

UNIVERSITY FACULTY SENATE FORMS

(UGS0163 revised 3-6-12)

Academic Program Approval

This form is a routing document for the approval of new and revised academic programs. Proposing department should complete this form. For more information, call the Faculty Senate Office at 831-2921.

Submitted by: K. Brinker phone number 831-6502

Department: Medical Technology email address kcchem@udel.edu

Date: _____

Action: Add major in Medical Diagnostics

(Example: add major/minor/concentration, delete major/minor/concentration, revise major/minor/concentration, academic unit name change, request for permanent status, policy change, etc.)

Effective term 12F
(use format 04F, 05W)

Current degree _____
(Example: BA, BACH, BACJ, HBA, EDD, MA, MBA, etc.)

Proposed change leads to the degree of: Bachelor of Science
(Example: BA, BACH, BACJ, HBA, EDD, MA, MBA, etc.)

Proposed name: Medical Diagnostics
Proposed new name for revised or new major / minor / concentration / academic unit
(if applicable)

Revising or Deleting:

Undergraduate major / Concentration: _____
(Example: Applied Music – Instrumental degree BMAS)

Undergraduate minor: _____
(Example: African Studies, Business Administration, English, Leadership, etc.)

Graduate Program Policy statement change: _____
(Must attach your Graduate Program Policy Statement)

Graduate Program of Study: _____
(Example: Animal Science: MS Animal Science: PHD Economics: MA Economics: PHD)

Graduate minor / concentration: _____

Note: all graduate studies proposals must include an electronic copy of the Graduate Program Policy Document, highlighting the changes made to the original policy document.

List new courses required for the new or revised curriculum. How do they support the overall program objectives of the major/minor/concentrations)?

(Be aware that approval of the curriculum is dependent upon these courses successfully passing through the Course Challenge list. If there are no new courses enter “None”)

MEDT 462 Experiential Learning- This course will satisfy the university requirement for a Discovery Learning Experience for those in this major. This will be a capstone course that will challenge the student to assimilate all of his/her undergraduate coursework into the context of actual clinical experience to prepare for a career in healthcare. The reflections and critical thinking skills demonstrated during this course will be a measure of the student’s preparedness to advance to professional or graduate education in his/her chosen area.

This course will be the final reflective component of the volunteer experiences accumulated throughout the student’s undergraduate years in preparation for graduate or professional school in a healthcare field. Evidence of critical thinking and knowledge of healthcare concepts will be demonstrated through an ePortfolio and a formal summary paper.

MEDT 398 Body Fluid Analysis- Study of routine urinalysis examination, renal function and body fluid testing procedures. This course is the same course as MEDT 400 with the laboratory portion of the course removed.

Explain, when appropriate, how this new/revised curriculum supports the 10 goals of undergraduate education: <http://www.ugs.udel.edu/gened/>

The proposed major in Medical Diagnostics supports the following goals of undergraduate education:

1. Attain effective skills in (a) oral and (b) written communication, (c) quantitative reasoning, and (d) the use of information technology.
2. Learn to think critically to solve problems.
3. Be able to work and learn both independently and collaboratively.
4. Engage questions of ethics and recognize responsibilities to self, community, and society at large.
5. Understand the diverse ways of thinking that underlie the search for knowledge in the arts, humanities, sciences and social sciences.
6. Develop the intellectual curiosity, confidence, and engagement that will lead to lifelong learning.
7. Develop the ability to integrate academic knowledge with experiences that extend the boundaries of the classroom.

Identify other units affected by the proposed changes:

(Attach permission from the affected units. If no other unit is affected, enter “None”)

Permissions attached from BISC, CHEM, PHYS, FREC, MATH, and ENGL

Describe the rationale for the proposed program change(s):

(Explain your reasons for creating, revising, or deleting the curriculum or program.)

The Medical Diagnostics curriculum incorporates the core lecture courses from the Medical Technology major with selected courses from other scientific disciplines to provide a solid foundation for students pursuing graduate and professional degrees in healthcare related professions.

In support of this proposal, recent articles in the American Journal of Clinical Pathology describe the need for students pursuing medical school or graduate education in healthcare to gain a knowledge base in laboratory medicine to better prepare them for these post-baccalaureate programs.

According to the Centers for Disease Control and Prevention, “An integral component of care is laboratory medicine, which extends across research, clinical..., and public health settings.” As noted in the American Journal of Clinical Pathology, “The role of laboratory testing in the care of patients is uniformly recognized as a critical component of modern medical care.” (Smith, B., 2010)

Dr. Michael Wilson states in his article titled *Educating Medical Students in Laboratory Medicine* published in the American Journal of Clinical Pathology 2010, “...there are gaps in this education that defy common sense and reason, one of which is the lack of a requirement for formal education in laboratory medicine at all medical schools.”

Program Requirements:

(Show the new or revised curriculum as it should appear in the Course Catalog. If this is a revision, be sure to indicate the changes being made to the current curriculum and **include a side-by-side comparison** of the credit distribution before and after the proposed change.)

**DEGREE: BACHELOR OF SCIENCE
MAJOR: MEDICAL DIAGNOSTICS**

CURRICULUM	<u>CREDITS</u>
UNIVERSITY REQUIREMENTS	
ENGL 110 Critical Reading and Writing (minimum grade C-)	3
First Year Experience (FYE) Satisfied by MEDT 100	1
University Breadth Requirements	12
Discovery Learning Experience (DLE) Satisfied by MEDT 462	3
Multi-cultural Courses	3
One of the courses taken to satisfy the breadth requirements may also satisfy the multicultural course requirement.	
MAJOR REQUIREMENTS	
Second Writing Course: (minimum grade C-)	3

A second writing course involving significant writing experience including two papers with a combined minimum of 3,000 words to be submitted for extended faculty critique of both composition and content. This course must be taken after completion of 45 credit hours. (See list of courses approved for second writing requirement.)

Mathematics:

One of the following math courses: (Satisfies university breadth requirement for Mathematics, Natural Sciences and Technology)

MATH 114	College Mathematics and Statistics	3
MATH 115	Pre-Calculus	3
MATH 117	Pre-Calculus for Scientists and Engineers	4
MATH 221	Calculus I	3
Or		
MATH 241	Analytic Geometry and Calculus A	4

English:

ENGL XXX	Any English Course at 200 level of above. (Many English courses also satisfy the Creative Arts and Humanities breadth requirement.)	3
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Additional Breadth Requirements:

From the list of University breadth courses, an additional nine credits must be taken to meet the requirements for the major; subject areas may be from the same discipline.

Creative Arts and Humanities (A course in Ethics or Medical Ethics is strongly suggested.)	3
History and Cultural Change	3
Social and Behavioral Sciences	3

(minimum grade of C- required in all MEDT courses)

CURRICULUM		<u>CREDITS</u>
MEDT 100	Introduction to Medical Laboratory Science	1
MEDT 200	The Language of Medicine	3
MEDT 360	Clinical Immunology and Medical Virology	3
MEDT 398	Body Fluid Analysis	1
MEDT 401	Clinical Physiological Chemistry I	3
MEDT 403	Clinical Physiological Chemistry II	4
MEDT 404	Hematology I	2
MEDT 405	Hematology II	2
MEDT 406	Medical Microbiology	3
MEDT 409	Immunohematology I	1
MEDT 420	Immunohematology II	1
MEDT 430	Diagnostic Bacteriology and Medical Mycology	2
MEDT 462	Experiential Learning	3
BISC 207/BISC 208	Introductory Biology I and II	8

BISC 300	Introduction to Microbiology	4
BISC 401	Molecular Biology of the Cell	3
BISC 403	Genetic and Evolutionary Biology	3
CHEM 103/CHEM 104	General Chemistry	8
CHEM 214	Elementary Biochemistry	3
Or		
CHEM 527	Introductory Biochemistry	3
CHEM 321/CHEM 322	Organic Chemistry	8
STAT 408	Statistical Research Methods I	3
One of the following science sequences:		
BISC 276	Human Physiology	4
And		
PHYS 201/PHYS 202	Introductory Physics I and II	8
Or		
KAAP 309/KAAP 310	Pre-Clinical Anatomy and Physiology I and II	8
Electives to total 120		
CREDITS TO TOTAL A MINIMUM OF		120

Eligibility for admission to the junior year of the Medical Diagnostics major will be determined by academic achievement based on the following criteria:

1. Minimal GPA of 3.0 in first four semesters of coursework.
2. At least 60 credits among the designated chemistry, biological science, mathematics, physics, and kinesiology and applied physiology prerequisites must be completed prior to admission into the major. The science prerequisites include BISC 207, BISC 208, BISC 300, CHEM 103, CHEM 104, CHEM 321, CHEM 322, and the science sequence of BISC 276 and PHYS 201/PHYS 202 or KAAP 309/KAAP 310. The mathematics prerequisites include one of the following courses: MATH 114, MATH 115, MATH 117, MATH 221, or MATH 241. In addition, the student must have made satisfactory progress towards a baccalaureate degree.

ROUTING AND AUTHORIZATION: (Please do not remove supporting documentation.)

Department Chairperson _____ Date _____

Dean of College _____ Date _____

Chairperson, College Curriculum Committee _____
Date _____

Chairperson, Senate Com. on UG or GR Studies _____ Date _____

Chairperson, Senate Coordinating Com. _____ Date _____

Secretary, Faculty Senate _____ Date _____

Date of Senate Resolution _____ Date to be Effective _____

Registrar _____ Program Code _____ Date _____

Vice Provost for Academic Affairs & International Programs _____ Date _____

Provost _____ Date _____

Board of Trustee Notification _____ Date _____

Revised 02/09/2009 /khs

Senate Resolution for new Medical Diagnostics major

WHEREAS, the Department of Medical Technology has expressed the intent to establish a new major, Medical Diagnostics, and

WHEREAS, the Medical Diagnostics curriculum incorporates the core lecture courses from the Medical Technology major (not including the laboratory courses) with selected courses from other scientific disciplines to provide a solid foundation for students pursuing graduate and professional degrees in healthcare related professions, and

WHEREAS, recent articles in the American Journal of Clinical Pathology describe the need for students pursuing medical school or graduate education in healthcare to gain a knowledge base in laboratory medicine to better prepare them for post-baccalaureate programs, and

WHEREAS, the Medical Diagnostics major is distinct from the Medical Technology major in that the Medical Diagnostics major is a non-certification track while the Medical Technology major leads to certification eligibility, be it therefore

RESOLVED, that the Faculty Senate approves provisionally, for five years, the establishment of a new major in Medical Diagnostics, effective September 1, 2012.

Request to include STAT408

Karen Brinker <kcchem@udel.edu>

To: ILVENTO@udel.edu

Dear Dr. Ilvento

Karen Brinker <kcchem@udel.edu>

Jul 25, 2011 at 11:21 AM

I am chairing the Undergraduate Program Committee for the Medical Technology Department, and we are reviewing our curriculum this summer. We are exploring the possibility of creating two tracks for our Medical Technology Interest (MTI) students. We would retain our current track that leads to a B.S. degree in Medical Technology, and we are proposing another track that would lead to a baccalaureate degree in Medical Diagnostics.

We are proposing that the students in the Medical Diagnostics track take STAT 200 during their junior year. We are anticipating that no more than 5-10 students will choose the Medical Diagnostics track each year.

I would appreciate your support of this proposal by permitting STAT 200 to be included as course requirements for the Medical Diagnostics major.

Thank you

Karen Brinker

Karen Brinker B.S., MLS

Instructor

Department of Medical Technology

University of Delaware

303D Willard Hall Education Building

Newark, DE 19716

Phone: (302) 831-6502

Fax: 1302\ 831-4180

Ilvento, Tom <llvento@udel.edu>

To: Karen Brinker <kcchem@udel.edu>

Cc: Titus Awokuse <kuse@udel.edu>

Karen,

Mon, Jul 25, 2011 at 2:03 PM

There would be no problem admitting your students to STAT200. If need be I can write a letter to that effect. STAT200 is taught live in Fall, Spring, Winter and Summer sessions. It is also taught on-line in Fall, Spring and Summer.

I would also suggest STAT408 as another alternative. STAT408 is also an introductory course which does not assume prior statistical knowledge. However, since juniors and seniors take it we go a little faster, a little further (AN OVA and multiple regression) and it uses statistical software - JMP software which is a free download on campus. All of those would be valuable for any student wishing to go to graduate school. Compared to STAT 200 this course covers probability less (it does cover the normal distribution) and advanced techniques more. This course is taught live in the fall and on-line in the spring. I have attached the syllabus for Spring 2011 for you to look at. We regularly substitute this course for STAT200.

twi

Thomas W. Ilvento

Professor and Chair

213 Townsend Hall

Newark, DE 19717

Office: 302-831-6773

Fax: 302-831-6243

Cell: 302-388-0971

From: Karen Brinker <kcchem@UDei.Edu>

Date: Mon, 25 Jul 2011 11:21:50-0400

To: Thomas W Ilvento <jlyento@udel.edu>

Subject: Request from Medical Technology

[Quoted text hidden]

.., FREC 408 Syllabus 11SOL.pdf

L:l 302K

Karen Brinker <kcchem@udel.edu> Mon, Jul 25, 2011 at 2:06 PM

To: "Ilvento, Tom" <ilvento@udel.edu>

Thank you for your quick reply. I will look over the syllabus for STAT 408 to see if it would be a better choice. I think all I need from you is an email saying that you agree to us including this course in our proposed curriculum and your previous email will suit.

Thanks again

Karen

Ilvento, Tom <ilvento@udel.edu>

To: Karen Brinker <kcchem@udel.edu>

[https://mail.google.com/mail/?ui=2&ik=73035fdldO&view=pt&sear ...](https://mail.google.com/mail/?ui=2&ik=73035fdldO&view=pt&sear...)

Mon, Jul 25, 2011 at 2:18 PM

I would say think of STAT408 as an additional alternative- STAT200 or STAT408. Any student wanting to move toward research would get more out of STAT408.

2 of 2

I will send a more formal email shortly.

twi

Request from Medical Technology to include PHYS 201/202

Karen Brinker <kcchem@udel.edu>

To: George Hadjipanayis <hadji@udel.edu>

Mon, Jul 25, 2011 at 1:49 PM

Dear Dr. Hadjipanayis,

I am chairing the Undergraduate Program Committee for the Medical Technology Department, and we are reviewing our curriculum this summer. We are exploring the possibility of creating two tracks for our Medical Technology Interest (MTI) students. We would retain our current track that leads to a B.S. degree in Medical Technology, and we are proposing another track that would lead to a baccalaureate degree in Medical Diagnostics.

We are proposing that the students in the Medical Diagnostics track take PHYS 201 and PHYS 202. We are anticipating that no more than 5-10 students will choose the Medical Diagnostics track each year.

I would appreciate your support of this proposal by permitting PHYS 201 and PHYS 202 to be included as course requirements for the Medical Diagnostics major.

Thank you

Karen Brinker

Karen Brinker B.S., MLS

Instructor

Department of Medical Technology

University of Delaware

303D Willard Hall Education Building

Newark, DE 19716

Phone: 1302\ 831-6502

Fax: (302\ 831-4180

Hadjipanayis, George <hadjl@udel.edu>

To: "Brinker, Karen R" <kcchem@udel.edu>

Cc: "Collins, Dennis C" <dcollins@udel.edu>, "Mulders, Norbert" <mulders@udel.edu>

Dear Ms. Brinker,

I fully support your proposal and I wish you a good success in your Medical Technology Program.

With regards,

George Hadjipanayis

From: Karen Brinker [mailto:kcchem@UDel. Edu]

Sent: Monday, July 25, 2011 1 :49 PM

To: Hadjipanayis, George

Subject: request from Medical Technology

[Quoted text hidden]

Mon, Jul 25, 2011 at 4:52 PM

7/26/2011 11:06AM

Request from Medical Technology to include Chemistry courses (CHEM 103, CHEM 104, CHEM 321, and CHEM 322, CHEM 214 or CHEM 527)

Karen Brinker <kcchem@udel.edu>

To: theopold@udel.edu

Dear Dr. Theopold,

Karen Brinker <kcchem@udel.edu>

Mon, Jul 25, 2011 at 11:38 AM

I am chairing the Undergraduate Program Committee for the Medical Technology Department, and we are reviewing our curriculum this summer. We are exploring the possibility of making two tracks for our Medical Technology Interest (MTI) students. We would retain our current track that leads to a B.S. degree in Medical Technology, and we are proposing another track that would lead to a baccalaureate degree in Medical Diagnostics.

The chemistry courses required for both tracks during the first two years would remain the same as they are now for the MTI students that are choosing our current pre-med option (CHEM 103, CHEM 104, CHEM 321, and CHEM 322). However, in junior year, we are proposing that the students in the Medical Diagnostics track take either CHEM 214 without the laboratory or CHEM 527. We are anticipating that no more than 5-10 students will choose the Medical Diagnostics track each year.

I would appreciate your support of this proposal *by* permitting to be included as course requirements for the Medical Diagnostics major.

Thank you

Karen Brinker

Karen Brinker B.S., MLS

Instructor

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John Burmeister <jlburm@mail.chem.udel.edu> Mon, Jul 25, 2011 at 2:32 PM

Reply-To: Jburm@udel.edu

To: kcchem@udel.edu

Cc: Klaus Theopold <theopold@udel.edu>, Doug Doren <doren@udel.edu>, George Watson <ghw@art-sci.udel.edu>, "JLBURM@UDEL.EDU" <JLBURM@udel.edu>

Karen:

In principle, we are, of course, supportive of *any* program that reqwres CHEM course content. In practice, our backs are against the wall. Specifically, our 11F offering of CHEM-103

filled up last Monday, leaving UST students, transfer students, and upperclasspersons waiting at the altar. That means that all of the available time slots (50) in all three laboratories available for CHEM-103 (QDH 054, 064 and 070) are filled with 24 students each- a total of 1200 students in lab sections running morning, afternoon, and evening, Monday through Friday, plus Saturday morning. This is the second year that this has happened, the first being 09F, although no students were left out in the cold in 09F. 09F's gargantuan class saturated our CHEM-321 offering last fall (400 students in 20 lab sections at 20 each, following the same schedule noted for CHEM-103). That saturation will be repeated in CHEM-321 next year. I might add that we are turning *away* students in both CHEM-214 and CHEM-527 this fall. Of course, 5-10 students represents a small perturbation, in and of itself. If your students can adapt their schedules to take advantage of our multiple course offerings (CHEM-103 and CHEM-104 are each taught fall, winter, spring, and summer, as is CHEM-214; CHEM-321 is offered fall, winter and summer; CHEM-527 is scheduled fall and spring), we should be able to accommodate them. Furthermore, the CHEM-103/104 overcrowding situation will be relieved in 2013, when the new ISE building opens, and the BISC majors are shifted to new, integrated CHEM-103/104//BISC-207/208 courses, which are to be taught via PBL in space specifically designed for this purpose.

JB

On 7/25/2011 12:19 PM, Klaus Theopold wrote:

John,

The latest in the ebb and flow of CHEM requirements. Would *you* like to comment?

Regards, Klaus

Begin forwarded message:

From: Karen Brinker <kcchem@UDei.Edu>

Subject: request from Medical Technology

Date: July 25, 2011 11:38:40 /WI EDT

To: theopold@UDei.Edu

[Quoted text hidden]

7/26/2011 11:07 AM

Request to include Biology courses ((BISC 207, BISC 208, BISC 276, BISC 300, BISC 401 and BISC 403)

Karen Brinker <kcchem@udei.edu>

To: riduncan@udel.edu

Dear Dr. Duncan

Karen Brinker <kcchem@udei.edu>

Mon, Jul 25, 2011 at 11:09 AM

I am chairing the Undergraduate Program Committee for the Medical Technology Department, and we are reviewing our curriculum this summer. We are exploring the possibility of making two tracks for our Medical Technology Interest (MTI) students. We would retain our current track that leads to a B.S. degree in Medical Technology, and we are proposing another track that would lead to a baccalaureate degree in Medical Diagnostics.

The biology courses required for both tracks during the first two years would remain the same as they are now for the MTI students (BISC 207, BISC 208, BISC 276, and BISC 300).

However, in junior year, we are proposing that the students in the Medical Diagnostics track take BISC 401 and BISC 403 (without the corresponding laboratory courses). We are anticipating that no more than 5~10 students will choose the Medical Diagnostics track each year.

I would appreciate your support of this proposal by permitting BISC 401 and BISC 403 to be included as course requirements for the Medical Diagnostics major.

Thank you

Karen Brinker

Karen Brinker B.S., MLS

Instructor

Department of Medical Technology

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Karen Brinker <kcchem@udel.edu>

To: rlduncan@udel.edu

Hi,

Mon, Aug 15, 2011 at 2:24PM

We are hoping to vote on the proposal for this new track in Medical Technology at our first department meeting this semester (9/1) and I wanted to be able to say that we have the approval from the various departments at that meeting. Hope you are enjoying the remainder of the summer.

Thanks

Karen

Randall Duncan <rlduncan@udel.edu>

To: Karen Brinker <kcchem@udel.edu>

Hi Karen,

I have discussed this with my executive council and 5-10 students won't tax BISC 401 or 403.

You have my approval.

Best regards,

Randy

Randall L. Duncan, Ph.D.

Professor and Chairman

Department of Biological Sciences

University of Delaware

Newark, DE 19716

(Tel) 302.831.4296

(Fax) 302 831.1033

Request to include MATH courses

Hi John,

Sorry for my delay in answering your questions. We have reassessed the mathematics requirement for this new major of Medical Diagnostics. We foresee that students pursuing this degree are those who are interested in either medical school or other graduate degrees in health care such as physician assistant programs. Since professional and graduate schools have different math requirements, depending upon the career path of the student, we need to be flexible and include several academically acceptable math options.

Students who are pursuing medical school will generally complete 2 semesters of calculus; however, students pursuing physician assistant school may choose to take MATH 114 or a higher level depending on their skills. With this in mind, we propose including a list of appropriate math courses that meet UD graduation requirements as well as prepare students for

their chosen career path.

We are now proposing that students complete **one** of the following math courses (as a minimum for graduation), with the course(s) selected being dependent upon math placement and career goals.

MATH114
MATH115
MATH117
MATH221
MATH222
MATH241
MATH242

In regard to the number of students who may pursue the Medical Diagnostics major, we are only anticipating about 10 students initially choosing this new major rather than the current major of Medical Technology. Since the math courses selected will certainly vary, hopefully the students will be accommodated by existing sections.

I would greatly appreciate your support of this revision.



Karen
Brinker

7:58 AM (5 hours
ago)

to John

Hi John,

Sorry again for rushing you on this but I need to get a few answers back to Faculty Senate this week and your reply is one of the answers I need. Would you be acceptable to include a math requirement for our proposed major in Medical Diagnostics as indicated below?

My apologies for the rush,
Karen



John A. Pelesko
pelesko@math.udel.edu

8:46 AM (4 hours
ago)

to me

Hi Karen,

Sorry for the delay. The proposal below is fine. Good luck!

Best,

John



Request to include English courses

Iain Crawford
icrawf@udel.edu

Feb 9 (9 days
ago)

to **Peter**, me

Dear Karen:

Thanks for your message. Let me cc our Associate Chair on this reply and bring him into the conversation so that we can figure out whether we need to address any questions before responding to you formally.

Best,

Iain



Peter X Feng
feng@english.udel.edu

2:12 PM (10 minutes
ago)

to **Iain**, me

Hi Karen -- thank you for clarifying that medical schools want one year of English *including* ENGL110.

With that understanding, the English department is happy to support the proposal for a new Medical Diagnostics major that would require students to take ENGL 110 and one 200-level or higher ENGL course of their choosing.

--

Peter X Feng
Associate Professor of English and Women's Studies
Associate Chair, Department of English
209 Memorial Hall
170 The Green
University of Delaware
Newark, DE 19716

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