PSM Biotechnology Program (MS & Combined) – for the 2026 Academic Year

General scheduling information (be sure to consult your advisor)

1) Graduation requirements:
   IF YOU BEGAN FALL 2018 or later: a minimum of 37 credits; minimum GPA of 3.0
   Scientific Communication & Lab Techniques are now required & need to be taken your first Fall semester.
2) Average number of credits/semester for full-time graduate student status: 9
3) *The italics in the schedule below indicate the **recommended** semester to ensure proper preparation for later courses.*
4) Be sure to use MyPath to chart your progress through the program.
5) We have one new-ish Fall elective, CMB 560, which is part of the new Bioinformatics Genomics Certificate Program. See the description on p 3.
6) Students who have completed all coursework, but have not yet graduated, must register for 1 credit of CMB 696 each semester for continuous registration.
7) Be sure to request a graduation audit during your second to the last semester.
8) ***Be sure to consult your advisor so your particular background can be taken into account in order ensure your success.***

Regarding specific courses:

1) STA 610-01 can substitute for STA 622. Unless you are experienced with statistics, we do not recommend taking statistics in your first semester at GVSU. Note – CMB/Biotech students can take only certain sections (see page 3).
2) CMB 626 Advanced Research Applications in Nucleic Acids is offered both semesters. This is an intensive course & you want to be sure you have the necessary preparation. ***IF*** you do not have a good amount of laboratory experience before beginning the PSM program, it can be better to wait until your second year to take CMB 626 so you can take the two other required lab courses beforehand (CMB 520 Lab Techniques & CMB 620 Cell Culture & Bioprocessing). ***CMB 626 sometimes fills quickly, so do not delay in registering for this class.*** If you cannot register because the course is full, please keep in close contact with the listed instructor.
3) Take no more than 9-10 credits during the CMB 626 Advanced Research Applications in Nucleic Acids semester.
4) The PSM 662 Seminar course requires you to have taken some courses in your discipline beforehand, so do not take it your first semester.

Program requirements → PSM CMB Biotechnology MS, Combined → total credits required = 37

Course	Required courses	Credits
CMB 501	Scientific Communication	3
CMB 505	Advanced Cell Biology	3
CMB 506	Advanced Molecular Biology	3
CMB 520	Laboratory Techniques	3
CMB 610	Foundations of Biotechnology	3
CMB 620	Cell Culture & Bioprocessing	3
CMB 626	Advanced Research Applications in Nucleic Acids	4
CIS 661	Medical & Bioinformatics	3
STA 622	Statistical Methods for Biologists	3
PSM 650	Ethics & Professionalism	3
PSM 662	PSM Seminar	2
PSM 691	Internship	4
Subtotal	**Required credits**	**37**
Subtotal	**Elective credits**	**0**
TOTAL CREDITS		**37**

- **STA 610-01 Statistics for Health Professions can substitute for STA 622**

CMB elective course offerings – Depending on your post-GVSU plans & specific interests, certain elective courses may be valuable for your career. Also, keep in mind that other departments might have graduate courses of interest to you (Biomedical Sciences (BMS), Biology (BIO), etc.).

CMB 509	Responsible Conduct for Research	1 cr	Winter
CMB 551	Bioinformatics for Life Sciences	3 cr	Fall
CMB 552	Computer Modeling & Drug Design	3 cr	Winter
CMB 560	Genomics & Molecular Diagnostics	3cr	Fall –*Description on next page*
CMB 585	Molecular Ecology	3 cr	Winter
STA 616	Statistical Programming	3 cr	Winter

Example scheduling – Combined degree students should look at the example schedule at the CMB Combined Degree link

Semester/Course	Credits	When/where*	Additional course offerings
Fall – 1st year			
CMB 501 Scientific Communication	3	W 9-12:50, 1173 KHS	
CMB 520 Lab Techniques	3	F 9-12:50, 3369 KHS	
1 course	2-3		CMB 505, CMB 551, CMB 560, CMB 610, PSM 650, STA 610-01 OR 622, CIS 661
Total	**8-9**		
Winter			
CMB 620 Cell Culture & Bioprocessing	3	W 1-4:50, 543 CHS	or CMB 626
CMB 506 Advanced Molecular Biology	3	W 6-8:50, 710 EC	
1 additional course ***(*do not take > 9-10 credits total if taking CMB 626)***	3-4		CMB 509 (1 cr), CMB 610, CMB 552, CMB 626 (4 cr), STA 610-01, CIS 661, PSM 650, PSM, PSM 662 (2 cr), PSM 691 (up to 4 cr)
Total	**9-10**		
Spring/Summer			
1-2 courses			PSM 650, PSM 662 (2 cr), PSM 691 (up to 4 cr)
Total	**2-6**		
Fall – 2nd year			
CMB 505 Advanced Cell Biology	3	Th 6-8:50, 203E DEV	
CMB 626 Advanced Research Applications in Nucleic Acids	4	MW 1-3:50, 543 CHS	
1 additional course ***(*do not take > 9-10 credits total if taking CMB 626)***	2-3		CMB 551, CMB 560, CMB 610, PSM 650, PSM 662 (2 cr), PSM 691 (up to 4 cr), STA 610-01 OR 622, CIS 661
Total	**9-10**		
Winter			
3 additional courses ***(*do not take > 9-10 credits if taking CMB 626)***	9		CMB 509 (1 cr), CMB 610, CMB 552, CMB 626, STA 610-01, CIS 661, PSM 650, PSM 691 (up to 4 cr)
Total	**~ 9**		
Spring/Summer			
Courses if necessary	2-6		PSM 650, PSM 662 (2 cr), PSM 691 (up to 4 cr)

Required & elective courses –

Offered Fall only

CMB 501	Scientific Communication (W 9-12:50, 1173 KHS)
CMB 505	Advanced Cell Biology (Th 6-8:50, 203E DEV)
CMB 520	Lab Techniques (F 8-11:50, 543 CHS)
CMB 551	Bioinformatics for Life Sciences (T 6-8:50, 204A DEV)
CMB 560	Genomics & Molecular Diagnostics (W 6-8:50, 420 EC) – *newer course!*
STA 622	Statistical Methods for Biologists (W 6-8:50, A2111 MAK)

Offered Winter only

CMB 509	Responsible Conduct of Research (T 10-10:50, 1179 KHS)
CMB 506	Advanced Molecular Biology (W 6-8:50, 710 EC)
CMB 552	Computer Modeling & Drug Design (M 6-8:50, 233 CHS)
CMB 620	Cell Culture & Bioprocessing (W 1-4:50, 543 CHS)

Offered multiple semesters

CMB 610	Foundations in Biotechnology – Fall (Th 6-8:50) & Winter (M 6-8:50), 710 EC
CMB 626	Adv Research Applications in Nucleic Acids – Fall (MW 1-3:50) & Winter (MW 9-11:50), 543 CHS
PSM 650	Ethics & Professionalism – Fall (W 6-8:50, 418 EC), Winter (online), Summer (MW 6-8:50, 419 EC OR online for the entire summer); fulfills the requirement for Responsible Conduct of Research training
PSM 662	Seminar (2 cr) - Fall & Winter (MW 5-5:50, 617 EC) & Spring (T/Th 6-8:50, 617 EC)
PSM 691	Internship (minimum 4 cr) – *these don't need to be taken all in a single semester*
CIS 661	Intro to Medical & Bioinformatics – Fall (M 6-8:50, 612 EC OR hybrid with select T 6-8:50 sessions) & Winter (T 6-8:50, 612 EC)
STA 610	Applied Statistics for Health Professions – Fall, STA 610-01 (Th 6-8:50, KEN 122), Winter STA 610-03 (T/Th, 11:30-12:45 on the Allendale campus)

CMB 509 Responsible Conduct of Research (1 cr)

Consists of modules covering the principles and rules for best practice in research using lectures, discussions, case studies, and interactive exercises. Provides students with professional and ethical reasoning skills needed for success in their research and scholarly inquiry. Cross-listed with CMB 409. Offered winter semesters.

CMB 560 Genomics & Molecular Diagnostics (3 cr)

Provides principles & applications of genomics & molecular tools for disease diagnostics. Topics include molecular & computational tools of genomics, genome structure, diagnosis of disease, gene expression, & biological networks. Cross-listed with CMB 460. Offered fall semester. Note – this is one of three core courses for the Graduate Certificate in Bioinformatics & Genomics.

Graduate Certificate in Bioinformatics & Genomics

The certificate will be earned by successfully completing a minimum of four courses (12 credits). The three core courses are CMB 551 Bioinformatics for Life Sciences (Fall), CMB 560 Genomics and Molecular Diagnostics (Fall), & CMB 552 Computer Modeling & Drug Design (Winter). The fourth class is an elective chosen from a group of 11 courses offered by several departments such as Biology, CMB, Statistics, & Computer & Information Systems. Note that your STA requirement as a CMB PSM Biotechnology student will fulfill this certificate elective requirement. If you are interested in the certificate, you must apply to the program; see the CMB website for more information: https://www.gvsu.edu/cmb/certificates-93.htm (scroll down to reach the MS info).