

USC SCHOOL	Leonard Davis School of Gerontology
ACADEMIC DEPARTMENT	Gerontology
GRADUATE PROGRAM	Master of Science in Aging Biology
POST CODE	2029
TERM EFFECTIVE DATE	Spring 2021

PROGRAM DESCRIPTION

A brief description of the graduate program.

The Master of Science in Aging Biology (MSAB) program explores the multidisciplinary aspect of the biology of aging using a combination of in class instruction and lab-based skills training. Students will receive a comprehensive understanding of the Biology of Aging, including education on the fundamental biological hallmarks of aging, human aging and physiology, modern data-driven approaches to aging biology research, and other aspects of gerontology research. This program is aimed at providing extensive research experience to prepare students for future admissions into competitive academic biomedical PhD, MD, or MD/PhD programs, or for careers in biotechnology and industry. The MSAB degree is a 32-36-unit program. Students typically complete the degree in two years of full-time study and is a fully residential program.

COMMON BACHELOR DEGREE PROGRAM PATHWAYS

A list of common bachelor's degrees that undergraduate students pursue in advance of pursuing a progressive degree option with this graduate program. Some programs are restricted to certain majors while others are open to all students.

Open to all majors. Applicants should have a foundation in biological sciences.	
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PREPARATORY UNDERGRADUATE COURSES

A list of courses at the undergraduate level that prepare students for the graduate program. Required coursework is listed first, followed by recommended courses. If there are none, that is specified instead.

Dept. Prefix - Course #	Course Title	Required or Recommended	Units
BISC 120L	General Biology: Organismal Biology and Evolution	Recommended	4
BISC 220L	General Biology: Cell Biology and Physiology	Recommended	4
GERO 310	Physiology of Aging	Recommended	4

UNDERGRADUATE COURSES USED TO REDUCE GRADUATE LEVEL UNITS

A list of undergraduate level courses that may be used to reduce the number of graduate level units required for the graduate program. If there are none, that is specified instead.

Dept. Prefix - Course #	Course Title	Units
	None	

CORE GRADUATE PROGRAM REQUIREMENTS (# units required)

A list of all required graduate courses for the graduate program. None of these courses may be used toward satisfying undergraduate degree requirements.

If special exceptions for any of these courses are made by the academic department, the course # is marked with an asterisk () and the exception is explained in the "Department Notes" section at the end of this course plan template.*

Dept. Prefix - Course #	Course Title	Units
GERO 510	Physiology of Aging	4
GERO 516	Introduction to Genomics Science for Biologists	4
GERO 590	Directed Research	12*
GERO 594a	Master's Thesis	2
GERO 594b	Master's Thesis	2
GERO Elective	Graduate Degree Elective (selected in consultation with an advisor)	8
	*12 units minimum required, students may complete up to 4 additional units not applied to the degree in the summer between year 1 and year 2	

PRE-APPROVED ELECTIVE COURSEWORK

Elective coursework is approved at the discretion of the academic department. Note the following details about the total number and units required of elective coursework.

2	TOTAL ELECTIVE COURSES REQUIRED FOR THE TRADITIONAL GRADUATE DEGREE
8	TOTAL ELECTIVE UNITS REQUIRED FOR THE TRADITIONAL GRADUATE DEGREE

TOTAL UNIT COUNTS AND REQUIRED GRADUATE UNITS

32	TOTAL UNITS REQUIRED FOR THE TRADITIONAL GRADUATE DEGREE
0	TOTAL GRADUATE UNITS THAT MAY BE WAIVED (IF ANY)
28	MINIMUM NUMBER OF GRADUATE UNITS THAT MUST BE AT THE 500 LEVEL OR ABOVE

NOTES FROM THE DEPARTMENT

This section highlights any unique considerations, exceptions, or requirements for the graduate program. If a program has specific restrictions (courses, majors, etc.), they are detailed below.

APPLICATION REQUIREMENTS:

Your statement of interest plays an important role in helping our faculty consider your application for graduate study. The following prompt is designed to help you but is not an exhaustive list of information you should include in your statement. We recommend that your statement does not exceed 1 page or 500 words. The statement should be included as part of the university PDP application.

- Tell us why you chose to apply to the USC Leonard Davis School of Gerontology;
- Tell us about any experiences in Gerontology and the Biology of Aging;
- Describe any relevant research experience or any non-academic work experience and skills that can be applied to a laboratory;
- Describe your educational and short- and long-term career goals;
- Please describe your strengths and weaknesses;
- Tell us whether you are currently involved in a USC research lab (note faculty name, department, and area of research)
- Please identify 3 [three] faculty in the School of Gerontology who you would want to do research work with and state why you are specifically interested in their research program.

PROGRAM REQUIREMENTS:**Master's thesis requirements:**

Students will write a research thesis based on their original directed research, describing work breaking new research ground and making a novel contribution to the field of gerontology. They will then present and defend their capstone project to a chosen thesis committee formed of 3 program faculty.

Research:

The MSAB program heavily emphasizes research training throughout the program, and mastery of research concepts towards completion of a research project is required. In the first semester of the program, students will meet with program faculty, which will present their research programs to the participants. Students will interview will labs of interest to find a suitable fit. For the remainder of the program outside of classroom hours, students are expected to perform full-time directed research in the chosen Master's thesis lab.

Course Plan:**Core Classes [32-36 credits]****Year 1, Fall**

GERO 510 – 4 units; *Physiology of Aging*

GERO 590 – 4 units; *directed research*

Year 1, Spring

GERO 590 – 4 units; *directed research [commit to a lab for the next 1.5 years]*

GERO 516 – 4 units; *Introduction to Genomics Science for Biologists*

Year 1, Summer [optional]

GERO 590 – 4 units; *directed research*

Year 2, Fall

GERO 594a - 2 units; *Master's Thesis [selection of a thesis lab and project]*

GERO 590 – 2 units; *directed research*

GERO Elective – 4 units

Year 2, Spring

GERO 590 – 2 units; *directed research*

GERO 594b – 2 units; *Master's Thesis [submission and defense]*

GERO Elective – 4 units

Year 2, Summer [if needed]

GERO 594z – 0 units; *Master's Thesis [submission and defense]*

Electives [pick 2, 1 per semester in year 2]

- GERO 500 – 4 units; *Perspectives on a Changing Society: An Introduction to Aging*
- GERO 508 – 4 units; *The Mind and Body Connection through the Lifespan*
- GERO 513 – 2 units; *Fundamentals of Nutrition: Macronutrients*
- GERO 542 – 4 units; *Technology and Health Disparities*
- GERO 564 – 4 units; *Multiple Chronic Conditions, Polypharmacy and Geriatric Syndromes*
- GERO 566 – 4 units; *Cognitive Decline: Alzheimer's Disease and Dementia and Advances in Imaging*
- GERO 567 – 4 units; *Prevention of Chronic Disease through Nutrition, Physical Activity, and Lifestyle Changes*
- Other electives in GERO may be taken with approval from program directors.
-elective courses can be at Keck (biochemistry or molecular medicine programs)

Maria Henke

Name of Authorizing Master's Program Dean

8/5/25

Date Approved

Senior Associate Dean

Authorizing Dean's Title