

# Veterinary Medical Science

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## Admission Criteria

To be admitted to the Veterinary Medical Sciences Graduate Program the applicant must either hold a D.V.M. degree from a recognized college of veterinary medicine or have at least a bachelor's degree from a fully recognized four-year institution of higher learning. The scholastic record for all undergraduate, graduate, and professional school coursework will be reviewed and should exceed a minimum GPA of 3.00 for undergraduate work; GPA of 3.00 for graduate work; GPA of 2.75 for the four years of the veterinary curriculum or 2.75 for the last two years of the veterinary curriculum. Also required are three reference letters, a minimum TOEFL score of 550 PBT (213 CBT or 79 iBT) or IELTS score of 6.5 for international students from countries whose primary language is not English, and if a Graduate Record Examination (GRE) score is available it will be considered.

## Provisional Admission

In special circumstances a student who does not meet admission criteria may be admitted provisionally if approved by the Graduate Program Advisory Committee. See Provisional Admission under Admission in this publication for provisional requirements.

## Academic Performance

If a student does not show satisfactory progress toward meeting academic, research, and/or thesis requirements, his/her performance will be reviewed in a meeting with the student's graduate committee. This committee may recommend a change in the student's program or recommend that the student be dismissed from the degree program in the College of Veterinary Medical Science program. Students must follow all guidelines outlined in the Graduate Catalog.

## Master of Science in Veterinary Medical Science (VMS) - Population Medicine Non-Thesis Concentration (PMNT)

Graduate-level coursework credits (at least 15 hours of all coursework credits must be 8000-level or above) <sup>1</sup>	31
Statistics course <sup>1,2</sup>	3
CVM 8011 Seminar <sup>1</sup>	1
or CVM 8091 Current Topics in Production Animal Medicine	
<b>Total Hours</b>	<b>35</b>

<sup>1</sup> Equivalency of seminars and coursework is determined by the student's graduate committee.

<sup>2</sup> Previous graduate level statistics courses can satisfy this requirement with approval of the student's graduate committee. Transfer of credit for any previously taken courses is subject to the MSU *Bulletin of the Graduate School* policy. Graduate level statistics courses that have counted towards a previous degree can satisfy this policy but will not be calculated towards the Ph.D. coursework hours.

A final examination (oral and/or written) which covers both the major and supportive fields and includes defense of the thesis is required. Students must present an open seminar of the thesis research just prior to oral final examinations. The student must adhere to the University and College regulations regarding his/her graduate program.

## Master of Science in Veterinary Medical Science (VMS) - Veterinary Medical Research Concentration (VMRC)

Graduate-level coursework (at least 12 hours of all coursework credits must be 8000-level or above) <sup>1</sup>	20
One statistics course <sup>1,2</sup>	3
One seminar course (CVM 8011 or equivalent) <sup>1</sup>	1
CVM 8000 Thesis Research/ Thesis in Veterinary Medicine	6
<b>Total Hours</b>	<b>30</b>

<sup>1</sup> Equivalency of seminars and coursework is determined by the student's graduate committee.

- <sup>2</sup> Previous graduate-level statistics courses can satisfy this requirement with approval of the student's graduate committee. Graduate-level statistics courses that have counted towards a previous degree can satisfy this policy but will not be calculated towards the Ph.D. coursework hours.

A final examination (oral and/or written) which covers both the major and supportive fields and includes defense of the thesis is required. Students must present an open seminar of the thesis research just prior to oral final examinations. The student must adhere to the University and College regulations regarding his/her graduate program.

## Master of Science in Veterinary Medical Science (VMS) - Computational Biology Concentration (VCBC)

Graduate-level courses (at least 12 hours of all coursework credits must be 8000-level or higher) <sup>1</sup>	11
BCH 8653 Genomes and Genomics	3
or PSS 8653 Genomes and Genomics	
CSE 6613 Bio-computing	3
CSE 6623 Computational Biology	3
One statistics course <sup>1,2</sup>	3
One seminar course (CVM 8011 or equivalent) <sup>1</sup>	1
CVM 8000 Thesis Research/ Thesis in Veterinary Medicine	6
<b>Total Hours</b>	<b>30</b>

<sup>1</sup> Equivalency of seminars and coursework is determined by the student's graduate committee.

<sup>2</sup> Previous graduate-level statistics courses can satisfy this requirement with approval of the student's graduate committee. Graduate-level statistics courses that have counted towards a previous degree can satisfy this policy but will not be calculated towards the Ph.D. coursework hours.

A final examination (oral and/or written) which covers both the major and supportive fields and includes defense of the thesis is required. Students must present an open seminar of the thesis research just prior to oral final examinations. The student must adhere to the University and College regulations regarding his/her graduate program.

## Master of Science in Veterinary Medical Science (VMS) - Infectious Diseases Concentration (VIDC)

CVM 8303 Advanced Immunology	3
BCH 6013 Principles of Biochemistry	3
or BCH 6713 Molecular Biology	
One statistics course <sup>1,2</sup>	3
One seminar course (CVM 8011 or equivalent) <sup>1</sup>	1
Graduate-level courses (at least 12 hours of all coursework must be at 8000 level or higher) <sup>1</sup>	14
CVM 8000 Thesis Research/ Thesis in Veterinary Medicine	6
<b>Total Hours</b>	<b>30</b>

<sup>1</sup> Equivalency of seminars and coursework is determined by the student's graduate committee.

<sup>2</sup> Previous graduate level statistics courses can satisfy this requirement with approval of the student's graduate committee. Graduate-level statistics courses that have counted towards a previous degree can satisfy this policy but will not be calculated towards the Ph.D. coursework hours.

A final examination (oral and/or written) which covers both the major and supportive fields and includes defense of the thesis is required. Students must present an open seminar of the thesis research just prior to oral final examinations. The student must adhere to the University and College regulations regarding his/her graduate program.

## Master of Science in Veterinary Medical Science (VMS) - Toxicology Concentration (TOXI)

CVM 8543 Mechanisms of Toxic Action	3
or CVM 8513 Applied Veterinary Epidemiology	
or CVM 8533 Organ Systems Toxicology II	
CVM 6513 Environmental Toxicology	3

One statistics course <sup>1, 2</sup>	3
On seminar course (CVM 8011, 8091, or equivalent) <sup>1</sup>	1
Graduate-level courses (at least 12 credits of all coursework must be 8000-level or higher)	14
CVM 8000                      Thesis Research/ Thesis in Veterinary Medicine	6
<b>Total Hours</b>	<b>30</b>

<sup>1</sup>        Equivalency of seminars and coursework is determined by the student's graduate committee.

<sup>2</sup>        Previous graduate-level statistics courses can satisfy this requirement with approval of the student's graduate committee. Graduate-level statistics courses that have counted towards a previous degree can satisfy this policy but will not be calculated towards the Ph.D. coursework hours.

A final examination (oral and/or written) which covers both the major and supportive fields and includes defense of the thesis is required. Students must present an open seminar of the thesis research just prior to oral final examinations. The student must adhere to the University and College regulations regarding his/her graduate program.

## Doctor of Philosophy in Veterinary Medical Science (VMS) - Veterinary Medical Research Concentration (VMRC) (for students with a master's degree)

Two statistics courses <sup>1, 2</sup>	6
Three seminar courses (CVM 8011 or equivalent)	3
Graduate-level courses (at least 12 hours of all coursework at 8000-level or higher) or additional CVM 9000 credits <sup>1</sup>	31
CVM 9000                      Dissertation Research/ Dissertation in Veterinary Medicine	20
<b>Total Hours</b>	<b>60</b>

<sup>1</sup>        Equivalency of seminars and coursework is determined by the student's graduate committee.

<sup>2</sup>        Previous graduate level statistics courses can satisfy this requirement with approval of the student's graduate committee. Transfer of credit for any previously taken courses is subject to the MSU *Bulletin of the Graduate School* policy. Graduate level statistics courses that have counted towards a previous degree can satisfy this policy but will not be calculated towards the Ph.D. coursework hours.

## Doctor of Philosophy in Veterinary Medical Science (VMS) - Veterinary Medical Research Concentration (VMRC) (for students with a bachelor's but no master's degree)

Two statistics courses <sup>1, 2</sup>	6
Three seminar courses (CVM 8011 or equivalent) <sup>1</sup>	3
Graduate-level courses (at least 12 hours of all coursework at 8000 level or higher)	15
CVM 9000                      Dissertation Research/ Dissertation in Veterinary Medicine	20
Additional graduate-level coursework and/or CVM 9000 credits <sup>3</sup>	46
<b>Total Hours</b>	<b>90</b>

<sup>1</sup>        Equivalency of seminars and coursework is determined by the student's graduate committee.

<sup>2</sup>        Previous graduate-level statistics courses can satisfy this requirement with approval of the student's graduate committee. Graduate-level statistics courses that have counted towards a previous degree can satisfy this policy but will not be calculated towards the Ph.D. coursework hours.

<sup>3</sup>        Students must have 24 hours of graduate coursework to graduate with a Ph.D. in VMS.

## Doctor of Philosophy in Veterinary Medical Science (VMS) - Computational Biology Concentration (VCBC) (for students with a master's degree)

BCH 8653                      Genomes and Genomics	3
or PSS 8653                      Genomes and Genomics	
CSE 6613                      Bio-computing	3
CSE 6623                      Computational Biology	3
Three seminar courses (CVM 8011 or equivalent) <sup>1</sup>	3
Two graduate-level statistics courses	6
Graduate-level courses (at least 12 hours of all coursework at 8000-level) or additional CVM 9000 credits	22

CVM 9000	20
<b>Total Hours</b>	<b>60</b>

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- <sup>2</sup> Previous graduate level statistics courses can satisfy this requirement with approval of the student's graduate committee. Graduate-level statistics courses that have counted towards a previous degree can satisfy this policy but will not be calculated towards the Ph.D. coursework hours.

### **Doctor of Philosophy in Veterinary Medical Science (VMS) - Computational Biology Concentration (VCBC) (for students with a bachelor's but no master's degree)**

BCH 8653	Genomes and Genomics	3
or PSS 8653	Genomes and Genomics	
CSE 6613	Bio-computing	3
CSE 6623	Computational Biology	3
Three seminar courses (CVM 8011 or equivalent) <sup>1</sup>		3
Two graduate-level statistics courses		6
Graduate level courses (at least 12 hours of all coursework at 8000 level or higher)		6
CVM 9000	Dissertation Research/ Dissertation in Veterinary Medicine	20
Graduate-level coursework and/or additional CVM 9000 credits <sup>3</sup>		46
<b>Total Hours</b>		<b>90</b>

- <sup>1</sup> Equivalency of seminars and coursework is determined by the student's graduate committee.
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- <sup>3</sup> Students must have 24 hours of graduate coursework to graduate with a Ph.D. in VMS.

### **Doctor of Philosophy in Veterinary Medical Science (VMS) - Infectious Diseases Concentration (VIDC) (for students with a bachelor's but no master's degree)**

CVM 8303	Advanced Immunology	3
BCH 6013	Principles of Biochemistry	3
or BCH 6713	Molecular Biology	
Two statistics courses <sup>1,2</sup>		6
Three seminar courses (CVM 8011 or equivalent)		6
Graduate-level courses (at least 12 hours of all coursework at 8000-level or higher) <sup>3</sup>		22
CVM 9000	Dissertation Research/ Dissertation in Veterinary Medicine	20
<b>Total Hours</b>		<b>60</b>

- <sup>1</sup> Equivalency of seminars and coursework is determined by the student's graduate committee.
- <sup>2</sup> Previous graduate-level statistics courses can satisfy this requirement with approval of the student's graduate committee. Graduate-level statistics courses that have counted towards a previous degree can satisfy this policy but will not be calculated towards the Ph.D. coursework hours.
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### **Doctor of Philosophy in Veterinary Medical Science (VMS) - Infectious Diseases Concentration (VIDC)**

CVM 8303	Advanced Immunology	3
BCH 6013	Principles of Biochemistry	3
or BCH 6713	Molecular Biology	
Two statistics courses <sup>1,2</sup>		6
Three seminar courses (CVM 8011 or equivalent) <sup>1</sup>		3
Graduate-level courses (at least 12 hours of all coursework must be at 8000 level or higher)		15
CVM 9000	Dissertation Research/ Dissertation in Veterinary Medicine	20

Additional graduate-level coursework and/or CVM 9000 credits 46

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**Total Hours 90**

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