Form NP

NEW PROGRAM PROPOSAL FORM

Sponsoring Institution(s): Maryville University

Program Title: Biomedical Science

Degree/Certificate: Bachelor of Science

Options:

Delivery Site(s): Maryville University, Main Campus

CIP Classification: Biomedical Science – BS Degree (CIP code) 26.0102

Implementation Date: Fall 2005

Cooperative Partners:

Expected Date of First Graduation: May 2007

AUTHORIZATION

Dr. Mary Ellen Finch – VP for Academic Affairs Mary Ellen Finch June 8, 2011

Name/Title of Institutional Officer Signature Date

Dr. Candace Chambers – Assistant Dean, College of Arts & Sciences – 314.529.9208

Person to Contact for More Information Telephone

Form NP

NEW PROGRAM PROPOSAL FORM

Sponsoring Institution(s): Maryville University

Program Title: Biomedical Science

Degree/Certificate: Bachelor of Science

Options:

Delivery Site(s): Maryville University, Main Campus

CIP Classification: Biomedical Science – BS Degree (CIP code) 26.0102

Implementation Date: Fall 2005

Cooperative Partners:

Expected Date of First Graduation: May 2007

AUTHORIZATION

Dr. Mary Ellen Finch – VP for Academic Affairs June 8, 2011

Name/Title of Institutional Officer Signature Date

Dr. Candace Chambers – Assistant Dean, College of Arts & Sciences – 314.529.9208

Person to Contact for More Information Telephone

Missouri Department of Higher Education Proposal for New Program:

Maryville University – Biomedical Science (Bachelor of Science)

1. New Program Proposal Form: See Form NP – attached

2. Need:

   A. Student Demand:

      i. Estimated enrollment each year for the first five years for full-time and part-time students (See Form SE – attached)

      ii. Will enrollment be capped in the future?

      Enrollment is expected to be fluid, so we do not foresee a need to cap enrollment in the near future. However, it would be possible that we would need to cap enrollment in introductory science courses (introductory chemistry and biology for majors and organic chemistry) until all science facilities have been renovated. For the next 3 years, we anticipate a maximum enrollment of 300 students in any given semester in general chemistry and organic chemistry courses/labs. After facilities have been renovated we should be able to serve 400 students in these sequences per semester. Currently, we can serve only 96 students in the introductory biology sequence in any given semester. After facilities renovations, we should be able to serve 210 students per semester in this sequence.

   B. Market Demand:

      According to information compiled from job profiles published by the U.S. Department of Labor, Bureau of Labor Statistics (http://www.bls.gov , accessed April 26, 2011) occupations using biomedical science training have, on average, above average projected job growth rates (2008-2018) and above average approximate median annual salaries (2008):

      Jobs that a biomedical scientist is trained for with just a bachelor's degree:
      Science technician (job growth 270,800 to 302,600)
      Biological technician (job growth 79,500 to 93,500; median salary $39,538)
      Forensic science technician (job growth 12,800 to 15,300; median salary $55,527)
      Laboratory technologist (job growth 172,400 to 193,000; median salary $53,500)

      Jobs needing post-graduate education but that may begin with a biomedical science degree:
      Physician assistant (job growth 74,800 to 103,900; median salary $81,230)
      Medical physician (job growth 661,400 to 805,500; median salary primary care $186,044; median salary specialty medicine $339,738)
      Medical scientist (job growth 109,400 to 153,600; median salary $72,590)
      Pharmacist (job growth 269,900 to 315,800; median salary $106,410)

   C. Societal Need:

Lab technicians are needed by society to conduct a wide variety of tests on human body fluids and tissues to determine medical treatment.

Biological technicians are needed to collect environmental samples and perform testing to determine pollutant levels in a variety of venues.

D. Methodology used to determine "B" and "C" above.

Information for Market Demand and Societal Need was gathered from various documents provided by the federal government (e.g., US Department of Labor Occupational Outlook).

3. Duplication and Collaboration

If similar programs currently exist in Missouri, what makes the proposed program necessary and/or distinct from the others at public institutions, area vocational technical schools, and private career schools?

We are not aware of any comparable programs offered at other Missouri institutions.

Does delivery of the program involve a collaborative effort with any external institution or organization?

The program will not be offered in collaboration with another institution.

4. Program Structure:
   A. See Form PS – attached
   B. See Form PS – attached
   C. See Form PS – attached
   D. See Form PS – attached
   E. See Form PS – attached
   F. See Form PS – attached
   G. See Form PS – attached

5. Financial Projections (for public institutions only): Maryville University is a private, not-for-profit institution.

6. Program Characteristics and Performance Goals: See Form PG – attached

7. Accreditation: If accreditation is not a goal for this program, provide a brief rationale for your decision.

   We do not have plans to seek accreditation. There is not an appropriate accrediting agency for this program.

8. Institutional Characteristics: Please describe succinctly why your institution is particularly well equipped or well suited to support the proposed program.

   Maryville University is one of the oldest private institutions of higher education in the region serving approximately 3500 students. It is conveniently located within 20 minutes of downtown St. Louis where the professional opportunities for internships and reciprocal relationships with corporate and non-profit partners is significant. Within the region, Maryville is known for its strong undergraduate programs. The existing programs in biology, chemistry and the health professions provide facilities and faculty expertise for the biomedical science major.

9. Any Other Relevant Information: N/A

Form SE

STUDENT ENROLLMENT PROJECTIONS

Year	1	2	3	4	5
Full Time	1	5	10	15	15
Part Time	0	0	0	0	0
Total	1	5	10	15	15

Form PS

PROGRAM STRUCTURE

A. Total credits required for graduation: ___128_____

B. Residency requirements, if any: _____none_____

C. General education: Total credits: _____39_____

Courses (specific courses OR distribution area and credits):

INTD 101	3 cr.	2 courses from Arts & Sciences	6 cr.	Philosophy	3 cr.
ENGL 101	3 cr.	HUM 101/HIST 131	3 cr.		
ENGL 104	3 cr.	ENGL/LANG/HUM/PHIL	3 cr.		
Fine Arts	3 cr.	Am Hist or Govt	3 cr.		
Lit/Lang	3 cr.	2 Social Science courses	6 cr.		

D. Major requirements: Total credits: 76-80

BIOL 117	4 cr	BIOL 118	4 cr	BIOL 206	4 cr	BIOL 250	4 cr
BIOL 298	3 cr	BIOL 351	4 cr	BIOL 353	4 cr	BIOL 394	3 cr
BIOL 395	3 cr	BIOL 396	1 cr	BIOL 498	2 cr	CHEM 103	4 cr
CHEM 104	4 cr	CHEM 203	4 cr	CHEM 204	4 cr	CHEM 320	4 cr

MATH 125 or 151 3-4 cr PHYS 103 or 153 4 cr PHYS 104 or 154 4 cr

At least 9 cr hours from the following: BIOL 476 (4 cr); BIOL 495 (3 cr); BIOL 497 (2 cr); CHEM 301 (3 cr); CHEM 353 (4 cr); CHEM 410 (4 cr); CHEM 431 (3 cr)

E. Free elective credits: 13-9 (depending on line D) (Sum of C, D, and E should equal A.)

F. Requirements for thesis, internship or other capstone experience:

none

G. Any unique features such as interdepartmental cooperation: Science and math courses only.

Form PG

PROGRAM CHARACTERISTICS AND PERFORMANCE GOALS

Institution Name ___Maryville University_____

Program Name ____Biomedical Science_____

Date ___April 25, 2011_____

(Although all of the following guidelines may not be applicable to the proposed program, please carefully consider the elements in each area and respond as completely as possible in the format below. Quantification of performance goals should be included wherever possible.)

Student Preparation

- Any special admissions procedures or student qualifications required for this program which exceed regular university admissions, standards, e.g., ACT score, completion of core curriculum, portfolio, personal interview, etc. Please note if no special preparation will be required.

  No special preparation is required beyond acceptance to the university.

- Characteristics of a specific population to be served, if applicable.

  The Biomedical Science major is offered for daytime students only.

Faculty Characteristics

- Any special requirements (degree status, training, etc.) for assignment of teaching for this degree/certificate.

  Terminal degree (doctoral degree) is required for all courses taught in this program. Degree may be in chemistry, biology, or biochemistry. Laboratories may be taught by faculty with a master's degree or terminal degree.

- Estimated percentage of credit hours that will be assigned to full time faculty. Please use the term "full time faculty" (and not FTE) in your descriptions here.

  Full time faculty will teach approximately 50% of the credit hours for the biomedical science major.

- Expectations for professional activities, special student contact, teaching/learning innovation.

  All full time faculty members are expected to participate in an active program of professional development which includes teaching innovation, supervision of undergraduate research, new course development, and service to department/campus/community. Maryville has a well-established Finch Center for Teaching and Learning that sponsors an annual conference on the Scholarship of Teaching and Learning. Faculty members may also choose to participate in a two-year action research project where they study their own teaching and the impact on student learning. Full time faculty members are required to advise students in their degree planning and

progress. Faculty members are also involved in mentoring students in their professional development.

Enrollment Projections

- Student FTE majoring in program by the end of five years.

  Approximately 5-8 students in each class, or 20-32 at the institution at any given time.

- Percent of full time and part time enrollment by the end of five years.

  One-hundred percent full time. None part time.

Student and Program Outcomes

- Number of graduates per annum at three and five years after implementation.

  Three years after implementation, we anticipate 0 graduates—it is a four-year program. Five years after implementation, we anticipate 7 graduates annually.

- Special skills specific to the program.

  The curriculum for the biomedical science program provides students with a solid preparation for continuing in graduate or professional school or for direct entry into biomedical science-related fields.

  The Biomedical Science Program at Maryville University seeks to fulfill the mission of providing the highest quality undergraduate programs founded in the Liberal Arts and Sciences tradition. Our biomedical science major strives to provide an interdisciplinary educational experience for students to develop the skills and concepts necessary to understand and appreciate many aspects of biology, chemistry, and human physiology and health. The program prepares students to engage in meaningful discourse and creative scientific inquiry, and provide responsible and effective leadership and service in their professions, their communities, and the larger society.

  The program also supports Maryville's mission of integrating liberal and professional learning by providing a theoretical and practical foundation in the biological sciences with instruction in both traditional and laboratory settings.

  Our program supports the University's goal to offer an undergraduate curriculum that prepares the student as active and enlightened participants in St. Louis and the world community.

  A significant number of graduates gain acceptance into medical, dental or graduate schools. Some take or continue their ongoing employment with local industries. Some local companies that hire Maryville graduates include; Pfizer, Sigma-Aldrich, K-V Pharmaceuticals, Monsanto, and Anheuser-Busch. In addition, the local health care network provides some jobs for Maryville students and graduates including; BJC Hospitals, St. John's-Mercy Hospital, St. Luke's Hospital; St. Joseph's Hospital, SSM Health Centers, etc. Some students and graduates find work in biological and medical research institutions including the Danforth Plant Science Center, St. Louis University Medical School, and Washington University Medical School.

Students have the opportunity to perform undergraduate research with a full time faculty member at Maryville University.

- Proportion of students who will achieve licensing, certification, or registration.

  Biomedical science majors will not be seeking licensing, certification, nor registration affiliated with this degree.

- Performance on national and/or local assessments, e.g., percent of students scoring above the 50th percentile on normed tests; percent of students achieving minimal cut-scores on criterion-referenced tests. Include expected results on assessments of general education and on exit assessments in a particular discipline as well as the name of any nationally recognized assessments used.

  Currently, the Maryville Science Programs do not use national assessment tools for courses. In the future, we hope to offer some of the American Chemical Society exams for undergraduates. In particular, the end-of-sequence exams for General Chemistry and Organic Chemistry. If and when offered, we would expect the biomedical science majors to have 50% of the students performing above the 50th percentile.

- Placement rates in related fields, in other fields, unemployed.

  We anticipate that 90% of students desiring employment in the field, or a related field, will be able achieve it upon graduation.

- Transfer rates, continuous study.

  We anticipate 25% of our students will be transfer students *to* Maryville University. We do not anticipate students enrolled in the biomedical science major at Maryville will transfer (as a biomedical science major) to another institution. In the first few years, we expect many graduates will immediately seek employment. Within 5-10 years, we anticipate approximately 70% of our graduates will pursue post-graduate education.

Program Accreditation

- Institutional plans for accreditation, if applicable, including accrediting agency and timeline. If there are no plans to seek specialized accreditation, please provide reasons.

  Biomedical science does not have an accrediting agency.

Alumni and Employer Survey

- Expected satisfaction rates for alumni, including timing and method of surveys.

  Alumni will be surveyed electronically every five years. Our expected satisfaction rate is above 85%.

- Expected satisfaction rates for employers, including timing and method of surveys

  Employers will be surveyed electronically every five years. Our expected satisfaction rate is above 85%.