

MD/PHD COURSE SEQUENCE
Academic Year 2021-2022

The courses listed here are courses in the Graduate School of Biomedical Sciences that you register for each term in the program both during the medical school years and full-time. Courses are listed by term.

Pre-Year One	Program Yr. One
Pre-Year One – Summer	
Basic Science Track (BBS)	
BBS 850 Lab Rotation/Research Assistantship <i>Register for one or two 4-week, 2-credit rotations. The four-week lab rotations should be with different faculty supervisors. Registration will be managed by the GSBS Office during the first term of the program.</i>	2 credits per rotation
Clinical and Population Health Research Track (CPHR)	
CTS 850 Research Assistantship <i>Register for one 8-week rotation with a faculty member in the CPHR Program. Registration will be managed by the GSBS Office during the first term of the program.</i>	4 credits
CTS 605A Introduction to Clinical Epidemiology – <i>Register with teaching faculty. It might be possible to take this class during the summer prior to year one; check with CPHR Program Director.</i>	3 credits
All Students	
Seminar: Professionalism and Research Conduct	Time/Day: TBD
Medical School, FOM1	
Year One – Fall	
All Students	
MDP 740 – A , Designing Solutions to Research Problems - Register with Director of MD/PhD Program	1 credit
MDP 800 MD/PhD Physician Scientist Forum - Register with Associate Director of MD/PhD Program	1 credit
Year One – Spring	
All Students	
MDP 740 – A , Designing Solutions to Research Problems - Register with Director of MD/PhD Program	1 credit
MDP 800 MD/PhD Physician Scientist Forum - Register with Associate Director of MD/PhD Program	1 credit
Year One – Summer	
All Students	
MDP 740 – A , Designing Solutions to Research Problems - Register with Director of MD/PhD Program	1 credit
Basic Science Track (BBS)	
BBS 850 Lab Rotation/Research Assistantship <i>Register for two 4-week, 2-credit rotations. The four-week lab rotations</i>	2 credits per rotation

Should be with different faculty supervisors. Lab descriptions are due in to the MPD Program Administrator and rotation agreements are due in the GSBS Office prior to the start of the summer term.

Clinical and Population Health Research Track (CPHR)

CTS 850 Research Assistantship 4 credits per rotation

Register for one 8-week, 4-credit rotation. The eight-week lab rotations can be with one faculty supervisors and register with faculty member. Lab rotation agreements are due in the GSBS Office prior to the start of the summer term.

CTS 605A Introduction to Clinical Epidemiology – Register with teaching faculty 3 credits

ALL STUDENTS interested in the CPHR track need to take this course prior to Yr. Two in Medical School. This will be the last opportunity to enroll before starting research career. Check with CPHR Program Director.

Medical School, FOM2

Program Yr. Two

Year Two – Fall

MDP 740 – B, Designing Solutions to Research Problems 1 credit

During second year this course is one-on-one with a faculty member of the student's choice. Registration must be with the faculty member for one credit per term.

MDP 800 MD/PhD Physician Scientist Forum - Register with Associate Director of MD/PhD Program 1 credit

Year Two – Spring

MDP 740 – B, Designing Solutions to Research Problems 1 credit

During second year this course is one-on-one with a faculty member of the student's choice. Registration must be with the faculty member for one credit per term.

MDP 800 MD/PhD Physician Scientist Forum - Register with Associate Director of MD/PhD Program 1 credit

Step One National Boards

Students are **REQUIRED** to take the Step-One National Boards prior to the start of the clerkship. Submit your board exam registration date to the MD/PhD Program Administrator one month before the test date. If you are seeking an extension on sitting for the exam, please contact the MD/PhD Program Director.

Year Two –Summer

MDP 743 Preparation for Thesis Research - Register with Director of MD/PhD Program 1 credit

School of Medicine – Complete one thematic section of CCE Year; Prior to the start of full-time research, second year students in the MD/PhD Program will complete several rotations in a clerkship thematic section. Remediation of a Shelf Exams must be remediated by the student on their own time while enrolled in FT research with GSBS.

Graduate School, Year One

Program Yr. Three

Year Three - Fall

Basic Science Track (BBS)

BBS 602 Preparation for Qualifying Examination (formerly known as “Scientific Communication”) 2 credits

Register with teaching faculty in GSBS

BBS 860 Qualifying Examination - Register with Associate Dean for Academic Affairs, Mary Ellen Lane 1 credit

BBS 870 – Pre-Qualifying Research - Register with your Thesis Advisor 9 credits

Advanced Topics or electives – if required by the Program that you are selecting

Clinical and Population Health Research Track (CPHR)

Each student in the CPHR track must complete the entire core curriculum as reviewed by the Program Director including CTS 702 Ethics for Clinical Research (RCR requirement).

CTS 870 Pre-Thesis Research – Register with your Thesis Advisor 9 credits

All Students

MDP 741 Introduction to Translational Medicine - Register with the MD/PhD Director, Silvia Corvera 1 credit

MDP 742 HIPAA and OSHA Certification - Register with the MD/PhD Program Administrator 1 credit
Online course in BB Learn that should be completed during fall term

MDP 800 MD/PhD Physician Scientist Forum - Register with Associate Director of MD/PhD Program 1 credit

Year Three – Spring

Basic Science Track (BBS)

BBS 870 – Pre-Qualifying Research - Register with your Thesis Advisor 9 credits

Advanced Topics or electives – if required by your Thesis Advisor

Clinical and Population Health Research Track (CPHR)

Each student in the CPHR track must complete the entire core curriculum as reviewed by the Program Director.

CTS 870 Pre-Thesis Research – Register with your Thesis Advisor 9 credits

All Students

MDP 741 Introduction to Translational Medicine - Register with the MD/PhD Co-Director, Silvia Corvera 1 credit

MDP 800 MD/PhD Physician Scientist Forum - Register with Associate Director of MD/PhD Program 1 credit

Year Three – Summer

Basic Science Track (BBS)

BBS 870 – Pre-Qualifying Research - Register with your Thesis Advisor 9 credits

OR

BBS900 – Thesis Research – Register with your Thesis Advisor 12 credits
If you will pass your QE prior to the 1st day of the Summer Semester, register for Thesis Research.

Advanced Topics or electives – if required by the Program that you are selecting

Clinical and Population Health Research Track (CPHR)

Each student in the CPHR track must complete the entire core curriculum as reviewed by the Program Director.

CTS 870 Pre-Thesis Research – Register with your Thesis Advisor 9 credits

All Students

MDP 741 Introduction to Translational Medicine 1 credit
Register with the Associate Director of the MD/PhD Program, Silvia Corvera

Graduate School, Year Two	Program Yr. Four
----------------------------------	-------------------------

Year Four - Fall

Basic Science Track (BBS)

BBS900 – Thesis Research – *Register with your Thesis Advisor* 12 credits
If you are delayed in passing your Qualifying Exam, please see the Program Administrator

BBS601 – Professionalism and Research Conduct (PARC) – Register with Associate Dean of GSBS 1 credit

BBS 865 MD/PhD TRAC Meeting – *Register with Associate Dean for Academic Affairs, Mary E. Lane* 1 credit

Advanced Topics or electives – if required by the Program that you are selecting

Clinical and Population Health Research Track (CPHR)

Each student in the CPHR track must complete the entire core curriculum as reviewed by the Program Director.

CTS 870 Pre-Thesis Research – *Register with your Thesis Advisor* 9 credits

All Students

MDP 741 Introduction to Translational Medicine - *Register with the MD/PhD Director, Silvia Corvera* 1 credit

MDP 742 HIPAA and OSHA Certification - *Register with the MD/PhD Program Administrator* 1 credit
Online course in BB Learn that should be completed during fall term

MDP 800 MD/PhD Physician Scientist Forum - Register with Associate Director of MD/PhD Program 1 credit

RCR Requirement: *Attend two IRB sessions during the academic year. Contact the IRB email for registration and meeting details.*

RCR Requirement: BBS 701 and BBS 703 Using Animals and/or Human Subjects (as needed) 2 credits (each)
Complete any required Human or Animal Subject courses necessary for your research during this academic year, either fall or spring, if you have not done so already.

Year Four - Spring

Basic Science Track (BBS)

BBS900 – Thesis Research – *Register with your Thesis Advisor* 12 credits
If you are delayed in passing your Qualifying Exam, please see the Program Administrator

BBS 865 MD/PhD TRAC Meeting – *Register with Associate Dean for Academic Affairs, Mary E. Lane* 1 credit

Advanced Topics or electives – if required by the Program that you are selecting

Clinical and Population Health Research Track (CPHR)

Each student in the CPHR track must complete the entire core curriculum as reviewed by the Program Director.

CTS 870 Pre-Thesis Research – *Register with your Thesis Advisor* 9 credits

OR

CTS 900 – Thesis Research – *Register with your Thesis Advisor* 12 credits
If you will pass your QE prior to the 1st day of the Spring Semester, register for Thesis Research.

All Students

MDP 741 Introduction to Translational Medicine - *Register with the MD/PhD Silvia Corvera* 1 credit

MDP 742 HIPAA and OSHA Certification - Register with the MD/PhD Program Administrator
Online course in BB Learn that should be completed during the fall term. 1 credit

MDP 800 MD/PhD Physician Scientist Forum - Register with Associate Director of MD/PhD Program 1 credit

Year Four - Summer

Basic Science Track (BBS)

BBS900 – Thesis Research – Register with your Thesis Advisor 12 credits
If you are delayed in passing your Qualifying Exam, please see the Program Administrator

Clinical and Population Health Research Track (CPHR)

Each student in the CPHR track must complete the entire core curriculum as reviewed by the Program Director.

CTS 900 – Thesis Research – Register with your Thesis Advisor 12 credits
If you will pass your QE prior to the 1st day of the Summer Semester, register for Thesis Research.

All Students

MDP 741 Introduction to Translational Medicine - Register with the MD/PhD Director,
Silvia Corvera 1 credit

Graduate School, Year Three and Beyond

Program Yr. Five+

Year Five - Fall

Basic Science Track (BBS)

BBS990 – Graduate Research – Register with your Thesis Advisor 0 credits
If you are delayed in passing your Qualifying Exam, please see the Program Administrator

BBS 865 MD/PhD TRAC Meeting – Register with Associate Dean for Academic Affairs, Mary E. Lane 1 credit

RCR Requirement: CTS 702 Research Ethics for Clinical Research – Register with CPHR Faculty
CPHR students who have already taken this class are exempt. This course is a weekly, classroom format with readings, presentations, exams and homework. 2 credits

Clinical and Population Health Research Track (CPHR)

Each student in the CPHR track must complete the entire core curriculum as reviewed by the Program Director.

CTS 990 – Thesis Research – Register with your Thesis Advisor 0 credits

CTS 865 MD/PhD TRAC Meeting – Register with Program Director, Kate Lapane 1 credit

All Students

MDP 741 Introduction to Translational Medicine - Register with the MD/PhD-Director,
Silvia Corvera 1 credit

MDP 742 HIPAA and OSHA Certification - Register with the MD/PhD Program Administrator
Online course in BB Learn that should be completed during the fall term. 1 credit

MDP 800 MD/PhD Physician Scientist Forum - Register with Associate Director of MD/PhD Program 1 credit

Year Five - Spring

Basic Science Track (BBS)

BBS990 – Graduate Research – Register with your Thesis Advisor 0 credits

If you are delayed in passing your Qualifying Exam, please see the Program Administrator

BBS 865 MD/PhD TRAC Meeting – Register with Associate Dean for Academic Affairs, Mary E. Lane 1 credit

Clinical and Population Health Research Track (CPHR)

Each student in the CPHR track must complete the entire core curriculum as reviewed by the Program Director.

CTS 990 – Thesis Research – Register with your Thesis Advisor 0 credits

CTS 865 MD/PhD TRAC Meeting – Register with Program Director, Kate Lapane 1 credit

All Students

MDP 741 Introduction to Translational Medicine - Register with the MD/PhD Director, Silvia Corvera 1 credit

MDP 742 HIPAA and OSHA Certification - Register with the MD/PhD Program Administrator 1 credit
Online course in BB Learn that should be completed during the fall term.

MDP 800 MD/PhD Physician Scientist Forum - Register with Associate Director of MD/PhD Program 1 credit

Year Five - Summer

Basic Science Track (BBS)

BBS990 – Graduate Research – Register with your Thesis Advisor 0 credits
If you are delayed in passing your Qualifying Exam, please see the Program Administrator

Clinical and Population Health Research Track (CPHR)

Each student in the CPHR track must complete the entire core curriculum as reviewed by the Program Director.

CTS 990 – Thesis Research – Register with your Thesis Advisor 0 credits

All Students

MDP 741 Introduction to Translational Medicine - Register with the MD/PhD Co-Director, Silvia Corvera 1 credit

Continue with the Fall, Spring and Summer Schedule if you are still in full-time research in GSBS.

Return to Medical School both Spring and Fall Dates

Complete the Spring Refresher Program for returning MD/PhD students to Medical School; contact Dr. David Hatem, MD

BBS Track and CPHR Track

MDP760 – Transition to Medical School – Register with Dave Hatem, MD 0 credits
This is a spring class offering only; take when return is the same academic year.

Medical School, Years Three and Four

MS Year Three/ Four - Fall

MDP – 740 C, Designing Solutions to Research Problems 1 credit
Register with the MD/PhD Program Administrator, Anne Michelson

MDP 990 MD/PhD Graduate Research 0 credit
Register with the MD/PhD Program Administrator, Anne Michelson

MDP 800 MD/PhD Physician Scientist Forum - Register with Associate Director of MD/PhD Program 1 credit

RCR Read: "On Being a Scientist: A Guide to Responsible Conduct in Research" – **CCE Year**

RCR Seminar: Attend a 2-hour classroom session to discuss the RCR Read – **AS Year**

MS Year Three/ Four - Spring

MDP – 740 C, Designing Solutions to Research Problems 1 credit
Register with the MD/PhD Program Administrator, Anne Michelson

MDP 990 MD/PhD Graduate Research 0 credit
Register with the MD/PhD Program Administrator, Anne Michelson

MDP 800 MD/PhD Physician Scientist Forum - Register with Associate Director of MD/PhD Program 1 credit

MS Year Three - Summer

MDP – 740 C, Designing Solutions to Research Problems 1 credit
Register with the MD/PhD Program Administrator, Anne Michelson

MDP 990 MD/PhD Graduate Research 0 credit
Register with the MD/PhD Program Administrator, Anne Michelson

MD/PhD Program Responsible Conduct of Research Requirements BBS and CPHR Students

GSBS – Pre-Year One (BBS and CTS students)

- **Seminar:** Responsible Conduct of Research Seminar "On Being a Research Scientist" Time/Day: TBD

GSBS – Pre-Q Research (year 1 GSBS, year 3 program)

- **CTS 702** Ethics for Clinical Research (CPHR track)
- Online **CITI** training modules (BBS and CPHR track)
- Using Animals and/or Human Subject as needed (BBS and CPHR track)

GSBS Thesis Research (year 2 GSBS, year 3 program)

- **BBS 601** Professionalism and Research Conduct (BBS track)

GSBS – Graduate Research (year 3 GSBS, year 5 program)

- RCR Refresher – for BBS students who have taken BBS 601, the CPHR course, CTS702, Ethics for Clinical Research should be taken at this time. CPHR students who have already taken this class are exempt. ***This course is a weekly, classroom format with readings, presentations, exams and homework.***

GSBS – Graduate Research (year 4GSBS, year 6 program)

- Draft an IRB application (if doing so for their research) or work with someone who is drafting an IRB application to be familiar with the process and attend and observe two IRB sessions.

- Attend two IRB meetings during the academic year (<http://www.umassmed.edu/ccts/irb/>)

SoM - CCE (year 3 SoM, year 6+ program)

- Read “On Being a Scientist: A Guide to Responsible Conduct in Research”

SoM – AS/FCE (year 4 SOM, year 7+ program)

- **Seminar** “On Being a Scientist: A Guide to Responsible Conduct in Research”
 - A 2-hour classroom session will be organized to discuss several of the hypothetical scenarios which help guide ethical decision-making process which are included in the book requirement from the prior year.