of the three week period, the Associate Dean for Student Affairs shall initiate the process to withdraw students who are non-compliant.

No financial aid will be disbursed to any student until all pre-matriculation requirements have been satisfied.

The time frame for completing pre-matriculation requirements may be extended, at the discretion of the Associate Dean for Admissions and Enrollment or Associate Dean of Student Affairs, as applicable. For Health Professions students, the appropriate Health Professions Program Director will also be consulted.
GRADING SCALE

All SHP programs for which EVMS serves as the school of record will use the following grading scale for those courses in which grades affect the Grade Point Average (GPA).

<table>
<thead>
<tr>
<th>Grade</th>
<th>Grade Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4.00</td>
</tr>
<tr>
<td>A–</td>
<td>3.67</td>
</tr>
<tr>
<td>B+</td>
<td>3.33</td>
</tr>
<tr>
<td>B</td>
<td>3.00</td>
</tr>
<tr>
<td>B–</td>
<td>2.67</td>
</tr>
<tr>
<td>C+</td>
<td>2.33</td>
</tr>
<tr>
<td>C</td>
<td>2.00</td>
</tr>
<tr>
<td>C–</td>
<td>1.67</td>
</tr>
<tr>
<td>D+</td>
<td>1.33</td>
</tr>
<tr>
<td>D</td>
<td>1.00</td>
</tr>
<tr>
<td>D–</td>
<td>0.67</td>
</tr>
<tr>
<td>F</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Grades not affecting GPA:

AU = Audit
I = Incomplete
P = Pass
W = Official Withdrawal
WF = Unofficial Withdrawal

A grading structure that is consistent with program or departmental guidelines will be established for each class by the instructor. These requirements, along with the goals and requirements for each course, the nature of the course content, and the methods of evaluation, are communicated to students at the initiation of each course. Programs are responsible for sending grade reports to students at the end of each term.

GRADE POINT CALCULATION

The grade point average is calculated by dividing the accumulated number of grade points earned by the accumulated number of credit hours attempted. Grades of “F” and repeats are included, but official withdrawals, audits, and grades on non–credit courses, non–degree credit courses, and pass/fail courses are not. If a student is required to repeat a course or receives permission from a program director to repeat a course, the grade point average will be calculated using only the repeated course grade and the corresponding point value. However, the original grade assigned for that course will remain on the transcript.

Grades in courses accepted for transfer credit are not counted in the computation of grade point average.

Students must have a cumulative grade point average of 3.00 or higher for graduation. Students falling below the minimum GPA requirement may be placed on probation or suspended in accordance with procedures established below and by each program.

INCOMPLETE GRADES

The grade “I” indicates assigned work yet to be completed in a given course or an approved absence from the final examination. When an instructor assigns a grade of “I,” a written agreement is prepared and signed by the instructor and student that specifies the work remaining to be completed and the time frame for doing so. The work should be completed as soon as possible, but not later than the mid-point of the following grading period/semester unless special written approval is granted by the Course Director and Program Director for extraordinary circumstances. The student must petition the Course Director and the Program Director for such an extension at least two weeks before the end of the agreed upon deadline. Unless an extension has been approved by the Course Director and the Program Director, the “I” will convert to either an “F” or the grade as specified in the written agreement after the mid-point of the semester. An “I” grade may not be changed to a “W” under any circumstances.
WITHDRAWALS

A student can withdraw from a course up until the mid-point of the grading period/semester and receive a W grade. Withdrawal after the midterm is not permitted without special approval by the Program Director. However, in the event of an illness or severe hardship beyond the student's control, the student should submit a written petition for permission to withdraw from the course to the instructor and program director no later than the last day of classes. If permission is granted by the Program Director, a grade of W is recorded. If permission is not granted, then the student cannot withdraw from the class. A student who stops attending classes without withdrawing is assigned a WF grade unless the student's performance was failing, in which case a grade of F will be assigned.

PROGRESS REVIEW

Regular assessment of students and feedback to them is essential to effective teaching and learning. All possible effort should be extended to identify students whose performance is unsatisfactory and establish remedial intervention. Course instructors and program directors will regularly review the academic progress of their designated students and evaluate the overall progress of each student at the conclusion of each grading term and academic year. Each program will establish policies and procedures for completing assessments, communicating results to students, and documenting outcomes. Procedures for addressing performance deficiencies or circumstances that may prohibit students from successfully completing a program are outlined in subsequent pages in the Performance Deficiencies and Probation Procedures. Programs may have additional remediation policies and procedures and students should contact the appropriate program office or director for this information. Program Directors shall provide periodic reports to the Dean of the School of Health Professions that summarize student progress issues for their respective programs.

GRADE APPEALS

Students may appeal or seek remediation of a grade based on the policies and procedures established by the applicable program. Students who desire an appeal or seek remediation of a grade should first address the issue directly with the appropriate course instructor and follow all program specific policies and procedures. If the issue is not satisfactorily resolved with the course instructor, the student may appeal the decision to the Program Director based on program procedures. If the issue is still not resolved, the student may appeal to the Dean of the School of Health Professions.

Additional information regarding policies and procedures not listed in this Handbook, including elective, pass/fail, and audit course options and procedures for evaluating, dropping a course, and reporting of grades vary for each program and will be communicated to students at the initiation of their first semester and other times as deemed necessary.

SATISFACTORY ACADEMIC PROGRESS

All students in the EVMS School of Health Professions are expected to attain a term Grade Point Average of at least 3.0 to be considered in good academic standing and a cumulative GPA of at least 3.0 to graduate. Students who do not meet these criteria are subject to formal warnings, probation and/or dismissal. Students who receive a warning or are placed on probation must demonstrate sufficient academic progress in the following term, as determined by the program director and faculty, to remain in the program. Students on probation who fail to demonstrate academic progress in the following term will be subject to dismissal. The Program Director should consider the extent to which a student is performing at a level necessary to attain the knowledge, skills, and competencies required to succeed in the program, including ability to meet the cumulative GPA and other graduation requirements. All programs must review the academic progress of their students on a regular basis and at such intervals deemed appropriate but not less than once at the end of each grading term.
TRANSFER CREDITS

Transfer of credit may be allowed for course work taken at a regionally accredited institution of higher learning, such as the Southern Association of Colleges and Schools, for courses in which a grade of B (3.0) or higher was received or a passing grade was achieved in a pass/fail course. Doctoral programs may accept a maximum of 12 transfer credits, and master’s programs may accept a maximum of 9 transfer credits. Course grades obtained from another institution will not be counted in the GPA. Programs must establish and publish their criteria for accepting transfer credits as well as their policies on accepting experiential learning, advanced placement, and/or professional certificates toward curriculum requirements. It is the responsibility of each program to determine a student’s comprehension of the requisite material and to ensure that the course work and/or learning outcomes are comparable to that offered by the applicable EVMS program. EVMS assumes responsibility for the academic quality of any course work or credit recorded on the institution’s transcript.

Applicants seeking to transfer academic credits or any other type of learning experience into an EVMS program should follow program procedures, including the submission of transcripts and other detailed information such as syllabi, course descriptions, learning objectives, or other materials that will assist the program in determining equivalence of course requirements. Decisions regarding applicability of transfer courses/credits are made by the Program Director in consultation with the faculty as deemed appropriate. Transfer applicants should contact the program for special application or credential requirements. The following programs for which EVMS serves as the school of record do not accept transfer credits: Art Therapy and Counseling, Laboratory Animal Science, Physician Assistant, Medical Master’s, Surgical Assisting, Clinical Embryology and Andrology.

EVMS CREDIT DETERMINATION POLICY

POLICY

It is the policy of Eastern Virginia Medical School (EVMS) that credit hours awarded for courses and programs be awarded in conformity with commonly accepted practices in higher education and accreditation policies. This policy applies to both on-site and distance courses and shall also be published in School of Health Professions program-specific student handbooks.

PROCEDURE

Course syllabi shall be developed by the Course Director, reviewed by the Program Director, and submitted to the School of Health Professions Curriculum Committee for review and approval to ensure that credit hours are determined correctly and that student workload is proportional to credit hours awarded. Credit hours for all courses, on-site and asynchronous, shall be determined using the following calculus:

ASSIGNING CREDIT HOURS

SHP programs use the calculus in the table below to assign course credit hours.

<table>
<thead>
<tr>
<th>Type of Course</th>
<th>Credit/Contact Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture, Seminar, Independent Study</td>
<td>1 credit = 15 contact hours</td>
</tr>
<tr>
<td>Laboratory</td>
<td>1 credit = 30 contact hours</td>
</tr>
<tr>
<td>Clinical Rotations, Internship</td>
<td>1 credit = 80 contact hours</td>
</tr>
</tbody>
</table>
EVMS uses the following calculus for determining credit hour equivalency for online, asynchronous courses, which expects students to dedicate 135 hours per semester for a 3-credit course. Hours are adjusted proportionately up or down based on the credits per course.

<table>
<thead>
<tr>
<th>Semester Format</th>
<th>Credit Hours</th>
<th>Total Hour Commitment</th>
<th>Weekly Course Time Commitment</th>
</tr>
</thead>
<tbody>
<tr>
<td>16-week</td>
<td>3</td>
<td>135</td>
<td>8.4 hours</td>
</tr>
<tr>
<td>15-week</td>
<td>3</td>
<td>135</td>
<td>9 hours</td>
</tr>
<tr>
<td>13-week</td>
<td>3</td>
<td>135</td>
<td>10.4 hours</td>
</tr>
<tr>
<td>12-week</td>
<td>3</td>
<td>135</td>
<td>11.3 hours</td>
</tr>
<tr>
<td>10-week</td>
<td>3</td>
<td>135</td>
<td>13.5 hours</td>
</tr>
<tr>
<td>9-week</td>
<td>3</td>
<td>135</td>
<td>15 hours</td>
</tr>
<tr>
<td>8-week</td>
<td>3</td>
<td>135</td>
<td>16.9 hours</td>
</tr>
<tr>
<td>6-week</td>
<td>3</td>
<td>135</td>
<td>22.5 hours</td>
</tr>
</tbody>
</table>

This information is published in the School of Health Professions program-specific student handbooks.

**ACADEMIC AND NON-ACADEMIC DEFICIENCIES**

Procedures for addressing academic and non-academic deficiencies that may impede student progress or prohibit students from successfully completing a program are defined below, including student appeals to ensure appropriate due process. These procedures apply to programs in which EVMS is the school of record.

**DEFICIENCIES**

Deficiencies, which may result in probation or dismissal/termination of a student, include both academic and non-academic areas. The Dean of the School of Health Professions or designee may intervene to address academic and non-academic deficiencies and may impose such remedies as are determined to be in the best interests of EVMS.

Academic Deficiencies include but are not limited to an inadequate knowledge base; a lack of information gathering ability, problem solving difficulties, poor clinical and technical skills; or errors in judgment.

Non-Academic Deficiencies include but are not limited to any action or behavior that is considered unacceptable to the training program faculty; poor professional relationships; moral and ethical values unacceptable to the profession; failure to comply with the standards of student behavior including the Code of Student Conduct set forth herein, the rules, regulations and bylaws of EVMS and/or affiliated practicum sites or the laws which govern the healing arts in the Commonwealth of Virginia; and/or a lack of abilities and talents that are necessary for the performance of expected duties for that health profession.

Each academic program has its own criteria for determining when and how to intervene on matters of academic and non-academic deficiencies. Some may require a written or verbal notification and/or warning from an instructor, advisor, or Program Director to convey concern about student performance and/or to inform the student of the risk of probation unless performance improves. In all programs, a student placed on probation will be informed in writing and his/her performance will be monitored. The written notification must specify if termination in the educational program is a potential outcome of the probationary status. Interventions typically follow the progressive hierarchy of warning, probation, and dismissal.

Probationary status will be defined by the program's faculty, and the terms of probation must be signed by the Program Director and the student. While on probation, the student will be provided close faculty supervision and may or may not be given credit for the time period during which the probationary status is in effect. If the probationary
period is not creditable toward the required time for the educational program, an extension of training time (within
timeliness for the degree) may be considered at the discretion of the program director.

If a student’s conduct compromises acceptable standards of patient care or jeopardizes the welfare of patients under
his/her care, the Program Director has the option of immediately suspending the student from clinical duties until
such time as an appropriate investigation of the allegations can occur. The Dean of the School of Health Professions,
the Associate Dean of the School of Health Professions, the Associate Dean for Student Affairs, and the Registrar
must all be notified when a student is placed on probation.

IDENTIFICATION AND REMEDIATION OF DEFICIENCIES

Faculty and other professional staff will promptly notify the Program Director of areas of concern regarding a student’s
academic progress, professional behavior and development. Upon notification of a potential problem, the Program
Director or designee will investigate the report and develop a remediation plan if warranted. The Program Director or
designee will meet with the student to discuss areas of concern, including development of a remediation plan with
clear goals and objectives, a specific time frame for completing the plan, and potential outcomes. The plan will be
signed by the Program Director and the student. Follow up meetings will occur with the student, key program faculty,
and the Program Director. Program faculty and Program Directors should use their reasonable judgment in
documenting academic and non-academic student issues including remediation plans, progress reports, and
supervision meetings. Written documentation is required if a student receives a warning, is placed on probation, or is
dismissed from the program.

ACADEMIC AND NON-ACADEMIC GRIEVANCE AND APPEAL PROCEDURES

Students in the School of Health Professions have the right to due process involving grievances and appeals:

The student should discuss the grievance with his or her Program Director. If the grievance is not resolved, a student
may file a written appeal to the Dean of the School of Health Professions within seven days of the student’s
notification of the Program Director’s decision.

Upon receipt of the appeal, the Dean will notify the Registrar accordingly. The Dean or a designee will review all
pertinent material and meet with the student. The Dean may convene a Grievance/Appeals Committee composed of
Program Directors, faculty, students, and/or chairs of departments not directly involved in the grievance. All
testimony, evidence, and witnesses relevant to the appeal shall be made available to this committee. The student
has the right to appear before the committee, present testimony and such witnesses or evidence as is deemed
relevant by the committee. The student shall not have the right to be represented by counsel at these committee
meetings. The Committee will submit its recommendations to the Dean after the review is completed.

The Dean will notify the student within ten days of his/her decision. The decision may include reinstatement,
retention, probation, termination, suspension, special academic assignments, or other interventions deemed
appropriate to the situation. The judgment of the Dean concerning the grievance shall be final and binding on all
parties with the exception of recommending the termination of a student’s participation in an academic program.

In the case of termination from an academic program, the student may file a written appeal to the EVMS
President/Provost within five days of the student’s notification from the Dean of the School of Health Professions.
The President/Provost will review all pertinent material and notify the student within ten days of receipt of the appeal
of his/her decision. The decision of the President/Provost is final.
**WELCOME**

The Program Directors, Faculty, Technical and Administrative support staff welcome you to the Clinical Embryology and Andrology Program at EVMS and the Jones institute for Reproductive Medicine. This student handbook contains information and policies and procedures for EVMS, the School of Health Professions, and is your guide to the specific CEA program policies and procedures.

**BRIEF PROGRAM HISTORY**

Eastern Virginia Medical School (EVMS), through its prestigious Howard and Georgeanna Jones Institute for Reproductive Medicine, is a pioneer in assisted reproductive technology (ART). In 1981, the first in vitro fertilization baby in the USA was born through the efforts of the Jones Institute. The Jones Institute is widely acknowledged to be an international leader in clinical and scientific research in ART, and has trained many prominent physicians and scientists.

EVMS is the largest biomedical research institution in southeastern Virginia as well as the area’s largest medical center complex. In addition to the training of medical and health professions students, EVMS has a number of research institutes and clinical programs that interface with the basic science departments. The integration of clinical and basic sciences is an important component of the biomedical sciences graduate programs.

The Clinical Embryology and Andrology Program is administered from within the School of Health Professions. The Program Director is Jacob Mayer, PhD and Associate Director, Helena Russell, MS.

**PURPOSE**

**MISSION STATEMENT**

The mission of the EVMS Clinical Embryology and Andrology Program is to provide an educational program dedicated to academic excellence that provides the essential knowledge and skills to produce competent clinical embryologists and andrologists.

**GOALS AND OBJECTIVES**

The Program is designed for clinical embryologists, andrologists, physicians, and others involved in the practice of ART. The program goal is to provide multidisciplinary graduate level education and training in current technology to meet the ever changing demands in clinical and research aspects of assisted reproductive medicine embryology and andrology. This program was designed to create a bridge between clinical, laboratory and molecular reproductive medicine and the basic sciences.

To accomplish the program goals, the program has established the following objectives:

- Understand the relevance and application of advances in biochemistry, cell biology and genetics as they apply to ART
- Learn the reproductive endocrinologists, embryologists and andrologists perspectives for diagnosis and treatment of infertility
- Apply best practices in clinical embryology and andrology laboratory, and reproductive medicine research
- Prepare and adapt for new technologies as well as new regulatory guidelines
- Strengthen skills in critical reading and interpreting the research literature
- Develop independent synthesis, analysis, and study design skills by conducting a capstone or thesis project
- Anticipate future laboratory and personnel requirements
• Understand biomedical ethical as well as legal principles and patient privacy issues as they relate to clinical IVF and medical research

**ACCREDITATION**

Eastern Virginia Medical School is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award the Doctor of Medicine degree, Masters' degrees, Doctoral degrees, and Certificates. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, GA 30033-4097 or call 404-679-4500 for questions about the accreditation of Eastern Virginia Medical School.
KEY PROGRAM CONTACT INFORMATION

The Clinical Embryology and Andrology Master’s Program will be administered according to the policies established in the program handbook. The program will be administered by the Program Director, the Associate Director, the Chairs of the Curriculum and Admissions Committee, the Dean for the School of Health Professions and the Program Administrator of Clinical Embryology and Andrology.

<table>
<thead>
<tr>
<th>NAME</th>
<th>ADDRESS</th>
<th>PHONE</th>
<th>EMAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jacob Mayer, PhD</td>
<td>Eastern Virginia Medical School</td>
<td>757-446-8482</td>
<td><a href="mailto:mayerjf@evms.edu">mayerjf@evms.edu</a></td>
</tr>
<tr>
<td>Program Director</td>
<td>The Jones Institute, Room 421</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professor</td>
<td>601 Colley Avenue</td>
<td>Norfolk, VA 23507</td>
<td></td>
</tr>
<tr>
<td>Helena Russell, MS</td>
<td>Eastern Virginia Medical School</td>
<td>757-446-8482</td>
<td><a href="mailto:russelhi@evms.edu">russelhi@evms.edu</a></td>
</tr>
<tr>
<td>Associate Program Director</td>
<td>ERB, Room 320</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assistant Professor</td>
<td>651 Colley Avenue</td>
<td>Norfolk, VA 23507</td>
<td></td>
</tr>
<tr>
<td>Brielle Ashley</td>
<td>Eastern Virginia Medical School</td>
<td>757-446-5051</td>
<td><a href="mailto:ashleybe@evms.edu">ashleybe@evms.edu</a></td>
</tr>
<tr>
<td>Distance Media Manager</td>
<td>ERB, Room 334</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>651 Colley Avenue</td>
<td>Norfolk, VA 23507</td>
<td></td>
</tr>
<tr>
<td>Kyle Zeltmann</td>
<td>Eastern Virginia Medical School</td>
<td>757-446-0588</td>
<td><a href="mailto:zeltmakm@evms.edu">zeltmakm@evms.edu</a></td>
</tr>
<tr>
<td>Distance Media Specialist</td>
<td>ERB, Room 335</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>651 Colley Avenue</td>
<td>Norfolk, VA 23507</td>
<td></td>
</tr>
<tr>
<td>Chanel A. Horne</td>
<td>Eastern Virginia Medical School</td>
<td>757-446-0365</td>
<td><a href="mailto:horneca@evms.edu">horneca@evms.edu</a></td>
</tr>
<tr>
<td>Administrative Support</td>
<td>ERB, Room 332</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coordinator</td>
<td>651 Colley Avenue</td>
<td>Norfolk, VA 23507</td>
<td></td>
</tr>
</tbody>
</table>
PROGRAM FACULTY

The graduate faculty of the Clinical Embryology and Andrology Master’s Program will be certified in accordance with the general criteria contained in the policies for the certification of graduate faculty of Eastern Virginia Medical School. These criteria include research, teaching performance at the advanced level, efforts to secure funding, and attainment of necessary graduate degrees.

FULL TIME EVMS FACULTY

Alfred Z. Abuhamad, MD  Professor/Department of Obstetrics and Gynecology
Silvina Bocca, MD, PhD  Assistant Professor/Department of Obstetrics and Gynecology
Frank J. Castora, PhD  Associate Professor/Department of Physiological Sciences
Susan A Gitlin, PhD  Instructor/Department of Obstetrics and Gynecology
Craig Goodmurphy, PhD  Associate Professor/Department of Anatomy
Yuliya Dobrydneva, PhD  Assistant Professor/Department of Physiological Sciences
Howard W. Jones, Jr., MD  Professor Emeritus/Department of Obstetrics and Gynecology
Jacob F. Mayer, PhD  Professor/Department of Obstetrics and Gynecology
Mahmood S. Morshed, PhD  Associate Professor/Department of Obstetrics and Gynecology
Sergio Oehninger, MD, PhD  Professor/Department of Obstetrics and Gynecology
Helena Russell, MS  Assistant Professor/Health Professions/Department of Obstetrics and Gynecology
Laurel Stadtmauer, MD, PhD  Associate Professor/Department of Obstetrics and Gynecology
<table>
<thead>
<tr>
<th>Name</th>
<th>Position and Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yueqin Zhao, PhD</td>
<td>Assistant Adjunct Faculty/School of Health Professions EVMS</td>
</tr>
<tr>
<td>Marlene Angle, PhD</td>
<td>Laboratory Director, Laurel Fertility Center, San Francisco, CA</td>
</tr>
<tr>
<td>Larry Hultgren, PhD</td>
<td>Professor/Department of Philosophy, Virginian Wesleyan College, Norfolk, VA</td>
</tr>
<tr>
<td>Zsolt P. Nagy, MD, PhD</td>
<td>Scientific and Laboratory Director, Reproductive Biology Associates, Atlanta, GA</td>
</tr>
<tr>
<td>Hang Yin, PhD</td>
<td>Assistant Professor, Center for Reproductive Medicine and Infertility, Cornell University, New York, NY</td>
</tr>
<tr>
<td>Susan Crockin, J.D.</td>
<td>Assistant Adjunct Faculty/ Department of Obstetrics and Gynecology EVMS</td>
</tr>
<tr>
<td>Jennifer L. Winters, Ph.D.</td>
<td>Assistant Adjunct Faculty/School Health Professions EVMS</td>
</tr>
<tr>
<td>Michan Myer, MA</td>
<td>Teacher and Tutor/School of Health Professions EVMS</td>
</tr>
</tbody>
</table>
TECHNICAL STANDARDS

The abilities and skills candidates and students must possess in order to complete the education and training associated with Masters Program in Clinical Embryology and Andrology are referred to as “Technical Standards.” These abilities and skills are essential for clinical Laboratory practice as an Embryologist and/or Andrologist.

1.0 Observation Skills Technical Standard

1.01 Demonstrate sufficient attention and accuracy in observation skills (visual, auditory, and tactile) in the lecture hall, laboratory, and/or online settings. Indicators include but are not limited to accurate visualization and discrimination of text, numbers, patterns, graphic illustrations, and other imaging texts.

2.0 Communication Skills Technical Standard

2.01 Demonstrate effective communication skills with health care professionals, and with people of varying cultures, ethnicities and personalities.

2.02 Indicators include, but are not limited to, these examples:
   a. Clear, efficient, and intelligible articulation of spoken English language.
   b. Legible, efficient, and intelligible written English language.
   c. Accurate and efficient English language reading skills.
   d. Accurate and efficient, expressive and receptive communication skills.
   e. Ability to accurately follow directions (oral and written).

3.0 Critical Reasoning Skills Technical Standard

3.01 Demonstrate critical reasoning skills, including, but not limited to, intellectual, conceptual, integrative, and quantitative abilities.

3.02 Indicators include, but are not limited to, these examples:
   a. Demonstrate ability to measure, calculate, reason, analyze, integrate, and synthesize information.
   b. Demonstrate ability to acquire, retain, and apply new and learned information.

4.0 Motor And Sensory Function Technical Standard

4.01 Demonstrate sufficient motor and sensory function to perform typical clinical laboratory duties.

4.02 Indicators include, but are not limited to, these examples:
   a. Functional and sufficient sensory capacity (visual, auditory, and tactile) to use laboratory equipment and perform procedures.
   b. Execute motor movements that demonstrate safety and efficiency in the various learning settings (i.e., classroom, online and laboratories).
   c. Physical stamina sufficient to complete the online didactic and some laboratory study, which will include prolonged periods of sitting.

5.0 Behavioral And Social Attributes Technical Standard
5.01 Demonstrate the behavioral and social attributes vital to participation in a professional program and service as a practicing laboratory professional.

5.02 Indicators include, but are not limited to, these examples:

a. Possess the emotional health required for full utilization of mental faculties (judgment, orientation, affect, and cognition).

b. Ability to develop mature and effective professional relationships with faculty, patients, the public, and other members of the health care team.

c. Possess personal qualities that facilitate effective therapeutic interactions (compassion, empathy, integrity, honesty, benevolence, confidentiality).

d. Demonstrate impartial motives, attitudes, and values in roles, functions, and relationships.

e. Ability to monitor and react appropriately to one’s own emotional needs and responses.

f. Display appropriate flexibility and adaptability in the face of stress or uncertainty associated with clinical encounters and clinical environments.

g. Compliance with standards, policies, and practices set forth in the EVMS Student Handbook and the program handbook.
REGISTRATION

COURSE REGISTRATION

Students will register for courses six weeks prior to the start of a new semester. This registration process will take place in the myEVMS portal by clicking on the VZ Registration link. Once the student has logged into the portal and clicks on the link, a registration page will display. Click all of the course boxes listed for the semester and press submit. A confirmation email will be sent to the student’s EVMS email account. The registration will follow with an invoice that will be sent by email to the student.

STUDENT FINANCES

The EVMS Financial Services office will mail an invoice on month prior to the start of each semester. Your first invoice will include tuition and student fees less your acceptance deposit.

PAYMENTS

Tuition payments for the Clinical Embryology and Andrology Master’s Program must be paid by the first day of each semester, based on the total number of credit hours for which a student has enrolled and is subject to change at any time. Please contact the Financial Office at 757-446-6067 or by email WilliaDJ@EVMS.EDU if you do not receive a tuition invoice.

TUITION STATEMENTS

You can access your financial statements at any time online using the myEVMS portal: https://myportal.evms.edu. If you have any questions or do not receive an invoice, please contact the Finance Office at 757-446-6067 or by email WilliaDJ@EVMS.EDU.

FINANCIAL AID

To receive financial aid in the form of student loans you must be registered for at least six (6) credit hours per semester. Sources of financial aid are available to the Clinical Embryology and Andrology Master’s Program students from the Financial Aid Office at Eastern Virginia Medical School: http://www.evms.edu/financial-aid/office-of-financial-aid.html. Financial aid officers at Eastern Virginia Medical School are approved for processing various Federal and State student loan applications. Regulations and availability of these loans change from year to year, therefore, current information and applications should be sought from the institutional financial aid officers. Students should understand that any awards or loans are given only to full-time students who continue in good academic standing. Financial aid information can be obtained by contacting the Financial Aid Office: 757-446-5804 or email finaid@evms.edu.

FINANCIAL AID AND ACADEMIC PROBATION

If a student is placed on academic probation eligibility to receive financial aid will be affected.
ATTENDANCE

Once the semester begins, the students will be notified of new course openings. It is a requirement for all distance students to log into their new courses the first week of the course. Information about the course schedule, such as start and stop dates, is available in this handbook (Program Schedule), the CEA Orientation Course and the CEA Class Calendar. Failure to log into a course and miss important deadlines may lead to withdrawal from a course.

ONLINE PROCEDURES

This section includes the Course Policies and Procedures that explain how different aspects of online courses are handled.

EXAMINATION PROCEDURE

Examinations and quizzes will be taken using ExamSoft software that will be provided to you. Due to the differing time zones, specific time slots will be allocated for each online assessment based on Eastern Standard Time (EST). Each instructor may vary the exam format, e.g., multiple choice questions, short answer, or essay. Your exams may be timed with a limit of 1-3 hours or take home with a limit of 2-4 days. You will be notified in advance of the examination dates and format. Please refer to individual course sites for detailed information.

You are never allowed to use lecture materials, online resources, reading materials, the instructor’s notes, or your own personal notes during examinations or quizzes unless otherwise indicated. You are also not allowed to ask anyone for help during an exam unless it is of a technical nature. Please contact Examsoft technical support by phone (866) 429-8889, website www.examsoft.com or email support@examsoft.com between 8:30am until 8:30pm EST if you have difficulty with your computer or download/upload problems. For clarification of the format or procedural questions of any kind please contact the Distance Learning Office at distancelearning@evms.edu or (757) 446-5051 during normal business hours.

Depending on the nature of the a technical issue encountered while attempting to take a timed assessment follow this guideline: 1) cannot open your exam file, wait until the next business day and contact the Distance Learning Office; 2) your computer shuts down during an exam, quickly turn your computer back on you should be allowed back into the exam after the computer boots up; 3) if you are not allowed back in contact the support numbers listed at the start of the exam; 4) cannot upload your exam file, notify your program office course director and contact exam soft during regular work ours 8:30 am to 8:30 pm Monday thru Friday.

Take home exams are given occasionally; you will be given detailed instruction at the time the exam is released about what resources you should use during the take home exam. Please be aware that you may not ask anyone for help in answering the questions unless it is of a technical, procedural or clarifying nature. In this type of exam you will be asked for a detailed bibliography and the document will be checked for plagiarism electronically.

REVIEWING SECURE EXAMS

Because of the secure nature of the exams you will take, they will not be released to you for review. If you have questions or would like to discuss the items you may have answered incorrectly, you must set up a time with the appropriate Course Director to meet in an Adobe Connect Meeting space. This will allow you to review the items you missed and discuss any concerns you may have regarding the correct answers. If this does not resolve the issue, you must set up a time with the Associate Program Director to meet in an Adobe Connect Meeting space.

ASSIGNMENT PROCEDURE

The deadlines for submitting assignments will be posted on Blackboard for each course. The assignments locations must be used for submission of all projects, reports, and papers—never email your assignments. Always submit your
assignments in the format requested by the instructor, most typically MS Word; others will be specified. Also, **always include your last name in the file name and put your name on each and every page.**

**GRADES**

Grades for assignments and exams will be posted in the Blackboard course site within two weeks after the assessment or assignment deadline except where indicated. Also, within a two-week period after the end of a course and after the course survey or evaluation has been completed by all students, the course grades will be posted. If you have not received a grade for an assignment, exam or course within a two week period, please contact the Course Director to report the problem. If you do not get a response contact the Associate Director of the program russelhi@evms.edu.

**COURSE SURVEYS AND EVALUATIONS**

We **require** all students to fill out an evaluation or survey for each and every course. These are anonymous questions that evaluate the course and instructors. They will be posted at the end of the final exam window using ExamSoft and an email notification will be sent. Please take a few minutes to complete the forms. As soon as the Course Evaluation Surveys are complete, your grades will be released.

**INSTRUCTOR RESPONSE TIME**

Instructors normally check messages once per day and respond within 48 hours. Feedback on assignments is usually provided within two weeks of receipt. If there are any concerns about missed emails or no response, please contact the appropriate Course Director. For any further concern please contact the Associate Director of the program russelhi@evms.edu.

**CLASS DEMEANOR**

Students are expected to interact in a professional demeanor with classmates, faculty, and staff, be prompt in attending Internet meetings, be patient in online interactions, and follow through on their individual contributions to group assignments. Inappropriate language, dissension, or disruption will be removed from any web posting and disciplinary action may be taken.

**EMAIL**

Only your EVMS email will be used for the duration of the program. Email may be sent from within Blackboard but it will use your EVMS email account as the sending account. Information that you need to convey to the instructor or requests for an appointment are best sent via EVMS email.

**DISCUSSION BOARD**

The Discussion Board, Wiki, Blogs and Journal Postings in Blackboard are types of interactions where students and faculty can communicate with each other. Discussion Boards will be read by everyone in the class. Wiki assignments are typically group projects all members of the class will have access to, Blogs are similar to Discussion Boards where all class members will have access and Journal Postings are only available to you and your instructor. You will be responding to questions posted by the instructor, members of your group or each member of the class. All of these types of assignments will typically have a grade associated with them. Please check to make sure you understand the timing of posts, how many posts, the types and depth of the post being requested so that you may get full credit for the assignment.

Typically each course will have a general ungraded Discussion Board where you may ask for clarification of the reading materials or ask why a treatment was prescribed in the clinical area. If you have a question related to something you read, chances are someone else in the class does also. If you have posted something and you are not getting a reply, most likely no one is aware that you have posted a question. Please report this to the Course Director and appropriate action will be taken to notify others.
Please be aware of netiquette when making a post. Be respectful of each other and your faculty, avoid texting short hand, or in all caps and please behave in a professional manner.

TROUBLESHOOTING

If you cannot log into Blackboard, My Portal EVMS, the EVMS Library or access your webmail, contact the Academic Computer Center (ACC), 757-446-5871, comphelp@evms.edu. If you are having difficulty saving or submitting the exam, call the Distance Learning and Instructional Technology Office Help Desk 757-446-5051 during normal business hours, or email distancelearning@evms.edu any time or ExamSoft support from 8:30 am until 8:30 pm EST: 866-429-8889 or support@examsoft.com. After hours contact the on call contact numbers in the order indicated at the beginning of the exam in the instruction window.

GRADING POLICIES

TRANSFER CREDIT

Although EVMS School of Health Profession transfer credit policy states that transfer credits are accepted CEA is not a program that will accept credits from other institutions.

GRADING POLICY

This section specifies the general grading policies and procedures used by all of the health professions programs. In addition to the policies listed here, each program may have additional requirements that are communicated to students in writing at the initiation of their first semester. Final grades at the end of each term are assigned according to the EVMS School of Health Professions grading scale.

MAKE-UP POLICY

If you are unable to meet the time frame for submission of exams or other work, you must make prior arrangements with the Course Instructor or Course Director. Failure to do this will result in a zero grade for that test or assignment. It is important to post Discussion Board assignments in a timely manner because your classmates need your information and feedback to complete their assignments. You must discuss prioritization of submissions with your individual instructor.

LATE ASSIGNMENTS

Assignments must be submitted on or before their due date. EVMS/Blackboard server problems are not an excuse for late papers. If you are unable to connect to the server you should contact the Distance Learning Media Specialist or Associate Program Directors immediately to determine how to remediate the technical issue.

INCOMPLETE POLICY

When an instructor assigns a grade of “I,” a written agreement is prepared and signed by the instructor and student that specifies the work remaining to be completed and the time frame for doing so. The work should be completed as soon as possible, but not later than the mid-point of the following grading period/semester unless special written approval is granted by the Course Director and Program Directors for extraordinary circumstances. The student must petition the Course Director and the Program Directors for such an extension at least two weeks before the end of the agreed upon deadline. Unless an extension has been approved by the Course Director and the Program Director, the “I” will convert to either an “F” or the grade as specified in the written agreement after the mid-point of the semester. An “I” grade may not be changed to a “W” under any circumstances.

In the case of the Research Methods and Capstone/Thesis course at the end of Semester 4, if satisfactory work toward the completion of the thesis has been accomplished, the student will receive a grade for the course based on meeting deadlines for capstone/thesis project completion. If at the end of the term it is determined that adequate
progress has not been made, the student will be given an “II”. An incomplete form must be filled out and signed by the Course Director, the student and the Program Directors. This II grade does not expire the following semester as long as the student has been granted extensions to continue working on their capstone/thesis projects.

**STUDENT PROGRESS**

Student progress in this program is monitored at the individual course and semester levels. Progress is evaluated at the course level during and at the end of a course by the Course Director. If student performance falls below a level that is acceptable, the Course Director will issue a written warning which is sent to the Program Directors as well as the student. This warning should alert the student to problems that should be remedied immediately. Once a student has been issued a warning they must contact the Associate Program Director to discuss ways to remedy the situation. Communication between the Course Director, Program Directors and the student will be established to discuss options. The Program Directors will meet in the middle and at the end of each semester with individual Course Directors as needed to evaluate student progress at the course level. At the end of the semester, the student GPA will be evaluated by the Program Directors. Since the students in the Clinical Embryology and Andrology Master’s Program will be required to achieve a cumulative GPA of 3.00 or better to obtain a graduate degree, this standard must be met each semester.

**CEA ACADEMIC STANDING, WARNING AND PROBATION**

1. Students are considered to be in good academic standing if their term and cumulative GPA is 3.00 or greater.
2. If a student’s term or cumulative GPA falls below 3.00, a written warning will be issued. Students who receive a warning must increase their cumulative GPA to 3.00 or higher by the completion of the following semester, or they will be placed on academic probation.
3. Students placed on academic probation must achieve a term GPA of 3.00 or higher by the completion of the following semester, or they will be subject to dismissal. Students on probation who achieve a term GPA of 3.00 or higher, but whose cumulative GPA is below 3.00, may remain on probation for one additional semester.
4. No student may remain on probation for more than two consecutive semesters. Any student who fails to attain a cumulative GPA of 3.00 or higher after two semesters of probation will be subject to dismissal from the program.
5. Students receiving a grade of C- or below in any course may be asked to retake the course or part of the course based on a decision by the Course and Program Directors. Most courses are taught only once a year, which may mean taking the course or a part of the course with the following cohort of students.
6. Any student receiving the grade of a C- in two courses will be subject to dismissal from the program.
7. The Program will make every reasonable effort to notify students of their academic status. A letter is mailed to each student placed on academic warning, probation or dismissal. However, it is the responsibility of every student to monitor their academic progress, and to check with the Associate Program Director if there are any questions about his or her academic status.
8. A student placed on academic warning or probation will be contacted by the Associate Program Director to devise and discuss an academic improvement plan. This plan will be followed during the coming semester. If warning or probation continues the Associate Program Director and the student will meet to discuss and devise an additional plan until the student is removed from warning or probation or additional actions are taken as described above.

*When a student is placed on academic probation their eligibility to receive financial aid may be affected.*
PROFESSIONALISM AND SCHOLARLY REQUIREMENTS

CEA WRITING STYLE

This program uses American Medical Association (AMA) Manual of style formatting and citation for all assignments. If you have a question about formatting that you need help with that is not covered elsewhere, please consult the AMA Style Guide, 10th Edition. (http://www.amamanualofstyle.com/).

CAPSTONE/THESIS WRITING STYLE GUIDELINES

This CEA EVMS style and format guideline should be followed to construct your capstone or thesis projects, which must be prepared to a professional standard. The final section of this guide includes a copy of the capstone/thesis template to aid you in formatting your final master’s project; a file containing these templates are also available in the RMCT Course site in the Master’s Project Folder. As soon as your advisor, capstone/thesis course director or the writing tutor recommends, you should start using the template. If you have a question about formatting that you need help with that is not covered in the EVMS manual, please consult the AMA Style Guide, 10th Edition (http://www.amamanualofstyle.com/).

THE EVMS HONOR SYSTEM

The students, faculty, and administration of EVMS join together in support of the EVMS Honor Code for the purposes of (a) providing an atmosphere of mutual trust, concern, and respect; (b) fostering honorable and ethical behavior; and (c) cultivating lifelong professional conduct.

Any action indicating lack of integrity or dishonesty in academic matters is considered a violation of academic ethics and the Honor Code. Such offenses include, but are not limited to, lying, stealing, engaging in or attempting to engage in cheating, plagiarism, sabotage, falsifying or manipulating data, or knowingly passing off work of another as one’s own. Any student who fails to abide by the Honor Code or live up to its principles is subject to disciplinary action by the Honor Court. All students are obligated to support the Honor Code and report any violation thereof to the Honor Council. Each student subscribes to the Honor Code by signing in writing his/her support at the time of matriculation.

As a student in the CEA program you are required to sign the EVMS honor code document and to abide by the EVMS honor code outlined in the EVMS student handbook. If you are ever in doubt about what is permitted or not permitted in the online program during testing, assignments, writing or take home exams, please read carefully the instructions for the particular assessment or assignment. If you are still in doubt, email or call your professor or the program associate director for clarification.

To completely understand what we consider plagiarism, the following is our definition: (1) submitting work (or a part thereof) that belongs to another person or has been written by someone other than you; (2) copying from a source without proper acknowledgment, quotation marks, or both, and (3) paraphrasing from a source without proper acknowledgment.

The simplest way to prevent plagiarism is to maintain proper attribution and citation techniques. As you write academic papers, you must remember to conscientiously attribute ideas and quotes when referring to the writings of others. The format in which you refer to another’s work will depend on the style guide preferred by the department offering your course. Your instructor will verify the style guide you should be using.

In view of the fact that each student, has signed an honor pledge, it follows that each piece of work submitted by a student during the program is to be his or her own work unless prepared under alternate conditions specified by the faculty member in charge of the course. Enforcement of the Honor Code in the classroom and online is a
responsibility which is shared by faculty and students. Instructors may, at their discretion and with the help of the student, exercise the option of identifying proctors for examinations.

PLAGIARISM/ TURNITIN PROGRAM POLICY

Plagiarism can best be defined as stealing and passing off the ideas and/or exact words of another as your own. Unintentional plagiarism, where the plagiarism is the result of ignorance, poor writing skills, or mistakes in writing up citations in early drafts, is forgivable.

Basically, if you submit a final draft to an instructor or to a journal for publication with the words or ideas of another person consciously copied with or without citation, then you are guilty of plagiarism.

Thus, students in this program will be trained to:
- Understand proper ways to cite and use material from others’ work.
- Know the differences between citation, quotation, and plagiarism
- Be able to use the program Turnitin to assess and correct unintentional plagiarism before submitting their final drafts.
GRADUATION REQUIREMENTS

LENGTH OF TIME TO COMPLETE THE MASTER’S DEGREE

It is expected that students in the Clinical Embryology and Andrology Master’s Program will be able to complete their requirements in two (2) calendar years. If the student has not completed the degree requirements at the end of the standard two-year period and they anticipate non-completion by the 90-day post-graduation cutoff, the student must submit a written plan for completion of the outstanding requirements which is due by the third week in May of their graduation year. This petition must be approved by the student’s advisor and the program directors. While completing their requirements students must maintain continuous enrollment in the program. This process is started by registering for an additional course by the 3rd week in May of their original graduation year. All requirements for the Biomedical Sciences Clinical Embryology and Andrology Program must be completed within three (3) calendar years from the time the student is matriculated into the program. In unusual circumstances, extensions may be granted by the Program Directors.

GRADUATION

EVMS confers formal academic degrees at an annual graduation ceremony to students in degree granting programs. All candidates for academic degrees, who qualify during a given academic year, will be graduated at this ceremony regardless of the actual completion date of the degree requirements. Students may participate in commencements while still completing requirements however they will be presented with an empty diploma folder during the ceremony. The diploma will be sent after all degree requirements are completed. In order to participate in graduation all degree requirements must be completed within 90 days after the date of graduation. The Program Directors and the capstone/thesis advisor must see that all requirements have been completed or that adequate progress has been made (including the master’s project) one month prior to graduation or the student will not be approved to attend commencements. The student must petition for approval to attend graduation one month prior in the third week of April if all requirements have not been met. (See appendices for appropriate forms).

The ceremony is conducted on the third Saturday in May. Caps and gowns for distance learning students are distributed at the day before graduation at the graduation practice session at Scope Auditorium. A line-up sheet will also be given to inform graduates of the order of procession. Assistance will be provided for any questions or concerns.

Commencement exercises are part of a larger academic tradition. Commercial activity is incompatible with these exercises. Such activities are appropriately conducted during the rehearsal or at class banquets. Any public displays of graduation information and events must be approved by both the Chief Marshal and the Office of Institutional Advancement.
CEA PROGRAM REQUIREMENTS

EVMS LABORATORY SAFETY AND ADDITIONAL TRAINING COURSES

Students working or otherwise participating in research at EVMS must complete the General Laboratory Safety Courses given by the EVMS Department of Environmental Health and Safety Services. The required courses will include:

1. Online laboratory safety training
2. HIPAA training in the first year and refresher training in the second
3. CITI Training

EVMS SCIENTIFIC MISCONDUCT POLICY

Students working or otherwise participating in research or clinical work must be familiar with and follow the EVMS Guide for Scientific Misconduct ([http://www.evms.edu/research/research_administration/office_of_research/research_compliance_integrity/](http://www.evms.edu/research/research_administration/office_of_research/research_compliance_integrity/)). Additional copies of the guide are available from the office of research 757-446-8480.

EVMS STUDENT PUBLISHING POLICY

Authorization for publishing any or all of your thesis work as a meeting abstract, meeting poster, book chapter or article in a scientific journal must be sought from your thesis advisor(s) and the Program Directors. All thesis work done as part of the requirements of completing the Masters in Clinical Embryology and Andrology must be attributed to EVMS, your advisor and your local institution. Additional details about student publishing procedures will be posted in the Research Methods and Thesis Course.
CURRICULUM

The Program Schedule/Calendar included in an appendix in this handbook is color coded, listed by name, course number, course director, number of weeks, and number of credit hours. Important dates are indicated, such as residential course dates for the first and second year as well as graduation dates. Holiday breaks are indicated in red. A summary table of the Curriculum is also included.

The curriculum for the Clinical Embryology and Andrology Master’s Program has been constructed with the input from the Course and Program Directors. The curriculum is designed to meet the needs of the Clinical Embryologist and/or Andrologist; to deepen basic knowledge to better understand the basic science behind IVF procedures. Another aspect of the program is to impart best practices for the IVF laboratory with special emphasis on design, workflow, QC/QA, CLIA 88 and current FDA regulations. Of paramount importance within the curriculum is the constant thread of ethical concerns and patient rights.

The 24-month multidisciplinary course of study provides coursework and research opportunities that give the students general and specialized biomedical sciences training. The program is designed to be completed in four semesters at an average of three courses per semester for a total of twelve online courses (34 credits):

- EMB-501 | Biochemistry and Molecular Cell Biology (4 credits)
- EMB-502 | Laboratory Technology (3 Credits)
- EMB-511 | Current Topics IVF - Journal Club (1Credit)
- EMB-503 | Female Reproductive Endocrinology and Infertility (3 Credits)
- EMB-504 | Gametes and Embryos (3 Credits)
- EMB-506 | In Vitro Fertilization Technology (4 Credits)
- EMB-515 | Male Reproductive Function and Dysfunction (3 Credits)
- EMB-507 | Genetics of Reproduction and Fertility (3 Credits)
- EMB-514 | Cryopreservation (2 Credits)
- EMB-518 | Research Methods Capstone/Thesis: Research and Scientific Writing (4 Credits)
- EMB-509 | Ethics, Society, and ART (1 Credit)

Students complete coursework and interact with instructors and classmates through a distance education format utilizing the Blackboard Learning Management System and are required to attend two 4-day Residential Courses at the EVMS campus one week prior to the beginning of each academic year. Upon successful completion of the program, students are awarded the Master’s of Science (MS) in Biomedical Sciences specializing in Clinical Embryology and Andrology.

Please note that all policies and procedures within the Student Handbook are subject to change without notice.
COURSE DESCRIPTIONS

BIOCHEMISTRY AND MOLECULAR CELL BIOLOGY

This course presents the basic principles of cellular structure and function which are the infrastructure for understanding clinical endocrinology. It is divided into five modules.

1) Examines the structure of cellular proteins, lipids, and carbohydrates, and their contributions to membrane structure and cellular compartmentalization. It also provides a basic introduction to the roles of protein enzymes as catalysts for biochemical processes.
2) Focuses on cellular metabolism, the use of biomolecules as energy sources, and the synthesis of key cellular components and intercellular signaling molecules (hormones).
3) Provides a brief introduction to several key areas of cellular physiology, including transport of small molecules across membranes and the intracellular response to hormonal stimulation.
4) An introduction to molecular biology, which considers the structure and function of both DNA and RNA and their roles in protein synthesis.
5) An introduction to genetics, with discussion of chromosomal structure, cell division and gametogenesis as well as both genetic and epigenetic mechanisms of inheritance.

At the end of this course, the student will understand:

- The nature of key cellular biomolecules and their contributions to biological structure
- The role of cellular metabolism in energy generation and the synthesis of macromolecules
- Key aspects of the maintenance of the intracellular environment and of signaling between cells
- Structure and function of the gene
- Principles of Mendelian and non-Mendelian genetics

LABORATORY TECHNOLOGY

Laboratory science and technology are at the foundation of the Clinical Embryology and Andrology Laboratory, and ART success rates are largely dependent on the quality of the laboratory environment and the knowledge and skill of laboratory personnel. Although the range and sophistication of the Clinical lab procedures has grown ever wider and technically demanding over the last 20 years, there remains a core of basic practices, which are still essential to good clinical performance. Scientific and clinical excellence requires more than robotic application of lab protocols: it requires a thorough understanding of these underlying principles, so that the embryologist can adapt old methods to new needs and effectively trouble-shoot problems that may arise.

These core technologies involve:

1) The collection and processing of cellular specimens, appropriate cellular assessment (microscopy), storage/preservation of cellular samples, and maintenance of the proper cellular culture environment. Maintenance of cell culture in turn includes: sterile technique, knowledge of cell metabolism, the preparation of media, and a grasp of the mechanical principles of clinical equipment.
2) In many smaller clinics, the embryologist may also be responsible for the hormone assays that are performed in endocrine labs. A good understanding of the basic principles of these assays is not only essential to these individuals, but to all embryologists, in order to interpret the endocrine data that are a part of every ART patient’s therapy and critical to diagnosis and clinical decision-making.
3) As the fields of genetics and developmental biology continue to converge, there will be a growing need for embryologists to understand molecular technologies that will be applied to clinical embryology in the form of new assays or therapies.

At the end of this course, the student will understand:

- Fundamental principles and proper application of different types of microscopes
- Basic principles and practices of a general cell culture laboratory
- Theory and clinical application of hormone assays
- Basic laboratory protocols used in molecular and genetic analysis, including PCR and FISH and how to use public molecular databases, such as BLAST.

**CURRENT TOPICS IN IVF**

This course is a journal club format designed to give basic instruction for reading the literature as students prepare to take courses in the following semesters that depend on journal articles as a supplement to or the sole source of reading. Another purpose for this course is to introduce current topics in IVF prior to thesis topic selection in the second semester. The students will work in groups to present papers selected by the program faculty. The online meeting format will be used to present and record the sessions; these sessions can be attended synchronously or asynchronously. Discussion boards will also be used to review and critique the presentations.

At the end of this course, the student will understand:

- How to prepare and present a paper in an online format
- Use peer review criteria to evaluate classmate projects and give feedback about the projects as well as the paper being presented
- The basic principles of reading journal articles, evaluating, questioning data, and analysis

**FEMALE REPRODUCTIVE ENDOCRINOLOGY AND INFERTILITY**

The ovaries and testes have dual functions for the production of gametes and sex hormones. The generation of fertile gametes and ability to sustain pregnancy are also regulated by hormones and paracrine factors, many of which have roles exclusive to reproduction. The timing of fertility is controlled by a hierarchical hormonal axis involving the hypothalamus, anterior pituitary gland, gonads and genital tract. The ovarian events in the menstrual cycle and receptivity of the uterus can be manipulated by altering the levels of stimulation by hypothalamic releasing factors, gonadotropins and sex steroids, providing opportunities for timely collection of gametes and reimplantation of embryos. This course will provide an introduction to endocrinology, the latest information in basic reproductive physiology of the female at all life stages, including puberty, mid-reproductive life and menopause. Chronic reproductive abnormalities will be discussed in detail, including hypothalamic amenorrhea, polycystic ovarian syndrome and premature menopause. The role of gonadotropin hormone therapy in ovulation induction and controlled ovarian stimulation along with complications, such as ovarian hyperstimulation and multiple births; will also be discussed. The use of agonists and antagonists in ART and stimulation protocols for difficult cases, such as the poor responder and hyper-responder, will be covered, along with donor egg and surrogacy.

At the end of this course, the student will understand:

- Basic endocrinology, hormones and feedback mechanisms
- Normal female reproductive anatomy
- Physiology of the ovulatory cycle, menstruation, pregnancy, and the cause of menopause
- Disorders of fertility and other pathology of the reproductive system
- Ovarian stimulation protocols in patients with PCOS or diminished ovarian reserve
- The role of GnRH agonist and antagonists in ART
**GAMETES AND EMBRYOS**

Germ cell development starts at an early stage of pregnancy when primordial germ cells migrate to the pre-gonads. After mitotic proliferation, they enter the germ-cell specific cell division called meiosis and become spermatocytes or oocytes. The meiotic stage is delayed until after puberty in the male gonad. In oogenesis, there is much cytoplasmic and epigenetic modification, and oocytes increase in size 100-fold. The extremely long prophase of the first meiotic division beginning before birth involves homologous chromosome pairing and genetic exchange (recombination) plus two cell divisions that produce a secondary oocyte and a polar body. Occasionally, chromosomes fail to segregate properly because of meiotic spindle dysfunction and non-disjunction leading to aneuploidy, which increases with age. During fertilization, a sperm penetrates the zona pellucida, fuses with the oocyte membrane and activates polyspermy mechanisms. The two haploid genomes combine to form the diploid zygote. During early cleavage stages, the embryonic genome becomes expressed, conferring independence of the maternal endowment of mRNAs formed in the oocyte. A blastocyst forms by accumulation of fluid within a sphere of trophectoderm cells and emergence of the inner cell mass containing embryonic stem cells for generating the three primary germ layers for the fetus.

At the end of this course, the student will understand:

- Origin of germ cells
- Oogenesis
- Spermatogenesis
- Cell biology of meiosis
- Fertilization and preimplantation development
- Implantation of embryos
- Gamete pathology and aging

**RESEARCH METHODS CAPSTONE/THESIS: STATISTICS**

Statistics and research study design are essential tools in any scientific endeavor. Developing a thesis research study design and understanding the background literature needed to create a capstone review or practice improvement project requires a rudimentary knowledge of basic statistics. In this course, students will receive training in biostatistics, which is the study of statistics used in medical and basic biological research. Students will (a) learn the fundamental principles of biostatistics, (b) study applications of biostatistics in clinical medicine, (c) participate in statistical problem-solving, and (d) learn the fundamental components of a research study design.

At the end of the statistics course students will be able to:

- Understand the ethical context of medically based research.
- Identify the use of various study designs.
- Learn sampling and data collection techniques.
- Become familiar with data displays.
- Recognize the proper use of data summary measures.
- Understand the laws of probability.
- Properly use inferential statistics.
- Understand and apply hypothesis testing.
- Review the topic of multiple linear regression.
- Learn how to develop a simple study design.
RESEARCH METHODS AND THESIS: CAPSTONE/THESIS TOPIC SELECTION AND PROPOSAL

Integrated into the statistics course students will select a capstone or thesis topic to research as the final Master’s Project which is completed in the final year of the program. After selecting a topic a project advisor is assigned and students develop a project proposal. These proposals are presented at the residential program at the beginning of the second year.

At the end of this portion of the course students will have:

- Selected a capstone or thesis project
- Prepared a mini literature review
- Developed a project question, hypothesis, thesis statement and determine how the project will be carried out.
- Submitted a Master’s Project proposal
- Prepared and delivered the proposal PowerPoint presentation at the residential course

MALE REPRODUCTIVE FUNCTION AND DYSFUNCTION

Andrology deals with functions of the male reproductive system under physiological and pathological conditions. It encompasses topics such as male infertility and contraception, hypogonadism, erectile dysfunction and male senescence. The emphasis for this course will be on the physiology and pathology of the male reproductive system in the context of evaluations for male infertility. Advances in assisted reproductive techniques now provide help for many men with male factor problems. Nevertheless, the pathogenesis of infertility and the implications of the new technologies should be understood at a molecular level. In this course, we will also expand knowledge about reproductive function by reviewing recent discoveries about the physiology and dysfunction of the male reproductive system. Assessment of male reproductive function usually involves testing and processing of semen samples. Semen is a complex fluid produced from several sources for the nurture of spermatozoa. Being the more abundant of the two gametes, the importance of andrology is sometimes underestimated and the significance of sperm preparation can be undervalued. Optimal preparation of spermatozoa for various methods of assisted reproduction and cryopreservation must be based on knowledge of their normal environment, as well as their structure and metabolism. Assessment of sperm quality and potential for conception is notoriously difficult. There are standard tests based on microscopic appearance and motility, as well as specialized “functional” and “non-functional” tests, such as the hemizona assay and the various tests to assess sperm DNA status.

At the end of this course, the student will understand:

- Anatomy and physiology of the male reproductive system
- Normal and abnormal spermatogenesis by reviewing slides prepared from testicular biopsies
- Basic semen analysis, parameters measured and the significance of each parameter, standard tests of sperm function using microscopy and specialized functional and “non-functional” sperm evaluating assays
- Physiology and pathology of the spermatozoon
- Evaluation of case studies in andrology
- Pathophysiology of the male reproductive system and disorders like testicular cancer, benign and malignant prostate and genetic causes of male infertility
- Male contraception and gender pre-selection using sperm
IN VITRO FERTILIZATION

In vitro fertilization has given its name to the new field of reproductive medicine. IVF was born when the fundamentals of tissue culture (see Laboratory Technology course) were adapted to mimic, within a clinical laboratory, the specific conditions that are normally experienced by gametes and embryos only in the reproductive tracts. However, in relocating the process of fertilization outside the environment of the fallopian tube, it is necessary to protect cells from contamination and stabilize environmental conditions in the absence of natural safeguards, such as the maternal immune system and homeostasis. Good patient care also requires a spectrum of other responsibilities, including maintaining patient confidentiality, comprehensive records and appropriately trained personnel, and quality assurance is mandated by professional and governmental standards. Thus, a consistently high quality clinical laboratory needs more than just a familiarity with biological protocols: it requires the development and implementation of standards and practices of the highest stringency.

At the end of this course, the student will understand:

- How to collect, recover, assess, prepare, fertilize and maintain gametes and embryos
- Basic protocols for IVF, ICSI, GIFT, ZIFT, TET and ET
- Types of culture media and culture systems used in IVF
- How to design and maintain a quality IVF laboratory
  - principles and application of Quality Assurance (QC, proficiency testing, etc.)
  - laboratory safety (security, fire, electrical, patient issues, staff issues, etc.)
  - the operation and maintenance of common lab equipment
  - record keeping, personnel issues and standards of good practice
  - how to trouble-shoot problems that may arise in the IVF lab
- Topical subjects, such as derivation of embryo stem cells from blastocysts and cloning

GENETICS OF REPRODUCTION AND INFERTILITY

Many aspects of medicine, including reproductive medicine, are beginning to revolve around underlying genetic causes or predispositions. The advent of the Human Genome Project has given science the potential of defining genetic causes underlying reproductive anomalies, infertility, spontaneous miscarriages, etc. Polycystic ovarian syndrome, premature ovarian failure, and male factor infertility are examples of conditions studied in attempts to determine a genetic cause. The X chromosome encodes genes essential for oogenesis. On the Y chromosome, microdeletions have been shown to be the cause of some sperm abnormalities – the Y chromosome is inherently vulnerable to accumulating defects because of the lack of genetic crossover. Couples at risk of passing genetic diseases to their offspring now have the option of having their embryos diagnosed prior to implantation (preimplantation genetic diagnosis PGD), rather than waiting until prenatal diagnosis (amniocentesis or chorionic villus sampling). PGD can also be used to screen embryos for specific chromosomes for carriers of balanced translocations or for couples at risk of aneuploidy associated with advanced maternal age, recurrent miscarriages, multiple failed IVF cycles or sperm abnormalities (especially in men with oligoasthenoteratozoospermia). Once pregnancy is established, genetic counseling may be warranted. Prenatal diagnosis has expanded beyond the traditional amniocentesis and chorionic villus sampling to include newer non-invasive diagnostic tools such as the use of nuchal translucency and the quadruple screen.

At the end of this course, the student should understand:

- The genetic basis of sex determination and functional anomalies of the reproductive system.
- The origin of aneuploidy and other chromosomal abnormalities in oocytes, sperm & embryos.
- The epidemiology and genetic basis of pregnancy wastage.
- The current status of preimplantation/prenatal genetic diagnosis and its applications.
- Molecular techniques that are available for PGD and prenatal diagnosis.
CRYOPRESERVATION

Few organisms have evolved tolerance to freezing and thawing, and even hibernating animals automatically come out of their torpor if core body temperature falls below zero degrees C. Intracellular ice formation damages cell membranes and organelles and is invariably lethal. The goals of cryopreservation are to preserve viable gametes, embryos, tissues, and even whole organs for future fertility options and to enable augmented pregnancy rates for IVF. Effective protocols require cryoprotectants and optimal rates of cooling and thawing to minimize the risks of intracellular ice crystallization, solute effects and other potentially harmful changes. Surviving the cycle of freezing and thawing is not enough, however, because temperatures above freezing can adversely affect cell structure besides the reversible effects on respiration and metabolism. Clinical applications of cryobiology also require special safeguards against the risk of transmitting disease from sources of contamination or causing genetic or epigenetic harm to the children of ART.

At the end of this course, the student will understand:

- Biological effects of cooling and freezing
- Principles of cryopreservation using conventional, equilibrium cooling methods
- Principles of vitrification as an alternative to conventional freeze-thawing
- Applications and adaptations of low temperature banking for different cell and tissue types
- Safeguards for quality assurance

ETHICS, SOCIETY, LAW AND ART

Although patients seeking help for reproductive problems are to a certain extent self-selective, providers of reproductive health care do encounter patients with pre-conceived notions of what is or is not acceptable from an ethical or moral viewpoint. The objective of this course is to provide the student with a historical background of various traditional beliefs about reproduction, as well as the comments of moral theologians, ethicists, philosophers, sociologists, and others, about these same beliefs. Hopefully, with such a background, the student should be prepared to discuss with patients these sensitive subjects with considerable understanding. Specifically, the course will provide a limited amount of background material but will refer the student to original sources, as well as to selected commentaries. At the practical level, the student will be presented with clinical case histories and he or she will be expected to discuss the pros and cons of each case and offer a realistic resolution to the ethical or moral dilemma. Grades in this course will be determined by the students’ evaluation of these case studies and a take home exam.

At the end of this course, the student will understand:

- Basic ethical principles, theories and practices
- How to interpret personal views and the views of others using these basic principles
- That ethical issues surrounding reproductive rights involve legal, cultural, religious and social constrains
- Moral and ethical responsibilities of individuals involved in reproductive technology
- Basic legal principles, theories and practices focused on ART and reproductive issues
RESEARCH METHODS AND CAPSTONE/THESIS: RESEARCH AND SCIENTIFIC WRITING

The Master’s Project must be an original project of scholarship or research on a relevant topic in reproductive biology or medicine resulting in either a thesis or capstone report. The Master’s Project proposal is developed at the end of the first year and the project itself over the second year of the program.

Capstone Review Track: Those selecting this track will produce a review article that could be submitted to a peer reviewed journal or potentially become a chapter in a book.

Capstone Quality Assessment Track: Those selecting this track will produce a practice improvement or quality assessment report after careful analysis and comparison of current practice methods and outcomes with what has been found in the literature.

Research Track: Those selecting the research track will produce a research thesis that could be submitted to a peer reviewed journal or to a meeting as an abstract or a paper.

In all cases the student will work in conjunction with EVMS and local advisors to determine the proper approach to the project. In the case of a research project with a proposed design involving human subjects, the student must seek and obtain local and EVMS IRB review and approval for the project. In the case of a practice improvement project students will seek EVMS IRB determination and approval to assure that patient data and information are protected.

To aid in writing, a section of the course has been developed to give the students an outline of the steps for writing the project. Basic elements of the different tracks are covered: development of a thesis statement, data commentary, introduction, background, discussion and conclusion; specific to the research track, materials/methods and results. A major concern in publication is plagiarism; this topic is also covered in detail.

Although all students in this program will not be doing human subject research while in the program, they are required to take Human Subjects Protection CITI training (IRB), and HIPPA training. These types of training modules are mandatory for anyone working with human subjects and are available in the Research Methods and Capstone/Thesis Course or as separate courses.

At the end of this course, the student will:

- Understand the process of developing a thesis statement, a review of the literature, summary of current research, and future directions
- Submit a detailed research study design as part of the thesis track
- Submit an outline to facilitate organization and direction in all tracks
- Understand what plagiarism is and how to avoid it
- Ultimately submit a well-developed, guided, master’s project resulting in a paper, thesis or report
- Understand the role that the IRB plays in human subjects protection
- Know HIPPA and OHRP guidelines for research and clinical practice to protect the patient and human research subjects involved in research
PROFESSIONAL SOCIETIES

SOCIETY OF ASSISTED REPRODUCTIVE TECHNOLOGY (SART)
SART is the primary organization of professionals dedicated to the practice of assisted reproductive technologies (ART) in the United States. ART includes the practice of In Vitro Fertilization (IVF). The mission of our organization is to set up and help maintain the standards for ART in an effort to better serve our members and our patients.

One of the most important functions of our site is to help patients locate and contact infertility clinics and view national and individual clinic IVF success rates.

AMERICAN SOCIETY FOR REPRODUCTIVE MEDICINE (ASRM)
The Vision of the American Society for Reproductive Medicine (ASRM) is to be the nationally and internationally recognized leader for multidisciplinary information, education, advocacy and standards in the field of reproductive medicine. The ASRM is a non-profit organization whose members must demonstrate the high ethical principles of the medical profession, evince an interest in infertility, reproductive medicine and biology, and adhere to the objectives of the Society.

AMERICAN ASSOCIATION OF BIOANALYSTS (AAB)
American Association of Bioanalysts is a national professional association whose members are clinical laboratory directors, owners, supervisors, managers, medical technologists, medical laboratory technicians, physician office laboratory technicians and phlebotomists. AAB also has three specialized membership sections for laboratory professionals: the College of Reproductive Biology (CRB), the Environmental Biology and Public Health Section (EBPH) and the National Independent Laboratory Association (NILA).

AAB is committed to the pursuit of excellence in clinical laboratory services by enhancing the professional skills of each of its members; promoting more efficient and productive operations; offering external quality control programs; collaborating with other professional associations and government agencies; promoting safe laboratory practices; and educating legislators, regulators, and the general public about clinical laboratory tests and procedures.
FAQS

How many students are accepted each year?

►►25.

Is this program geared toward professionals?

►►The program is designed for clinical embryologists and andrologists, physicians, and others involved in the practice of assisted reproduction technologies.

Is this program accredited?

►►Eastern Virginia Medical School is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award master's degrees, doctoral degrees, and certificates in medicine and the health professions.

Are the courses conducted in a university in addition to the online program?

►►The program is completely online except for two four-day residential courses held at EVMS the first week of each academic year.

What are the methods employed to deliver distance learning?

►►Courses are taught by experienced basic science and clinical faculty using the Blackboard learning platform. Lectures are typically either streamed or voiced over PowerPoint presentations.

How much time is required to participate?

►►We estimate that you will need to dedicate at least 10 to 15 hours every week to reviewing lecture materials, reading textbooks and working on projects.

Is the program available to students outside of the United States?

►►Yes, this program is available outside the U.S. and may be considered an international program.

Will the ILETS score be acceptable instead of TOEFL?

►►Yes.

I have not passed the TOEFL but have passed the ECFMG exam. Is this accepted?

►►No, they are not interchangeable. You must pass either the TOEFL or the ILETS to be admitted to EVMS.

What is the tuition payment schedule?

►►Tuition is due prior to the beginning of each semester. Invoices will be mailed from the EVMS Finance Office (Accounts Receivable).

Is financial aid available?

►►Yes.
Are scholarships available?
►►Not at this time.

Is there any discount for former fellows?
►►No.

Do you have a facility for Ph.D./Research in embryology?
►►Currently, we are looking into the development of a distance Ph.D. program.

Would a Bachelor of Science in Nursing and four years of experience as an IVF/infertility nurse be acceptable for entry?
►►Yes.
APPENDICLES
<table>
<thead>
<tr>
<th>STUDENT INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name:</td>
</tr>
<tr>
<td>Start date:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RESIDENTIAL COURSE 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Attend Residential Course – Year 1</td>
</tr>
<tr>
<td>□ Review CEA Handbook</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SPRING SEMESTER: YEAR 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Complete Semester 1 Coursework</td>
</tr>
<tr>
<td>□ Biochemistry</td>
</tr>
<tr>
<td>□ Lab Technology</td>
</tr>
<tr>
<td>□ Journal Club</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FALL SEMESTER: YEAR 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Complete Semester 2 Online Registration</td>
</tr>
<tr>
<td>□ Complete Semester 2 Coursework</td>
</tr>
<tr>
<td>□ Female Reproductive Endocrinology &amp; Infertility</td>
</tr>
<tr>
<td>□ Gametes &amp; Embryos</td>
</tr>
<tr>
<td>□ Basic Statistics &amp; Capstone/Thesis Proposal</td>
</tr>
</tbody>
</table>

| □ Select & Get Authorization for Master’s Project Topic and Track. |
| □ Master’s Project Mentor appointed/selected |
| Name of Mentor |

| □ Complete Track Selection Master’s Project Topic Form |

<table>
<thead>
<tr>
<th>RESIDENTIAL COURSE 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Attend Residential Course – Year 2</td>
</tr>
<tr>
<td>□ Give Master’s Project Presentation at Residential Course</td>
</tr>
<tr>
<td>□ Complete Master’s Project Presentation Form</td>
</tr>
<tr>
<td>□ Complete Graduation Information Form</td>
</tr>
<tr>
<td>□ Complete Semester 3 Online Registration</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SPRING SEMESTER: YEAR 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Thesis Track: Develop detailed research study design</td>
</tr>
<tr>
<td>□ Apply for Approval</td>
</tr>
<tr>
<td>□ Local Approval</td>
</tr>
<tr>
<td>□ EVMS IRB Approval</td>
</tr>
</tbody>
</table>

| □ Capstone Track: Develop detailed outline |
| □ Complete Semester 3 Coursework |
| □ IVF |
| □ Male Reproduction Function & Dysfunction |
| □ Genetics |
### SPRING SEMESTER: YEAR 2 - Continued

- □ Submit & Obtain Approval For Capstone or Thesis
  - □ Outline
  - □ Introduction
  - □ Section Drafts
- □ Research Thesis or Capstone Project

### FALL SEMESTER: YEAR 2

- □ Complete Semester 4 Online Registration
- □ Complete Semester 4 Coursework
  - □ Cryopreservation
  - □ Ethics, Society & ART
  - □ Research Methods Writing
- □ Finalize Capstone or Thesis *(Approved by Program Directors)*
- □ Submit Capstone or Thesis
- □ Complete Thesis Acceptance and Processing Form
- □ Complete Thesis/Capstone Forms
  - □ Thesis and or Diploma Delivery Form
  - □ Certification for Graduation Form
  - □ Online Graduation Information Form
## TRACK AND MASTER’S TOPIC SELECTION FORM
Clinical Embryology & Andrology Master’s Program

<table>
<thead>
<tr>
<th>Student Name</th>
<th>Student ID #</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Track From List Below</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tracks:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Thesis Track</td>
</tr>
<tr>
<td>2. Capstone Track</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Thesis Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Approved By</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Signature</td>
<td></td>
</tr>
<tr>
<td>Program Director Signature</td>
<td></td>
</tr>
<tr>
<td>Associate Program Director Signature</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Approved</td>
</tr>
<tr>
<td>☐ Rejected</td>
</tr>
<tr>
<td>☐ Approved with modifications</td>
</tr>
<tr>
<td>☐ Deferred</td>
</tr>
</tbody>
</table>

- This form will be sent to you electronically in February of the first year of the program.
RESULTS OF MS MASTER’S PROJECT PROPOSAL PRESENTATION
Clinical Embryology & Andrology Master’s Program

This is to certify that on ________________________, ____________________________
(Date) (Student’s Name)
__________________________, who is enrolled in the Master of Biomedical Sciences: Clinical Embryology and
(Student ID Number) Andrology Program, has ______________________________ the requirements checked below.
(Passed / Failed / Completed / Approved)

DESIGNATED REQUIREMENTS

☐ Master’s Project Topic
☐ Master’s Project Proposal
☐ Coursework
☐ Residential Courses

SIGNATURES

<table>
<thead>
<tr>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Director Signature</td>
<td></td>
</tr>
<tr>
<td>Associate Program Director Signature</td>
<td></td>
</tr>
<tr>
<td>Master’s Project Advisor Signature</td>
<td></td>
</tr>
</tbody>
</table>

Thesis Topic

Remarks


REQUIREMENTS HAVE NOT BEEN MET
Petition to Attend Graduation or Graduate With Your Cohort
Clinical Embryology & Andrology Master’s Program

This form must be completed and returned one month prior to graduation (the third week in April). This form is required by all graduates who have not completed all degree requirements but would like to attend graduation or would like to officially graduate in the academic year under which you entered the program, (i.e. Class of 2016). Not only must the form be filled out and signed by you, you must email and obtain the appropriate signatures for approval to attend graduation as indicated below.

By completing this form and signing it, you are indicating that your thesis will be completed, as well as any outstanding requirements, by the end of the third week of August of your graduation year. Any others signing this form must agree that you will likely finish within the 90-day post-graduation cutoff.

If you will not be able to complete the requirements within the 90-day cutoff you will receive further instructions from the program directors.

<table>
<thead>
<tr>
<th>Student Name</th>
<th>Student ID #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Signature</td>
<td>Date</td>
</tr>
</tbody>
</table>

List of Requirements Not Met

<table>
<thead>
<tr>
<th>SIGNATURES</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master’s Project Advisor</td>
<td></td>
</tr>
<tr>
<td>Course Director</td>
<td></td>
</tr>
<tr>
<td>Program Director</td>
<td></td>
</tr>
<tr>
<td>Associate Program Director</td>
<td></td>
</tr>
</tbody>
</table>
THESIS / DIPLOMA DELIVERY
Clinical Embryology & Andrology Master’s Program

This form will be completed during the final semester and submitted with the three printouts of the thesis that you submit for binding. Please also submit a check in the amount of $66.00 for the bindery fees made out to Long’s Book Bindery.

Student Name

Student ID #

Allow four (8) to eight (12) weeks for binding and processing.

If you will be in the Tidewater area, please give your address and telephone number so that you may be informed that your thesis is ready to be picked up.

Local Tidewater Address

Street Address
City
State
Zip
Telephone

If you will not be in the Tidewater area, please give your contact information (address/phone) to which your thesis should be sent by insured mail.

Alternate Address

Street Address
City
State
Zip
Telephone

Students must forward one (1) printout on >25% rag cotton and two (2) printouts on regular printer paper to:

Helena Russell
Clinical Embryology and Andrology Program Office
Lester Building Room 320
651 Colley Ave
Norfolk, VA 23507
(757) 446-8482

- Please also submit a check in the amount of $66.00 for the bindery fees made out to Long’s Book Bindery.
- Please note that the bindery fees are subject to change and you will be notified of the correct price at the time of submission.
- Please contact Brielle Ashley if you need further assistance: ashleybe@evms.edu.
THESIS ACCEPTANCE AND PROCESSING
Clinical Embryology & Andrology Master’s Program

<table>
<thead>
<tr>
<th>PART A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Name</td>
</tr>
</tbody>
</table>

This is to certify the above-named student has submitted his/her thesis and that it has been accepted by the committee as satisfactory.

<table>
<thead>
<tr>
<th>Thesis Title</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Authorization Signatures</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thesis Advisor</td>
<td></td>
</tr>
<tr>
<td>Program Director</td>
<td></td>
</tr>
<tr>
<td>Associate Program Director</td>
<td></td>
</tr>
</tbody>
</table>

When Part A has been completed, students must forward one printout on >25% rag cotton and 2 printouts on regular printer paper to:

Helena Russell
Clinical Embryology and Andrology Program Office
Lester Building Room 320
651 Colley Ave
Norfolk, VA 23507
(757) 446-8482

Please also submit a check in the amount of $66.00 for the bindery fees made out to Long’s Book Bindery. Please note that the bindery fees are subject to change and you will be notified of the correct price at the time of submission.

<table>
<thead>
<tr>
<th>PART B Clinical Embryology &amp; Andrology Use Only</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Rag Cotton &amp; Printer Paper of Thesis Received</td>
</tr>
<tr>
<td>☐ Receipt(s) for binding and other fees</td>
</tr>
<tr>
<td>☐ Thesis/Dissertation sent to bindery</td>
</tr>
<tr>
<td>☐ Thesis/Dissertation returned from bindery</td>
</tr>
<tr>
<td>☐ Thesis/Dissertation distribution</td>
</tr>
</tbody>
</table>

- This form will be filled out during your final semester and submitted with the final draft of your thesis.
M.S. in Biomedical Sciences—Clinical Embryology and Andrology Program
Certification for Graduation

This form will be completed and submitted by the Program Administrator; after student evaluation and signature are obtained the student will be allowed to graduate.

To be completed by CEA Office

Name: ____________________________

Last Name ____________________________ First Name ____________________________ Middle Initial ____________________________

Student ID #: ____________________________

Entry Year ____________________________

Track ____________________________

Degree Option

☐ Research Thesis

☐ Capstone

Indicate the status of the following:

<table>
<thead>
<tr>
<th></th>
<th>Pending</th>
<th>Completed</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thesis Presentation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Final GPA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thesis For Printing</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Hours Needed for the Degree 34

Please check all of the required courses that must be completed prior to graduation:

<table>
<thead>
<tr>
<th></th>
<th>Course No</th>
<th>Course Name</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>☑</td>
<td>EMB-501</td>
<td>Biochemistry and Molecular Cell Biology</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>EMB-502</td>
<td>Laboratory Technology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>EMB-511</td>
<td>Current Topics in IVF</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>EMB-517</td>
<td>RMT: Statistics and Thesis Proposal</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>EMB-503</td>
<td>Female Reproductive Endocrinology and Infertility</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>EMB-504</td>
<td>Gametes and Embryos</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>EMB-507</td>
<td>Genetics of Reproduction and Infertility</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>EMB-506</td>
<td>In Vitro Fertilization Technology</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>EMB-513</td>
<td>Male Reproductive Function and Dysfunction</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>EMB-514</td>
<td>Cryopreservation</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>EMB-518</td>
<td>RMT: Research and Scientific Writing</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>EMB-509</td>
<td>Ethics, Society and ART</td>
<td>1</td>
</tr>
</tbody>
</table>

TOTAL CREDIT HOURS 34

Upon completion of the above, this student will have completed all requirements for the Master’s degree.

Program Director ____________________________ Date ____________________________

Program Associate Director ____________________________ Date ____________________________
# Class of 2017 - Year 1

## Program Schedule

### Residential Program (Yr 1) April 19-23 2015

<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 20 (2015)</td>
<td>(EMB 501) BIOCHEMISTRY, MOLECULAR CELL BIOLOGY</td>
</tr>
<tr>
<td>May 1</td>
<td>(EMB 502) LABORATORY TECHNOLOGY</td>
</tr>
<tr>
<td>May 15</td>
<td>FREE TIME</td>
</tr>
<tr>
<td>June 6</td>
<td>Helena Russell, MS 21 Weeks</td>
</tr>
<tr>
<td>July 13</td>
<td>(EMB 511) CURRENT TOPICS IN IVF</td>
</tr>
<tr>
<td>August 10</td>
<td>Jacob Mayer, PhD 18 Weeks</td>
</tr>
<tr>
<td>August 17</td>
<td>Helena Russell, MS 15 Weeks</td>
</tr>
<tr>
<td>September 14</td>
<td>(EMB 503) FEMALE REPRODUCTIVE ENDOCRINOLOGY &amp; INFERTILITY</td>
</tr>
<tr>
<td>October 19</td>
<td>FREE TIME 12/21/2015 - 1/3/2016</td>
</tr>
<tr>
<td>November 26</td>
<td>Laurel Stadtmauer, MD, PhD 16 Weeks</td>
</tr>
<tr>
<td>December 23</td>
<td>(EMB 504) GAMETES &amp; EMBRYOS</td>
</tr>
<tr>
<td>January 18 (2016)</td>
<td>HangYin, PhD 19 Weeks</td>
</tr>
<tr>
<td>February 15</td>
<td>(EMB 517) RESEARCH METHODS &amp; CAPSTONE/THESIS PROPOSAL</td>
</tr>
<tr>
<td>March 7</td>
<td>CAPSTONE THESIS/STATISTICS</td>
</tr>
<tr>
<td>March 14</td>
<td>Helena Russell, MS 13 Weeks</td>
</tr>
<tr>
<td>April 11</td>
<td>FREE TIME</td>
</tr>
<tr>
<td>April 18</td>
<td>FREE TIME</td>
</tr>
<tr>
<td>May 9</td>
<td>FREE TIME</td>
</tr>
</tbody>
</table>
# Class of 2017 - Year 2

## Program Schedule

<table>
<thead>
<tr>
<th>Month</th>
<th>Dates</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Faculty</th>
<th>Credits</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>May (2016)</td>
<td>16-30</td>
<td>EMB 515</td>
<td>Male Reproductive Function &amp; Dysfunction</td>
<td>Mahmood Morshed, PhD</td>
<td>3</td>
<td>14 Weeks</td>
</tr>
<tr>
<td>June</td>
<td>1-11</td>
<td>EMB 506</td>
<td>In Vitro Fertilization Technology</td>
<td>Jacob Mayer, PhD</td>
<td>4</td>
<td>12 Weeks</td>
</tr>
<tr>
<td>August</td>
<td>1-15</td>
<td>EMB 507</td>
<td>Genetics of Reproduction &amp; Infertility</td>
<td>Susan Gillin, PhD</td>
<td>3</td>
<td>13 Weeks</td>
</tr>
<tr>
<td>September</td>
<td>3-19</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>October</td>
<td>1-15</td>
<td>EMB 514</td>
<td>Cryopreservation</td>
<td>Jacob Mayer, PhD</td>
<td>2</td>
<td>10 Weeks</td>
</tr>
<tr>
<td>November</td>
<td>13-28</td>
<td>EMB 518</td>
<td>Research Methods Capstone</td>
<td>Helena Russell, MS</td>
<td>4</td>
<td>22 Weeks</td>
</tr>
<tr>
<td>December</td>
<td>12-19</td>
<td>EMB 509</td>
<td>Ethics, Society &amp; Art</td>
<td>Lawrence Hultgren, PhD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>January (2017)</td>
<td>9-15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>February</td>
<td>6-20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>March</td>
<td>13-27</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>April</td>
<td>10-15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>May</td>
<td>8-15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Residential Program (Yr 2) May 23-27 2016**

**Free Time 12/19/2016 - 1/2/2017**

**Graduation May 20, 2017**
# CEA Program Curriculum
## Class of 2017

<table>
<thead>
<tr>
<th>Course No</th>
<th>Course Name</th>
<th>Course Manager</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Semester 1</td>
<td>SPRING</td>
<td></td>
</tr>
<tr>
<td>EMB-501</td>
<td>Biochemistry and Molecular Cell Biology</td>
<td>Helena Russell, MS</td>
<td>4</td>
</tr>
<tr>
<td>EMB-502</td>
<td>Laboratory Technology</td>
<td>Jacob Mayer, PhD</td>
<td>3</td>
</tr>
<tr>
<td>EMB-511</td>
<td>Current Topics IVF ~ Journal Club</td>
<td>Helena Russell, MS</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Semester 2</td>
<td>FALL</td>
<td></td>
</tr>
<tr>
<td>EMB-503</td>
<td>Female Reproductive Endocrinology and Infertility</td>
<td>Laurel Stadtmauer, MD, PhD</td>
<td>3</td>
</tr>
<tr>
<td>EMB-504</td>
<td>Gametes and Embryos</td>
<td>Hang Yin, PhD</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Semester 3</td>
<td>SPRING</td>
<td></td>
</tr>
<tr>
<td>EMB-515</td>
<td>Male Reproductive Function and Dysfunction</td>
<td>Mahmood Morshedhi, PhD</td>
<td>3</td>
</tr>
<tr>
<td>EMB-506</td>
<td>In Vitro Fertilization Technology</td>
<td>Jacob Mayer, PhD</td>
<td>4</td>
</tr>
<tr>
<td>EMB-507</td>
<td>Genetics of Reproduction and Infertility</td>
<td>Susan Gitlin, PhD</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Semester 4</td>
<td>FALL</td>
<td></td>
</tr>
<tr>
<td>EMB-514</td>
<td>Cryopreservation</td>
<td>Jacob Mayer, PhD</td>
<td>2</td>
</tr>
<tr>
<td>EMB-518</td>
<td>Research Methods Capstone Thesis: Research and Scientific Writing</td>
<td>Helena Russell, MS</td>
<td>4</td>
</tr>
<tr>
<td>EMB-509</td>
<td>Ethics Society and ART</td>
<td>Larry Hultgren, PhD</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td></td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>TOTAL CREDIT HOURS</td>
<td></td>
<td>34</td>
</tr>
</tbody>
</table>