

**Commission on Graduate Studies and Policies**  
**Resolution 2016-17K**  
**Resolution to Establish a Dairy Science Major within the Master of Science in**  
**Life Sciences Degree**

Approved, Commission on Graduate Studies and Policies	February 15, 2017
Reviewed/Waived by Faculty Senate	February 14, 2017
First Reading, University Council	March 13, 2017
Second Reading, University Council	March 27, 2017
Approved, President	March 27, 2017
Effective Date:	Summer I 2017

**WHEREAS**, the Master of Science in Dairy Science was discontinued effective fall 2017; and

**WHEREAS**, the Master of Science in Life Sciences degree offers students similar educational opportunities as the Master of Science degree in Dairy Science did; and

**WHEREAS**, the College of Agriculture and Life Sciences proposes a dairy science major within the Master of Science in Life Sciences degree; and

**WHEREAS**, the new major will prepare students for careers in dairy science; and

**WHEREAS**, Virginia Tech is uniquely suited to offer such a major due to its established partnerships in life sciences and animal science; and

**WHEREAS**, the establishment of the dairy science major aligns with the College of Agriculture and Life Sciences' strategic plan to enhance graduate student numbers; and

**WHEREAS**, the proposed major will increase the quality of graduate programs and the number of students completing degrees;

**THEREFORE, BE IT RESOLVED**, that the Major in Dairy Science be approved for addition to the Master of Science in Life Sciences effective Spring 2017 and the proposal forwarded through University governance and to the President for approval.

**Master of Science in Life Sciences  
Major in Dairy Science**

**Graduation Requirements:**

All students will be admitted through the Graduate School and must meet the general requirements for graduate admission to Virginia Tech and the program. The DASC program has an approved program in place for meeting the CGSP Resolution on graduate ethics. The same requirements will be maintained. All Graduate School and program requirements must be successfully completed for graduation, including a minimum of 20 credit hours of course work and 6 credit hours of research for the thesis-based M.S. Time to completion of the degree will be usually 2-3 years and a QCA of 3.0 or above must be maintained.

**Master of Life Sciences Degree requirements:**

		<u>Credits</u>
4000 level courses	Maximum	6
5000 level courses	Minimum	15
Seminar	Minimum	2
Research and Thesis	Minimum	6
Total Graduate Hours	Minimum	30

**Master of Life Sciences, Major in Dairy Science Requirements:**

<b>MSLS Core Courses</b>	<b>Credits</b>
BCHM 5124 Biochemistry in Life Sciences - Fall	3
STAT 5615 Statistics in Research – Fall	3
STAT 5616 Statistics in Research - Spring	3
ALS 5204 Research and Information Systems in Life Sciences - Fall	3
ALS 5964 Field Work/Practicum – Fall/Spring	1
ALS 5324 Research Ethics in Agriculture and Life Sciences - Fall	1
ALS 5334 Professional Communication in Ag and Life Sciences – Spring	1
<b>Other</b>	
DASC 5004 - Dairy Science Graduate Seminar	2
DASC 5994 – Research and Thesis (min-max)	6-10
Electives (at least one 5000-level course relevant to the major). For example, ALS 5304 - Advanced Physiology and Anatomy of Domestic Animals ALS 5314 - Comparative Reproductive Physiology BCHM 5344 - Molecular Biology for Life Sciences	3-7

In addition, DASC Option students must also complete the following classes/training.

CITI: Basic Responsible Conduct of Research Course  
GTA Training Workshop (GRAD 5004)

### **Justification**

Master's-level enrollments and degrees awarded in Dairy Science are near or below minimum productivity standards based on the new requirements defined by the State Council of Higher Education for Virginia. Because the related doctoral programs carried a different CIP designation and title (Ph.D. Animal and Poultry Science rather than Ph.D. in Dairy Science), State Council staff determined that the MS in Dairy Science did not meet the definition of a "fall-back" master's program exempt from review or action related to productivity.

This new Dairy Science Major in the Master of Science in Life Sciences program is a thesis-based degree whose focused research is accounted for by 6-10 credit hours of supervised research on a dairy related topic. Research results are presented orally in an organized seminar class consisting of other Dairy Science graduate students, faculty and staff. It is also expected that research results will be published in an appropriate scientific journal. The thesis research is supported by the MSLS core and 4-8 credit hours of other classes that relate to the chosen project. These support classes include those offered by the Dairy Science Department and relevant classes taught by other departments. For example, a student working on mammary development might take a class on animal histology whereas a student interested in dairy nutrition a class on mathematical modeling of nutrient fluxes in the cow. In other words, the 4-8 hours of graded classroom credit needs to include the flexibility of choosing classes from across the college and university. The exact classes needed are determined by the student's advisory committee, the major professor, and the student.

### **Target audience for the major:**

Our target market will continue to be outstanding MS students recruited worldwide and placement of graduates in Dairy industry (research, academics, industry, and government positions) in the USA and abroad.

### **Resource needs: funding, faculty, facilities, other department resources, library, other:**

No additional resources at this time.



VirginiaTech

College of Agriculture  
and Life Sciences

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October 5, 2016

CALS Curriculum Committee  
VT Campus

Re: Masters of Science in Life Sciences – Dairy Science Major

Dear Curriculum Committee:

Our long-standing M.S. in Dairy Science degree was recently deactivated as a result of increased proportions of students pursuing our Ph.D. degree. However, an M.S. degree that provides a major and research experience in Dairy Science is actively sought and successful candidates are highly relevant to our academic and industry communities. Our students are increasingly involved in multidisciplinary projects with a common base in the Life Sciences.

Consequently, we would like to join the MSLS degree with a major in Dairy Science. We require no new resources to join the MSLS degree and I support the inclusion of DASC and DASC 5994 to be listed as requirements.

5004


Sincerely yours,

Benjamin Corl, Ph.D.  
Associate Professor and Interim Department Head  
Department of Dairy Science

*Invent the Future*



TO: CALS College Curriculum Committee

FROM: Susan Sumner,   
Associate Dean and Director of Academic Programs

RE: Dairy Science Major in Master of Science in Life Sciences Degree

DATE: November 1, 2016

The Master of Science degree in dairy science was discontinued in 2015. However, there is still a demand for graduate students with dairy science expertise so a new dairy science major within the current Master of Science in Life Sciences degree is proposed. There are currently six other majors in the degree. A dairy science major will complement these other majors. The life sciences degree requires a core of 15-credit hours. In addition to the core credit hours, students in the dairy science major will take dairy sciences courses and complete a research thesis. The student's graduate committee would determine the dairy science or other related courses to be taken by the student.

## Taylor, Anna

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**From:** Sumner, Susan  
**Sent:** Wednesday, October 12, 2016 7:43 AM  
**To:** Taylor, Anna  
**Subject:** Re: MS in Life Sci - Dairy Science

**Importance:** High

It is acceptable for these courses to be listed on the check sheet.

Susan

Susan Sumner  
Associate Dean and Director of Academic Programs  
College of Agriculture and Life Sciences  
Litton Reaves , 1060, Virginia Tech (0334)  
175 West Campus Drive  
Blacksburg, VA 24061  
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540-231-5290  
540-231-6741 (fax)

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**From:** Anna Taylor <[ataylor@vt.edu](mailto:ataylor@vt.edu)>  
**Date:** Tuesday, October 11, 2016 at 6:40 PM  
**To:** sumners <[sumners@vt.edu](mailto:sumners@vt.edu)>  
**Subject:** MS in Life Sci - Dairy Science

Dear Dr. Sumner,

Attached is a copy of a proposal with a list of class requirements for the new Master of Science in Life Sciences – Dairy Science major, in the College of Agriculture and Life Sciences, that is being added to the current master of science in life sciences. A resolution to discontinue the Master of Science in Dairy Science was approved last year. We appreciate your support for horticulture in this same regard.

ALS 5204, Research & Information Systems Life Sciences; ALS 5324, Research Ethics in Agriculture and Life Sciences; ALS 5334, Professional Communications ALS; and ALS 5405, Analysis of Animal Experiments with SAS are listed as core classes for Master of Science in Life Sciences and is already a core class for the master's program so there will not be an increase in student enrollment for this course for this major.

Please reply back to this email as to whether or not it is acceptable for ALS 5204, ALS 5324, ALS 5334, and ALS 5405 to be listed as Master of Life Sciences core classes. I need your reply by the end of the day on **Friday, October 14** if possible so that this proposal can be reviewed at our next curriculum committee meeting.

Please let me know if you have any questions.

## Taylor, Anna

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**From:** Fricker, Ronald  
**Sent:** Wednesday, October 12, 2016 7:40 AM  
**To:** Taylor, Anna  
**Cc:** Sumner, Susan  
**Subject:** Re: MS in Life Sci - Dairy Science

**Importance:** High

Hi Anna,

The Department of Statistics agrees with this change. Please let me know if you need anything else.

Sincerely,  
Ron

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R.D. Fricker, Jr., Ph.D.  
Professor and Head  
Department of Statistics (MC0439)  
Hutcheson Hall, RM 406-A, Virginia Tech  
250 Drillfield Drive  
Blacksburg, VA 24061

(540) 231-7754 (office)  
(831) 869-8414 (cell)  
rf@vt.edu

*Statistics is the grammar of science.* —Karl Pearson

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**From:** "Taylor, Anna" <[ataylor@vt.edu](mailto:ataylor@vt.edu)>  
**Date:** Tuesday, October 11, 2016 at 6:27 PM  
**To:** Ron Fricker <[fricker@vt.edu](mailto:fricker@vt.edu)>  
**Cc:** "Sumner, Susan" <[sumners@vt.edu](mailto:sumners@vt.edu)>  
**Subject:** MS in Life Sci - Dairy Science

Dear Dr. Fricker,

Attached is a list of class requirements for the new Master of Science in Life Sciences – Dairy Science major, in the College of Agriculture and Life Sciences, that is being added to the current master of science in life sciences. A resolution to discontinue the Master of Science in Dairy Science was approved last year. We appreciate your support for horticulture in this same regard.

STAT 5615, Statistics in Research 1, and STAT 5616, Statistics in Research 2 are listed as core classes for Master of Science in Life Sciences and is already a core class for the master's program so there will not be an increase in student enrollment for this course for this concentration.

Please reply back to this email as to whether or not it is acceptable for STAT 5615 and STAT 5616 to be listed as Master of Life Sciences core classes. I need your reply by the end of the day on **Friday, October 14** if possible so that this proposal can be reviewed at our next curriculum committee meeting.

## Taylor, Anna

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**From:** Pablo Sobrado <psobrado@vt.edu>  
**Sent:** Wednesday, October 12, 2016 3:18 PM  
**To:** Taylor, Anna  
**Cc:** Sumner, Susan  
**Subject:** Re: MS in Life Sci - Dairy Science

**Importance:** High

Hi Anna,

Yes, it is acceptable to include BCHM 5124 as a core course for the MSLS/Dairy Science major.

Best,

Pablo

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Dr. Pablo Sobrado  
Professor  
Graduate Program Director  
Director of the Center for Drug Discovery Screening Lab  
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On Oct 11, 2016, at 6:45 PM, Taylor, Anna <[ataylor@vt.edu](mailto:ataylor@vt.edu)> wrote:

Dear Dr. Sobrado,

Attached is a copy of a proposal with a list of class requirements for the new Master of Science in Life Sciences – Dairy Science major, in the College of Agriculture and Life Sciences, that is being added to the current master of science in life sciences. A resolution to discontinue the Master of Science in Dairy Science was approved last year. We appreciate your support for horticulture in this same regard.

BCHM 5124, Life Sciences Biochemistry, is listed as a core class for Master of Science in Life Sciences and is already a core class for the master's program so there will not be an increase in student enrollment for this course for this major.

Please reply back to this email as to whether or not it is acceptable for BCHM 5124 to be listed as a Master of Life Sciences core class. I need your reply by the end of the day on **Friday**,