

## Blue Marble University

[Doctoral Portion Administered by Panama College of Cell Science]

### Fast Track Combination Bachelor of Science (B.S.) and Doctor of Philosophy (Ph.D.) in General Biology and Stem Cell Science

5 Year program which you can enter right after High School

#### B.S./Ph.D. 5 year Fast Track Combination Program, featuring a Bachelor Degree in General Biology and a Doctoral Degree in Stem Cell Science

This program introduces the student to basic biology concepts and then proceeds into the doctoral program where the student will learn the basic science of stem cell biology, and also the practical applications to patient treatment today, through the exploration of international therapies using adult stem cells. The program is excellent for those that may be interested in not only a research career, but also a career in clinical medicine or pharmacology, biomedical engineering, or health care management.

We operate on a trimester schedule, which means that our academic year is divided into 3 segments of 4 months each. In each 4 month period, students take three courses. For some terms, or as determined by the University, students may be assigned courses in sequence, lasting about 1 month each. In that event, for any approximate one month period, a student will be studying one course.

Years 1 and 2 are Used for the Bachelor Degree Part of the Program

(See our note at the end relating to seat time)

**Note: A B.S. Degree is only issued upon completion of the entire 5 year program. We do not offer a B.S. Degree except in combination with the 3 year doctoral degree**

Year 1	Year 2
Term 1	Term 1
Introduction to Biology I (Course #310) 4 credits	Cell Biology (Course #320) 4 credits
Introduction to Biology II (Course #311) 4 credits	Plant Biology (Course #321) 4 credits
Digital Portfolio 1: Purpose (Course #DP101) 4 credits	Marine Biology (Course #322) 4 credits
English Writing (Course #E101) 6 credits	

Year 1	Year 2
Term 2	Term 2
Pond Water Biology (Course #312) 4 credits	Microbiology (Course #323) 4 credits
Biology Lab Techniques and Protocols I (Course #313) 4 credits	Forensic Biology (Course #324) 4 credits
Digital Portfolio 2: Basic Blog Set-up (Course #DP 102) 4 credits	Digital Portfolio 4: Presentation (Course #DP 104) 4 credits
Term 3	Term 3
Biology Lab Techniques and Protocols II (Course #314) 4 credits	Biology Seminars (Course #326) 4 credits
Introduction to Genetics, Course #315 4 credits	Biostatistics (Course #327) 4 credits
Digital Portfolio 3: Create Portfolio Outline (Course#DP 103) 4 credits	Independent Study (Course #328) 4 credits

Note: Satisfactory Completion of the first two years of this program qualifies the student for continuing into the 3 year doctoral program in stem cell biology administered by the Panama College of Cell Science, and that 3 year program is detailed again here:

TOTAL: 72 TRIMESTER CREDITS

(Equivalent to the USA Minimum Requirement for a Doctor of Philosophy (PhD) Degree)

Year 1	Year 2	Year 3
Term 1	Term 1	Term 1
Biochemistry (Course #610), 3 credits	Fundamentals of Stem Cell Biology (Course #630) 3 credits	Research Methodology and Writing (Course #680) 3 credits
Embryology (Course #612), 3 credits	Stem Cells, Embryonic (Course #632) 3 credits	Topics for Thesis (Course #682) 3 credits
Enzymology (Course #614), 3 credits	Stem Cells, Adult and Fetal (Course #634) 3 credits	Dissertation Preparation I (Course #684) 3 credits

Term 2	Term 2	Term 2
Virology (Course #616), 3 credits	Stem Cell Laboratory Protocols (Course #636) 3 credits	Dissertation Preparation II (Course #686) 3 credits
Molecular Biology (Course #618), 3 credits	Human Regenerative Biology (Course #638) 3 credits	
Blood: (Course #621), 3 credits	History of Medicine (Course #640) 3 credits	
Term 3	Term 3	Term 3
Physiology and Human Anatomy (Course #622) 3 credits	Disease Treatment with Autologous Stem Cells (Course #642) 3 credits	Dissertation Presentation and completion of Online Portfolio (Course #700) 6 credits
Immunology (Course #624), 3 credits	Fetal and Embryonic Stem Cell Therapy (Course #644) 3 credits	
Hormonal Rejuvenation (Course #626), 3 credits	Growth Media, Cell Tagging, Cell Separation (Course #646) 3 credits	

**A description of the courses can be found in the Department of Biology Course Handbook.**

Note Concerning Undergraduate Degree and "Seat Time":

As we have stated before, we drop "seat time" from each and every one of our programs. All of our students must demonstrate "Proficiency" with regard to the subject matter of their studies. Consequently, our programs are shorter.

"Seat time", which is the foundation of "accreditation" in the USA, is the old fashioned, outdated requirement that a student spend a required amount of time and/or take required general studies courses in order to receive a Bachelors Degree. Even the USA Department of Education in its "National Education Technology Plan 2010" has recognized that "seat time" has got to go. At Page 12 of the report: *"One of the most basic assumptions in our education system [accreditation] is time-based or "seat-time" measures of educational attainment.... [colleges and universities should be organized] around competence rather than seat time and others that enable more flexible scheduling that fits students' individual needs rather than traditional academic periods and lockstep curriculum pacing."*