

# BACHELOR OF SCIENCE IN HEALTH SCIENCES WITH A MAJOR IN CLINICAL EMBRYOLOGY AND ASSISTED REPRODUCTIVE TECHNOLOGY (STEM)

The bachelor of science in health sciences with a major in clinical embryology and assisted reproductive technology program is designed to prepare graduates with the theoretical knowledge and practical skills for positions in assisted reproductive technology laboratories, biotechnology companies, research institutes and hospitals. After program completion and work experience in the field, individuals will be eligible to take the embryology and andrology board of certification examination (ELS and ALS) offered by the American Association of Bioanalysis (AAB). The curriculum will also ensure that graduates will be prepared to pursue an advanced degree beyond the baccalaureate if they so choose.

This is a STEM designated program.

Visit the program website (<https://bls.smhs.gwu.edu/programs/bshs-clinical-embryology-and-assisted-reproductive-technology/>) for additional information.

## ADMISSIONS

Admission     Fall: July 20  
Deadlines

Spring: December 1  
Summer: March 20

Standardized SAT/ACT optional  
test scores

Recommendation letter required     One letter of recommendation from an academic instructor who can strongly attest to your academic ability, and/or an Individual who served in a supervisory capacity for you, and who can strongly attest to your work ethic.

Prior academic records     Transcripts are required from all colleges and universities attended (including via dual enrollment), whether or not credit was earned, the program was completed, or the credit appears as transfer credit on another transcript. Transcripts must be forwarded in their original sealed envelopes. Official transcript may also be sent electronically directly from the institution.  
  
Applicants may receive credit for college-level coursework through International Baccalaureate (IB) or College Board Advanced Placement (AP) examinations. Official score results must be forwarded directly from the College Board. #Please refer to GW Undergraduate Admissions (<https://undergraduate.admissions.gwu.edu/>) for information on maximum credits, minimum scores, and GW course equivalents for AP and IB credits.

Non-traditional credit sources may be considered on a case-by-case basis (i.e. military coursework, credit-by-exam, and non-college based health programs). Information on transfer credit eligibility may be found in the Bulletin under Regulations (see Transfer Credit/Advanced Standing for Undergraduates), including minimum letter grade requirements.

Statement of purpose     All applicants are required to submit a 250–500 word essay describing your reasons for undertaking study at the George Washington University. Focus on your academic objectives, career goals and related qualifications, including collegiate, professional, and extra-curricular activities relevant to your program of interest. Include any substantial accomplishments not already mentioned on the application form as well as obstacles you have overcome that influenced your desire to pursue this program of study.

Additional requirements     All students must meet Essential Functions requirements, and successfully meet the criminal background check and drug screen requirements. (<https://smhs.gwu.edu/academics/health-sciences/academics/admissions/background-checks-and-drug-screenings>) )  
  
Transfer coursework must be earned with a C or better (C- grades and lower do not transfer to GW SMHS).

A resumé or curriculum vitae is required.

Prerequisites     At least 45 semester hours of college with a minimum cumulative and science GPA of 2.5 from a regionally accredited institution of higher learning. Students applying under a Guaranteed Admission Agreement must have a cumulative GPA of 2.75. Prerequisite coursework must include the following:

- English Composition (6 credits)
- General Biology (lecture and ‘hands-on’ lab) (8 credits)
- College Mathematics (algebra, statistics, or higher 3 credits)
- Humanities (3 credits)
- Social and Behavioral Science (3 credits)

International applicants:     International students should check with individual programs regarding eligibility for visa sponsorship. Generally, online and hybrid programs are not eligible for student visa sponsorship from GW. This includes transfer students from any other institution with an existing visa.

Applicants who have not completed a post-secondary degree from an institution where English is the sole language of instruction must submit TOEFL, IELTS, PTE Academic, or the Duolingo English Test scores to be considered for admission. The following are the minimum scores for admission consideration:

- Academic IELTS: An overall band score of 7.0, with no individual band score below 6.0.

- TOEFL: 600 paper-based or 100 internet-based.

- PTE: Overall score of 68

- DET: Overall score of 120

Undergraduate applicants who meet one of the following conditions can be considered for admission without submitting TOEFL, PTE or IELTS or DET scores:

Scores cannot be more than two years old. To ensure TOEFL scores are sent to GW, use institutional code 5246. An institutional code is not required to send IELTS or PTE scores to GW. DET scores must be submitted via the Duolingo English Test system directly to GW.

Based on their application and the results of the English proficiency examination students can be required to take English for Academic Purposes (EAP) during their first year of study at GW. GW evaluates each application holistically and applicants can be recommended for EAP even if they meet the requirements for exemption. Students placed in EAP courses should anticipate additional tuition expenses as well as possible extension of time needed to complete their degree programs.

### Supporting documents not submitted online should be mailed to:

George Washington University

ATTN: Transcript Processing Center  
1415 W 22<sup>nd</sup> St.  
Suite 220  
Oak Brook, IL 60523

Documents can be submitted electronically  
to: transcripts@hsprograms.gwu.edu.

### Contact for questions:

hspora@gwu.edu  
202-994-0384 (phone)  
Hours: 9:00 am to 5:00 pm, Monday through Friday

## REQUIREMENTS

Code	Title	Credits
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This is a degree completion program offered in fully online and hybrid online and on-campus formats.<sup>1</sup>

Students must complete 120 credits consisting of 45 to 60 transfer credits to satisfy University General Education and program-specific prerequisite requirements and a minimum of 60 credits taken at GW.

### University General Education Requirement

3 credits in critical thinking in the humanities

6 credits in critical thinking, quantitative reasoning, or scientific reasoning in the social sciences

3 credits in quantitative reasoning (college algebra, statistics, or higher)

3 credits in English composition

A course with an approved oral communication component. This requirement is satisfied by completing CERT 3005 in the required major curriculum.<sup>5</sup>

3 credits in quantitative reasoning (must be in mathematics or statistics).

3 credits in scientific reasoning (must be in natural and/or physical laboratory sciences). Satisfied with the prerequisite requirement for 8 credits in general chemistry with lab or 4 credits in microbiology with lab.

Writing in the disciplines (WID) coursework satisfied by MLS 2007W and MLS 3001W program requirements.

### Program prerequisites

8 credits in general biology I and II<sup>2,3</sup>

8 credits in chemistry I and II<sup>2,3</sup>

4 credits in microbiology with lab<sup>2,3</sup>

3 credits in organic chemistry or biochemistry<sup>2,6</sup>

22 credits transferred in as elective courses.<sup>4,6</sup>

### Core courses for the major that must be taken at GW

Required for both the fully online and hybrid program options:

MLS 2007W	Microbes and Society
MLS 3001W	Professional Ethics for Medical Laboratory Scientists
MLS 4116	Clinical Bacteriology I
MLS 4117	Clinical Bacteriology II
MLS 4119	Parasitology, Mycology, and Virology
MLS 4130	Hematology I
MLS 4131	Hematology II
MLS 4141	Immunology and Serology
MLS 4145	Clinical Biochemistry I
MLS 4146	Clinical Biochemistry II
MLS 4150	Immunohematology

MLS 4151	Molecular Diagnostics
MLS 4158	Laboratory Management and Operations
MLS 4159	Capstone Seminar
Required for the fully online option only:	
MLS 3000	Clinical Laboratory Mathematics
MLS 4136	Clinical Experience I
MLS 4137	Clinical Experience II
MLS 4138	Clinical Experience III
MLS 4139	Clinical Experience IV
And 11 credits in elective courses.	
Required for the hybrid program option only:	
MLS 4160	Blood Bank Practicum
MLS 4161	Clinical Biochemistry Practicum
MLS 4162	Hematology Practicum
MLS 4164	Clinical Microbiology Practicum
MLS 4165	Urinalysis Practicum
MLS 4166	Coagulation Practicum
MLS 4216	Clinical Bacteriology Laboratory
MLS 4219	Parasitology, Mycology, and Virology Laboratory
MLS 4230	Hematology Laboratory
MLS 4246	Clinical Biochemistry Laboratory
MLS 4250	Immunohematology Laboratory
MLS 4251	Molecular Diagnostics Laboratory

<sup>1</sup>The fully online program option is for students who have successfully completed a medical laboratory technician (MLT) program within six months of application and/or are currently board certified MLTs. The hybrid option is for students who have completed at least 45 college credits or who have earned an associate's degree along with the required prerequisite science and General Education courses.

<sup>2</sup>Medical laboratory technicians (MLTs) can receive transfer credit for biological sciences, general microbiology, general chemistry, and organic chemistry/biochemistry courses.

<sup>3</sup>Hands-on lab required; an online lab is not acceptable.

<sup>4</sup>Alternative electives can be selected from any undergraduate Clinical Embryology and Reproductive Technology (CERT), Health

Sciences Programs (HSCI), and Medical Laboratory Science (MLS) courses courses, or others approved by the program director. Advanced standing from eligible transfer credit also can be considered.

<sup>5</sup>This requirement is completed at GW post matriculation.

<sup>6</sup>This requirement can be completed with transfer credit or at GW.

## SECONDARY BACHELOR'S

This is a secondary degree completion program.

Students must complete 120 credits consisting of 45 to 60 transfer credits to satisfy general education and program-specific prerequisite requirements and a minimum of 60 credits taken at GW.

Code	Title	Credits
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### University General Education Requirements

3 credits in critical thinking in the humanities

6 credits in critical thinking, quantitative reasoning, or scientific reasoning in the social sciences

3 credits in quantitative reasoning (college algebra, statistics, or higher)

3 credits of English Composition

Oral communication component satisfied by CERT 3005 program requirement.<sup>1</sup>

Writing in the disciplines (WID) coursework satisfied by MLS 2007W and MLS 3001W program requirements.<sup>1</sup>

### Program prerequisites

8 credits in general biology I and II

3 credits in chemistry or biochemistry<sup>2</sup>

4 credits in microbiology with lab<sup>2</sup>

3 credits in biotechnology<sup>2</sup>

19 to 24 credits in elective and/or additional required courses<sup>2</sup>

### Core courses for the major (60 credits) that must be taken at GW

CERT 3004	Endocrinology for Health Sciences
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CERT 3005	Current Topics in Biomedical Sciences
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CERT 4010	Clinical Human Embryology
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CERT 4012	Clinical Human Andrology
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CERT 4014	Human Reproductive Cryobiology
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CERT 4021	Laboratory Techniques in Reproductive Medicine
MLS 2007W	Microbes and Society
MLS 3000	Clinical Laboratory Mathematics
MLS 3001W	Professional Ethics for Medical Laboratory Scientists
MLS 4141	Immunology and Serology
MLS 4151	Molecular Diagnostics
MLS 4158	Laboratory Management and Operations
MLS 4171	Human Genetics

<sup>1</sup>Requirement completed post matriculation.

<sup>2</sup>Requirement can be completed via transfer credit or at GW