

LSC Use Only No: LSC Action-Date: UWUCC USE Only No. UWUCC Action-Date: Senate Action Date:  
 04-13a Apr 10/26/04 Apr 12/7/04

**Curriculum Proposal Cover Sheet - University-Wide Undergraduate Curriculum Committee**

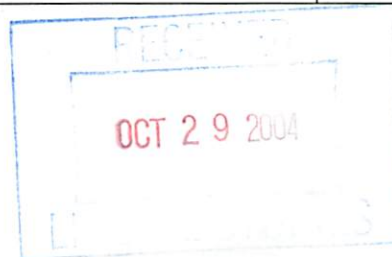
<b>Contact Person</b> Dr. Roberta Eddy, Dr. N. Bharathan, Dr. V. Wijekumar	<b>Email Address</b> rmeddy@iup.edu, bharathn@iup.edu, vjwije@iup.edu
<b>Proposing Department/Unit</b> SDR/Science for Disaster Response (Natural Science)	<b>Phone</b> 724-357-4482

Check all appropriate lines and complete information as requested. Use a separate cover sheet for each course proposal and for each program proposal.

<b>1. Course Proposals (check all that apply)</b>	
<input type="checkbox"/> New Course	<input type="checkbox"/> Course Prefix Change
<input type="checkbox"/> Course Revision	<input type="checkbox"/> Course Number and/or Title Change
<input type="checkbox"/> Course Deletion	<input type="checkbox"/> Catalog Description Change
<u>Current Course prefix, number and full title</u>	<u>Proposed course prefix, number and full title, if changing</u>
<b>2. Additional Course Designations: check if appropriate</b>	
This course is also proposed as a Liberal Studies Course. <input type="checkbox"/> Other: (e.g., Women's Studies, Pan-African)	
This course is also proposed as an Honors College Course. <input type="checkbox"/>	
<b>3. Program Proposals</b>	
<input type="checkbox"/> New Degree Program	<input type="checkbox"/> Catalog Description Change
<input type="checkbox"/> New Minor Program	<input type="checkbox"/> Program Title Change
	<input type="checkbox"/> Program Revision
	<input type="checkbox"/> Other
	<input checked="" type="checkbox"/> New Track
<u>Current program name</u>	<u>Proposed program name, if changing</u>
	Bachelor of Science—Natural Science/Science for Disaster Response Track
<b>4. Approvals</b>	
Department Curriculum Committee Chair(s)	<i>Arthur Capala - Bishop</i> <i>Kenneth E. Hurchman</i> <i>Wendy Lou Elcesser</i> <i>James E. Hurchman</i> <i>Bruce VanYosson Ramsey*</i>
Department Chair(s)	<i>John D. Eddy</i> <i>John D. Eddy</i>
College Curriculum Committee Chair	<i>John D. Eddy</i>
College Dean	<i>John D. Eddy</i>
Director of Liberal Studies *	
Director of Honors College *	
Provost *	
Additional signatures as appropriate: (include title)	
UWUCC Co-Chairs	<i>Gail Sedquist</i>
	<b>Date</b>
	3-22-04
	4/3/04
	4/06/04
	4/3/04 4/6/04
	5/22/04
	08/09/04
	8/19/04
	10-26-04

\* where applicable

\* see letter from Chemistry Dept



## **Part II. Description of Curriculum Change**

1. Complete Catalog Description For New Track. This includes both the description about the track and the list of courses and credits for the new track.

### Catalog Description

The BS in Natural Science/Science for Disaster Response Track provides intensive education and training in the principles involved in detecting, identifying, and safe handling of Chemical, Biological, Radiological or Nuclear (CBRN) agents and their precursors as they are related to weapons of mass destruction (WMD). This track responds to the national mandate to improve the educational level of first responders in the WMD community. The intended audience is the National Guard Bureau's Weapons of Mass Destruction Civil Support Teams (WMD-CST), other U.S. Government WMD and homeland security response elements, state and local civilian WMD and homeland security response elements, and related emergency planners. Additionally, this track prepares WMD first responders for employment in technical positions related to Homeland Security or graduate studies in CBRN defense.

### Requirements for Admission

In addition to meeting the admission requirements at IUP, the applicant must have local, state or federal agency/organization authorization certifying student participation in emergency response teams. The purpose of this requirement is to ensure security because of the sensitive nature of some of the course material. The applicant also must have sufficient preparation in biology, chemistry, physics, and mathematics. Preparation should include high school biology, chemistry, physics, algebra, geometry, and trigonometry. Additionally, all students must take a placement exam that has been developed by the WMD-faculty for Levels 1, 2, and 3 of the SDR courses. This placement exam is designed to assess the student's knowledge of the material in the courses associated with Levels 1, 2, and 3. Each course has questions on the placement exam. Students must attain a score of 80% or higher on the questions associated with a course in order to place out of that course. However, the students will not receive credit for a course that they don't have to take. Therefore, they will

have to make up the credits by taking another course. The advisors will help the students to select an appropriate course. Applicants should have prior education and training in domestic preparedness, sample collection and analysis, emergency medicine, and emergency response. Due to the sensitive nature of some of the course material and the need to ensure security, all students who are interested in applying for admission into the BS in Natural Science with specialization in SDR must be approved by the Director of the WMD Programs at IUP prior to submitting an application. The contact information for the Director of the WMD Programs at IUP is on the IUP/WMD website <http://www.wmdrealiti.iup.edu/>.

### **Bachelor of Science-Natural Science/Science for Disaster Response Track**

**Liberal Studies:** As outlined in Liberal Studies section **49**  
with the following specifications:

**Mathematics:** MATH 121

**Natural Science:** CHEM 111-112 or CHEM 113-114

**Social Science:** PSYC 101

**Liberal Studies Electives:** 3cr, PHYS 111, no courses with SCI or SDR prefix

**Major:** **60**

**Required Courses:**

**Required Biology Courses: (1)**

BIOL 111 Principles in Biology I 4cr

BIOL 150 Human Anatomy 3cr

BIOL 151 Human Physiology 4cr

**SDR Core Courses (Biology):**

SDR 111 Basic Biological Laboratory Operations 5cr

SDR 211 Interaction of CBRN Materials with Biological  
Systems and PCR Technology 5cr

SDR 311 Structure of DNA, RNA, and Cell Morphology 5cr

**SDR Core Courses (Chemistry):**

SDR 121 Chemical Recognition and Identification Techniques 5cr

SDR 221 Chemistry of Precursor Compounds 5cr

SDR 321 Organic Chemistry of WMD, TICS, and TIMS 5cr

**Required Physics Courses:**

PHYS 121	Physics I Lab	1cr
PHYS 112	Physics II Lecture	3cr
PHYS 122	Physics II Lab	1cr
PHYS 222	Mechanics I	2cr
PHYS 331	Modern Physics	3cr

**SDR Core Courses (Physics):**

SDR 131	Principles of Radiation	3cr
SDR 231	Hazards of Ionizing Radiation	3cr
SDR 331	Interaction of Ionizing Radiation	3cr

**Other Requirements:**

MATH 122	Calculus II for Natural and Social Sciences	4cr	<b>4-10</b>
Foreign Language Intermediate Level		0-6cr	

**Free Electives:****1-7***Suggested:*

BIOL 401	Methods in Molecular Biology and Biotechnology	3cr
BIOL 410	Advanced Topics in Molecular Biology	3cr
COSC 101	Microbased Computer Literacy	3cr
MATH 216	Probability and Statistics for Natural Sciences	4cr
MATH 217	Probability and Statistics	3cr
SDR 486	Selected Topics in SDR	1-6cr

**Total Degree Requirements:****120**

(1) Students transferring from the SDR-track must fulfill all requirements to the transferred Natural Science/Pre-professional track

## 2. Detailed Description For The Track

Rationale/Justification

The program leading to the Bachelor of Science in Natural Science proposes a new academic track with an emphasis in Science for Disaster Response (SDR). The primary justification for the new SDR-Track is to provide at IUP a formal, well-defined, interdisciplinary Chemical, Biological, Radiological or Nuclear (CBRN) program with a lab-rich curriculum. The SDR-Track is designed to provide military and non-military personnel with three levels of CBRN education and training: *Level 1* Basic CBRN Identification and Analysis, *Level 2* Effects of CBRN Materials, and *Level 3* The Structure of CBRN Materials. Additionally, the

SDR-Track is designed to provide advanced laboratory technicians with knowledge, skills, and abilities (KSAs) comparable to those needed to work in a Chemical Surety or Biological Safety Level 3 (BSL3) laboratory or in research related to CBRN defense.

The need for the United States (U.S.) to be ready to respond to possible terrorist acts using CBRN-related weapons of mass destruction (WMD) has never been more critical. The continued threat presented by the potential use of WMD by a terrorist organization against our cities and citizens constitutes the most prevalent threat to the national security of the U.S. In order to be effective in WMD response, the emergency response units within the U.S. (i.e., local, state and federal first-responder laboratory technicians) must be proficient in all aspects of their trade.

The Department of Defense (DoD) and the National Guard Bureau (NGB) through the Concurrent Technologies Corporation (*CTC*) requested that IUP develop a Bachelor of Science/ Science for Disaster Response Track (SDR-Track) to provide education for soldiers serving on the National Guard Bureau's Weapons of Mass Destruction Civil Support Teams (WMD-CST), as well as to expand the student base to incorporate civilians, health professionals, and non-military personnel from the local, state, and federal agencies. This Bachelors degree incorporates the chemistry, biology, and radiology/nuclear physics courses that were developed for the WMD-Response Element Advanced Laboratory Integrated Training and Indoctrination (WMD-REALITI) Program at IUP. All of the WMD-REALITI courses were piloted at various times at IUP from 2001 and 2003. This BS in Natural Science/SDR Track proposal is a direct result of the DoD's request for degree programs specifically designed for our Nation's first responders in the WMD community. To the best of our knowledge, this BS in Natural Science/SDR Track is the first of its kind in the United States.

The WMD first responders are responsible for attending, assessing and leading the response effort to suspected incidents involving Chemical, Biological, Radiological or Nuclear (CBRN) events. Although the WMD first responders are highly trained, they often lack the education into the "whys" of their equipment or the biological, chemical, or nuclear

principles behind the incidents that they investigate. The proposed BS in Natural Science/SDR Track will provide students with intensive education into CBRN principles, and in detecting, identifying and safely handling CBRN agents or their precursors. For the DoD, the advantages of the SDR-Track from an accredited institution are that it responds to a national need for counter-terrorism training; it meets the national mandate to improve the educational levels of soldiers within the WMD first response community; it gives these soldiers more credibility with local emergency personnel; it reduces the risk to soldiers by improving their abilities to respond to CBRN incidents; and it provides mechanisms for evaluating soldiers' learning.

For the students, this SDR-Track increases their knowledge, skills and abilities with respect to emergency response, improves their credibility at an incident site, provides an opportunity for earning university credits tied to their previous education and training, and improves their employment and/or advancement prospects. All these points act as incentives for the WMD first responders to pursue formal university education.

For IUP, the program provides a unique opportunity to serve a special community in a novel, practical and critical way; it opens up a huge and revolving student base, from across the nation (inquiries have been received from various branches of the military, from the FBI, and from the CIA, all of whom also respond to CBRN incidents); and it brings to IUP highly motivated, well-disciplined students.

Students successfully completing this program will be able to:

- Detect chemical, biological, radiological and nuclear agents and their precursors;
- Analyze real or mock incident sites for chemical, biological, radiological and nuclear agents and their precursors;
- Identify chemical, biological, radiological and nuclear agents and their precursors;
- Assess the level of hazard associated with chemical, biological, radiological and nuclear agents and their precursors;
- Make the appropriate response call based on the level of hazard associated with chemical, biological, radiological and nuclear agents and their precursors; and

- Mitigate situations that involve chemical, biological, radiological and nuclear agents and their precursors through the safe handling of the substances.

These student learning outcomes will be assessed through paper-based exams, responses to mock incidents, and laboratory exercises.

### Credit Requirements

The SDR-Track is a 120-credit degree that has been developed specifically for both military and non-military personnel in the WMD first responder community. The core consists of 60 credits of lecture and laboratory sessions in biology, chemistry, and physics, and 4-10 credits of mathematics and foreign language. Students earn the remaining 50-58 credits in Liberal Studies Requirements courses and free electives.

The proposed SDR-Track emphasizes hands-on laboratory experience related to CBRN detection, analysis, identification, and mitigation. The track includes a total of 39 credits among its required SDR courses, and students may choose additional SDR courses from among the free electives. The required SDR laboratory courses introduce students to basic CBRN instrumentation, experimentation, data analysis and principles involving WMD/CBRN-related devices.

The proposed SDR-Track also includes 1-7 credits of free electives which include topics in molecular biology and biotechnology (BIOL 401, BIOL 410), and CBRN identification and analysis (SDR 486/586). SDR 486/586 is a lecture-laboratory course designed for first responders in the WMD community and related emergency planners. Topics will be related to the most recent advances in CBRN detection, identification, analysis, and mitigation. Topics and instructors may be the same or change annually.

There are two types of delivery formats for the SDR courses – a non intensive delivery format and an intensive delivery format. The non intensive delivery format involves teaching a scheduled course throughout a 14-week semester. This delivery format is similar to the

traditional way that courses and programs are delivered at IUP and will accommodate students who want to learn in this manner. The intensive delivery format involves teaching a scheduled course in a compressed timeframe. This format is designed to accommodate IUP students who are active duty first responders in the WMD response community and who are required to spend most of their time at their home stations. This intensive delivery format has been designed in collaboration with personnel from the DoD, CTTSO, TSWG, NGB, and the Weapons of Mass Destruction-Civil Support Teams to match the usual delivery method used to educate and train the WMD first response force. The active WMD first responders are accustomed to this intensive delivery format and prefer it over the 14-week semester delivery format because it enables them to stay more focused. The reason that they can stay more focused is that they have no other commitments during the duration of the intensive delivery. The first responders come and stay in Indiana, PA and typically, each student spends 14 hours a day, including weekends, with the SDR faculty. This is not true for IUP's typical students. The grades acquired from conducting courses in the intensive delivery format support that effective learning is taking place. The students are provided with all course materials at least two weeks before the start of the course.

The type of delivery format will be determined by student demand and the critical number of students required to conduct the courses in a fiscally sound manner. It is expected that the intensive delivery format will be used most often because the target student audience is the active first responders who can not be away from their home stations for long periods of time. Presently, one cohort of up to 24 students per year is possible due to faculty availability, space and laboratory equipment. The non intensive delivery format will be conducted only if the critical number of students is available. Only one type of delivery format will be conducted during a semester or summer. However, the intensive delivery format could be offered during summer and the non intensive delivery format could be offered during the regular academic year.





### **Part III. Implementation**

1. How will the proposed new tracks affect students already in the existing program?

The students in the proposed SDR-Track will be mainly from the WMD first response community and should not affect students already in the existing program which are mostly pre-professional students.

2. Are faculty resources adequate? If you are not requesting or have not been authorized to hire additional faculty, demonstrate how these courses will fit into the schedule(s) of current faculty. What will be taught less frequently or in fewer sections to make this possible?

Presently, faculty resources are adequate. The College of Natural Sciences and Mathematics, through the Dean's Office, is supportive of the B. S. degree in the Science for Disaster Response and will work with the Natural Sciences Coordinator to identify the necessary resources to make the program successful. See Appendix A for letter of support from Dean John S. Eck.

In addition to the appropriate academic background, at least one faculty member from each one of the disciplines chemistry (organic), biology, and physics (nuclear) must also have extensive experience or training as a safety officer in their field. Faculty teaching the SDR courses developed the curriculum in consultation with the Department of Defense (DOD) and met the DoD expectations for training the first responders (National Guard, Marines etc.).

3. Are other resources adequate? (Space, equipment, supplies, travel funds)

#### Space

Initially, this degree program will be conducted using the existing facilities in IUP's science building, Weyandt Hall, and the newly renovated second floor of Walsh Hall for chemistry and biology laboratory courses in SDR. This renovation is scheduled to begin at the end of the Spring 2004 semester. The WMD programs, including the BS in Natural Science/SDR track and the MS in SDR degree programs, are under the umbrella of IUP's John P. Murtha

Institute of Homeland Security. The WMD programs are designated to have space in this building when it is constructed.

#### Equipment and Supplies

The instructional equipment and supplies and maintenance necessary to support such equipment needed by the SDR graduate courses are extensive and are covered by contracts with CTC, either through direct or indirect costs. The SDR undergraduate courses will share the same major equipment. Supplies that are needed only for the undergraduate courses will be bought through the WMD operating budget, which will be generated from indirect funds acquired by contracted offerings of the WMD courses or by funds generated by student fees.

#### Travel Funds

Not applicable.

4. Do you expect an increase or decrease in the number of students as a result of these revisions? If so, how will the department adjust?

We expect an increase in the existing student population as a result of the establishment of the BS in Natural Science/SDR track at IUP. To compensate for this increase, additional faculty will be hired in the chemistry, biology, and physics departments. The College of Natural Sciences and Mathematics, through the Dean's Office, is supportive of the B. S. degree in the Science for Disaster Response and will work with the Natural Sciences Coordinator to identify the necessary resources to make the program successful. See Appendix A for letter of support from Dean John S. Eck.

5. Intended implementation date (semester and year).

The program is expected to start as soon as the new track is approved. Intended implementation date is fall 2005.

#### **Part IV. Periodic Assessment**

1. Describe the evaluation plan. Include evaluation criteria. Specify how student input will be incorporated in the evaluation process.
2. Specify the frequency of the evaluations.
3. Identify the evaluating entity.

To ensure that this degree program is meeting the government standards for CBRN education and training, government Red Teams of evaluators may assess the program whenever they desire. Government Red Teams are composed of Ph.D. scientists, policy makers in the education and training of the first responders, and principle people in the government agencies that have counterterrorism components. During an evaluation, the Red Team will review course materials, inspect facilities, and observe lectures and laboratories as they are taught. Following each evaluation, the Red Team will provide a written evaluation report that includes strengths and weaknesses of the program as well as suggestions for improvement. The program will be revised based on the feedback from the Red Team to improve the quality of the program. Due to the importance of the goals and objectives of this degree program, IUP and the government Red Teams will work together very closely to provide a high quality program for the WMD first responders.

To ensure that the BS in Natural Science/SDR Track degree program is current with the most recent advances in CBRN education and training, the program of courses will be evaluated continuously by the SDR faculty. Data will be obtained through methods such as Government-supplied documents, participation in conferences, and correspondence with personnel associated with the WMD first responder community. The data will regard the national needs for combating WMD terrorism and the education and training that the students receive outside of IUP. Additionally, data will be obtained regarding the latest instrumentation used to detect and identify CBRN agents. The data will be used to conduct a gap analysis and the content of the BS in Natural Science/SDR Track degree program will be adjusted to fill the gaps wherever possible. These data also will be used to determine the need for incorporating new instrumentation and providing for faculty development.

Student evaluations, using IUP standard forms, will be administered with every offering of the courses in the BS in Natural Science/SDR Track program. Additionally, at the end of the program during the last residency period at IUP, the students will evaluate the BS in Natural Science/Science for Disaster Response program by completing a program assessment survey (see Appendix B).

Student learning outcomes will be assessed through paper-based exams, responses to mock incidents, and laboratory exercises (see Appendix C for cognitive maps).

## **Part V. Course Proposals**

The BS in Natural Science/Science for Disaster Response Track involves the following new courses. Complete course proposals are attached.

### **SDR 111 Basic Biological Laboratory Operations (3c-3l-5cr)**

**Prerequisites:** BIOL 111 or equivalent and permission of instructor and local, state or federal agency/organization authorization.

Level 1 biology describes the characteristics of living organisms and the different levels of biological safety as it applies to microbiology and recombinant DNA laboratories; differentiating between atoms, molecules, elements, and compounds and their importance in biologic systems. Macromolecules and energy generation are discussed. Genetics and biotechnology and the role they play in WMD will be extensively studied.

### **SDR 121 Chemical Recognition and Identification Techniques (3c-4l-5cr)**

**Prerequisites:** CHEM 113 and 114 or equivalent and permission of instructor and local, state or federal agency/organization authorization.

Level 1 chemistry focuses on atomic structure; periodic properties; chemical bonding, chemical structure, molecular forces, types of chemical reactions, stoichiometry, chemical kinetics,

chemical equilibria, and acids and bases in relation to CBRN identification and analysis. Laboratory exercises focus on techniques to aid CBRN identification and analysis.

**SDR 131 Principles of Radiation**

(2c-2l-3cr)

**Prerequisites:** PHYS 111, 121, 112, and 122 or equivalent and permission of instructor and local, state or federal agency/organization authorization.

Level 1 nuclear physics focuses on nuclear radiation basics; radioactivity; radiation measurements, and sources of nuclear radiation in relation to CBRN materials identification and analysis. Laboratory exercises focus on techniques to aid CBRN materials identification and analysis.

**SDR 211 Interaction of CBRN Materials with Biological Systems  
and PCR Technology**

(3c-3l-5cr)

**Pre-requisites:** SDR 111 and permission of instructor and local, state or federal agency/organization authorization.

Level 2 biology designed to provide the intermediate level first responders with the knowledge, skills, and practical capabilities to effectively identify bacteria, viruses, toxins, and potential genetically modified pathogens which might be used as biological weapons against military forces or civilian communities. Lecture presentations bring together variety of subjects intimately linked to the advancement of molecular genetics. The course integrates advanced safety techniques in handling microbes to basic principles and facts of microbiology, microscopy and microbe identification using both molecular biological and immunological techniques. A large section of the course features an in-depth discussion of principles and application of polymerase chain reaction. Hands-on training is a primary goal and is complemented by formal lectures.

**SDR 221 Chemistry of Precursor Compounds**

(3c-4l-5cr)

**Prerequisites:** SDR 121 and permission of instructor and local, state or federal agency/organization authorization.

Level 2 chemistry designed to lay the foundation for understanding the modes of action and preparation of various chemical agents. Topics include the basic organic chemistry of the alkanes, alkenes, alkynes, alcohols, and aromatics (the major TICs and TIMs); free radical chemistry; explosives; the vesicants and lachrymators; and stereochemistry. Laboratory exercises include synthetic techniques to aid the student in quick identification of clandestine drug activities or agent synthesis.

**SDR 231 Hazards of Ionizing Radiation**

(2c-2l-3cr)

**Prerequisites:** SDR 131 and permission of instructor and local, state or federal agency/organization authorization.

Level 2 nuclear physics designed to provide the intermediate level first responders with the knowledge, skills, and abilities necessary to assess the radiation hazards at an incident site that involves the radiological or nuclear weapons of mass destruction. The lecture presentation topics include internal and external radiation hazards, the units and quantities used to measure the radiation effects on human including radiation dose calculations, the effects of radiation on various parts of the body, the Nuclear Regulatory Commission dose standards and the methods used to protect individuals from the harmful effects of radiation and contamination. A practical exercise is used to emphasize the techniques necessary to estimate the dose received from various radiation sources by measuring the radiation exposure with survey meters and detectors.

**SDR 311 Structure of DNA, RNA, and Cell Morphology**

(3c-3l-5cr)

**Prerequisites:** SDR 211, CHEM 113, 114 or equivalent, and permission of instructor and local, state or federal agency/organization authorization.

Level 3 biology provides the apprentice level laboratory technician with the knowledge and laboratory skills necessary to work in a biological safety laboratory. Focuses on the basic

understanding of fundamental microbiology, staining procedures and microscopic identification of potential biological agents. The possible role of microorganisms in bioterrorism is explored. Emphasis is placed on host-parasite interactions and the human immune system. Emphasis in laboratory classes in microbiology is on aseptic techniques and safe handling of biological agents. The laboratories in eukaryotic gene expression, cloning of sheep DNA and PCR technology provide the opportunity to gain knowledge of how genes could be modified and genetically manipulated in clandestine laboratories to produce potential bioterroristic agents.

**SDR 321 Organic Chemistry of WMD, TICS, and TIMS** (3c-4l-5cr)

**Prerequisites:** SDR 221 and permission of instructor and local, state or federal agency/organization authorization.

Level 3 chemistry focuses on aldehydes, ketones, carboxylic acids, derivatives of carboxylic acids, and amines as they pertain to weapons of mass destruction. The nomenclature, preparations and reactions of these classes of organic compounds are presented. Additional topics include organophosphorous chemistry for the synthesis of nerve agents, precursors and hazards involved with the synthesis of drugs in clandestine laboratories, and the terminology of mass spectrometry. Practical exercises include basic wet chemistry techniques for identification of unknown aldehydes and ketones, basic separation techniques, and a synthetic technique that is similar to what is used in a clandestine drug lab.

**SDR 331 Interaction of Ionizing Radiation** (2c-2l-3cr)

**Prerequisites:** SDR 231 and permission of instructor and local, state or federal agency/organization authorization.

Level 3 nuclear physics designed to provide the apprentice level first responders with the knowledge, skills, and abilities necessary to identify the radiation hazards at an incident site that involves the radiological or nuclear weapons of mass destruction. Focuses on radiation detection and provides students with the ability to conduct the sampling, evaluation, detection, projection, and control of radiological hazards. Gamma ray spectroscopy systems are used in data acquisition and analysis in the laboratory.



**SDR 486 Selected Topics in SDR**

(var-1cr-6cr)

**Prerequisite:** Permission of instructor and local, state or federal agency/organization authorization.

Lecture-laboratory course designed for first responders in the WMD community and related emergency planners. Topics will be related to the most recent advances in chemical, biological, radiological and nuclear (CBRN) detection, identification, analysis, and mitigation. Topics and instructors may be the same or vary.

**Part VI. Letters of Support or Acknowledgement**

The following letters of support are part of this package. (See Appendix A)

- Dean, College of Natural Sciences and Mathematics
- Assistant Dean, College of Natural Sciences and Mathematics
- Chair, Department of Biology
- Chair, Department of Chemistry
- Chair, Department of Physics

**APPENDIX A**  
**LETTERS OF SUPPORT**

**Dean, College of Natural Sciences and Mathematics**

From: "John S. Eck" <[JSECK@iup.edu](mailto:JSECK@iup.edu)>  
To: "N Bharathan" <[bharathn@grove.iup.edu](mailto:bharathn@grove.iup.edu)>  
Sent: Wednesday, February 25, 2004 1:20 PM  
Subject: B.S. degree in the Science of Disaster Response

The College of Natural Sciences and Mathematics, through the Dean's Office, is supportive of the B. S. degree in the Science of Disaster Response and will work with the Natural Sciences Coordinator to identify the necessary resources to make the program successful. John S. Eck, Dean

**APPENDIX A**  
**LETTERS OF SUPPORT**

**Assistant Dean, College of Natural Sciences and Mathematics**

----- Original Message -----

From: "Ola Kaniasty" <AKANIAST@iup.edu>

To: "Sechrist, Gail S" <Gail.Sechrist@iup.edu>

Cc: "McCarty, Marcia L" <Marcia.McCarty@iup.edu>; "Eddy, Roberta Myers" <Roberta.Eddy@iup.edu>

Sent: Tuesday, October 26, 2004 1:54 PM

Subject: SDR Track

> Dear Gail,

>

> I am writing to confirm that the issue of the number of credits vs. contact  
> hours assigned to laboratory courses included in the SDR Track were  
> extensively discussed by the College of Natural Sciences and Mathematics  
> Curriculum Committee during the Spring 2004 semester. In the end, the CNSM  
> Curriculum Committee approved the proposed BS in Natural Science SDR Track  
> (1 abstention, 1 objection) with credits and contact hours assigned to  
> lectures and laboratories as they were submitted to the UWUCC. The  
> Committee agreed with justification that due to the special nature of the  
> laboratory exercises involved in the program, more intensive in content and  
> requiring students to work with more dangerous and/or high-risk materials,  
> deviation from the standard was valid. The 3c-4l-5 cr for SDR 121, SDR 221,  
> and SDR 321 have been acknowledged and approved by the College of Natural  
> Sciences and Mathematics.

>

> Ola Kaniasty

>

>

>

**APPENDIX A**  
**LETTERS OF SUPPORT**

**Chair, Department of Biology**

----- Original Message -----

**From:** [carl luciano](#)

**To:** [Bobbie Eddy](#)

**Cc:** [luciano@iup.edu](#) ; [Ola Kaniasty](#)

**Sent:** Tuesday, April 06, 2004 4:08 PM

**Subject:** letter of support

Bobbie

This is to inform you that the Biology Department unanimously approved the proposal for the Natural Sciences B.S. in SDR at the faculty meeting on April 2. I add my own support to that of the Department.

Dr. Carl S. Luciano  
Professor and Department Chair  
Department of Biology  
Indiana University of Pennsylvania

**APPENDIX A**  
**LETTERS OF SUPPORT**

**Chair, Department of Chemistry**

----- Original Message -----

**From:** Dr. Ruiess Van Fossen Ramsey  
**To:** RMEDDY@iup.edu  
**Cc:** Ola Kaniasty ; RVBravo@iup.edu  
**Sent:** Wednesday, April 14, 2004 2:41 PM  
**Subject:** Support vote for SDR proposal

TO WHOM IT MAY CONCERN  
FROM: Ruiess Van Fossen Ramsey, Chairperson  
Chemistry Department

The Chemistry Department voted by secret ballot concerning support for the BS-Natural Sciences SDR Track Proposal. The results were as follows: 9 votes in favor of supporting the proposal, 7 votes against supporting the proposal and 2 abstentions.

APPENDIX A  
LETTERS OF SUPPORT

Chair, Department of Physics

----- Original Message -----

**From:** Ken Hershman

**To:** Bobbie M. Eddy

**Cc:** Ken Hershman ; VJ Wijekumar

**Sent:** Friday, April 02, 2004 6:05 PM

**Subject:** Re: letter of support for the BS in Nat Sci/SDR track

Dear Bobbie Eddy,

The Physics Department is pleased to support the BS in SDR because it has the potential of providing some students for our physics courses but we support it with the proviso that the needed FTE from the Physics Department to teach the physics related courses in the program be appropriately compensated by grants or tuition received in its operation.

Sincerely,  
Ken Hershman  
Chairman  
IUP Physics Department