

International Association of Crime Analysts (IACA)

Crime Analysis Education Recommendations for Colleges & Universities

Standards, Methods, & Technology Committee White Paper 2012-02
September 2012

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Suggested Citation:

International Association of Crime Analysts (2012).

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About the IACA Standards, Methods, and Technology Committee

In 2010, the International Association of Crime Analysts (IACA) chartered a Standards, Methods, and Technology (SMT) committee for the purpose of defining “analytical methodologies, technologies, and core concepts relevant to the profession of crime analysis.” This document is one of a continuing series of white papers that have been produced by the Subcommittee for Standards. In formulating the positions reflected in the papers, the Standards Subcommittee members develop the initial content through research and their own experience. The white paper draft is reviewed by Subject Matter Experts, an independent editor, the IACA Executive board, and IACA members, who all review and help refine the conclusions described in the white papers. Any questions related to the process for standards development should be referred to the Chair of the SMT Committee at smt@iaca.net.

Introduction

The IACA has a major interest in creating a pool of potential crime analysts specifically educated for careers as crime analysts. Analytical positions in criminal justice agencies are becoming an alternative to sworn positions as careers for criminal justice undergraduate and graduate majors. In addition, due to the increased educational requirements and use of crime analysis by police agencies, many line and management-level police officers seek education in crime analysis. However, because the crime analyst profession is relatively new, few colleges and universities include crime analysis in their criminal justice curriculum.

This white paper has two purposes. The first is to assist colleges and universities with developing or enhancing crime analysis course offerings. This paper provides an overview of the current state of crime analysis education in post-secondary educational institutions. Importantly, it provides recommendations for the administration of and content for offering a crime analysis-focused curriculum. The IACA recognizes that universities seldom offer crime analysis as a stand-alone field of study, so the recommendations here focus on a specific set of courses that would make up a concentration or a certificate program within a larger criminal justice or related major at the undergraduate and graduate levels. Notably, these recommendations are specifically for a crime analysis program of study, but they may also be adapted to meet the needs of a program specifically tailored for crime mapping or intelligence analysis programs of study. Finally, this white paper presents a level of detail adequate for guiding program development; however, it does not provide precise instructions for offering individual courses.

The paper’s second purpose is to outline the minimum standards that a college or university must follow in its crime analysis program to establish a business relationship with the IACA. These requirements are not accreditation standards nor are they part of an accreditation process facilitated by IACA, yet they may serve as a foundation for future work in this area. Thus, those regionally accredited colleges and

universities that adhere to the guidelines of this white paper will be eligible for an official partnership with the IACA and for a recommendation from the IACA to prospective students. Meeting these guidelines is likely to be a significant component of any certification or credentialing criteria developed by IACA.

Definitions

Credit hour is a standardized measure for the duration of a university course, independent of scheduling system (quarter/semester/trimester). Each hour spent by a student in the classroom with the instructor counts as one contact hour. For example, Florida State Statute 6A-10.033 (Amended 11-21-2005), Post Secondary Credit Definitions, defines college credit as:

The type of credit assigned to courses or course equivalent learning that is part of an organized and specified program leading to a graduate, baccalaureate, or associate degree. One (1) college credit is based on the learning expected from the equivalent of 15 fifty-minute periods of classroom instruction.

In addition, at most institutions of higher education, it has been the common understanding that students complete a minimum of two hours of coursework outside the classroom for every one credit hour. Thus, for a three credit course, the number of hours of direct instruction (or contact hours) is approximately 45 with an additional 90 hours of work outside the classroom. Importantly, this is used to translate contact hours for online delivery of courses for which there is not classroom instruction. In a 3 credit online course, students complete 135 hours (45 contact hours and 90 additional hours) of work. In the end, the total number of contact hours as well as total time spent on work for a course by the student should be the same whether it is delivered in a semester, quarter, or trimester system or online.

Certificate refers to recognition of completion of a sequence of courses designed to develop student knowledge in a specific topic area. Courses taken for an undergraduate or graduate level certificate may or may not count toward a specific degree, but completion of the set of courses will result in the student receiving a “certificate of completion.” Certificates are often used by working professionals who seek to build expertise in a specific field of study and demonstrate skills to current employers, but who do not need or wish to complete an entire undergraduate or graduate degree. Certificates are also sought by individuals who have not yet joined the profession and who want to show potential employers a level of knowledge in a specific topic area.

Concentration refers to a set of courses that focuses on a particular facet within an undergraduate field of study (i.e., major) or within a graduate degree. The set of specific courses counts toward the general major or degree and may be reflected in the student’s transcripts or the degree given (e.g., major in criminal justice with a concentration in crime analysis; master of science degree in criminal justice with a concentration in crime analysis).

Emphasis refers to a set of recommended courses that students take to focus on a particular facet within a field of study. It is considered a “soft” version of the concentration, since a program would not require the courses, but simply recommends them for the student to take to gain an expertise in a particular area. In this context, there is no formal recognition of the emphasis in transcripts or the degree award. To demonstrate an emphasis, on a resume a student would identify the major or degree with an “emphasis in...” and/or list the set of specific courses (e.g., bachelors of arts in criminal justice with an emphasis in crime analysis... [course 1, course 2, etc.]).

Crime analysis program is the general term used in the paper to refer to any or all of the following together—certificates, concentrations, and emphases.

The Current State of Crime Analysis Education

The research conducted in Summer 2012 for this paper found that 22 schools offered 24 different crime analysis-related certifications, concentrations, or emphases within larger criminal justice undergraduate and graduate programs (see Appendix Table, p. 11). The recommendations are built upon the current state of crime analysis education, in that they are not a summary of the current offerings in crime analysis education, but are the result of considering the current state as well as what would be ideal.

At the time of the research, no schools offer crime analysis as its own undergraduate major, and only one school offers a master’s degree specifically in crime [and intelligence] analysis. The programs range from requiring two courses to requiring 26 courses of varying credits to complete a crime analysis program. Overall, the crime analysis programs identified consist of between five and eight courses. Most of these programs are at the undergraduate level, with only a quarter of them at the graduate level.

Review of the various curricula of these crime analysis programs, as stated on each school’s web site, indicates more practical than theoretical content overall. That is, the course descriptions center on the development of hands-on skills and the creation of field-related work products. Nearly half of the programs require completion of either a crime analysis unit internship or an extensive field project. Further, the development of ancillary skills is predominant, in that more than half of the crime analysis programs also require computer or research methods courses. While several of the undergraduate and graduate degree concentrations require criminological theory courses as part of the larger degree, only two schools require theoretical coursework as part of the crime analysis program requirements. The relationship between crime and intelligence analysis is also expressed in the coursework, as more than half of the programs require some form of intelligence analysis coursework. In fact, seven of the 24 crime analysis programs identify themselves as “crime and intelligence analysis” programs.

The results presented here may not be a complete list of the current crime analysis programs, but likely represent a majority of them. Since the field of crime analysis is expanding, there also may be current programs under development that were not identified. A more complete discussion of the research results has been provided to the IACA for its web site, which will be updated as crime analysis education develops.

Recommendations for Crime Analysis Program Administration

In all aspects, undergraduate and graduate-level crime analysis programs should reflect current theory, tools, techniques, and best practices as informed by both research literature and the experiences of working analysts. The director of a crime analysis program, instructors, and students should be aware of the latest developments, terminology, and themes within the field. To this end, the IACA recommends a series of considerations. Those programs seeking a formal partnership with the IACA must adhere to the following:

1. The program should enlist individuals with practical crime analysis experience as advisors in the development and maintenance of the program. Ideally, these individuals would live close to the university's physical location, so that they can help adjust the IACA's proposed curriculum with information about the local laws, data systems, crime and disorder problems, and technology. They can also assist with the development of agency partnerships and potentially teach courses.
2. The crime analysis program's coordinator, in addition to any instructors who teach courses in the core curriculum, should maintain membership in the IACA to help ensure that the curriculum and class exercises keep up with the latest developments and topics in the field. The coordinator should also encourage students to join the IACA so that they have access to the email discussions and other resources available to members.
3. Crime analysis is a practitioner's field, so students should be exposed to the techniques and examples from professionals who have practiced it. Thus, crime analysis programs should demonstrate an attempt to involve practitioners with crime analysis experience in the educational process by hiring an individual with at least three years of crime analysis experience to teach one or two of the courses in the core curriculum. If no qualified individuals can be found in the proximity of the institution, the program coordinator as well as the instructors should bring in practicing crime analysts as guest lecturers, host periodic symposiums in which students network with crime analysts, and partner students with working analysts through internships and course projects.
4. The program coordinator or other key representative should attend the IACA's annual training conference at least every other year. The annual conferences are forums for new techniques, emerging trends, and controversial topics, and will help provide a solid understanding of crime analysis in order to create and maintain a robust crime analysis program.
5. The program coordinator and instructors should develop relationships with local municipal and county police agencies which will help supply data, guest lecturers, and internship opportunities as well as will increase both students' understanding of current crime analysis practice and provide them employment opportunities upon graduation
6. The program should develop a field study component in which students under faculty supervision work with crime analysts on problems that are of direct concern to local police or other government agencies.

Recommended Crime Analysis Course Sequence

To create the core of a undergraduate or graduate -level educational experience in crime analysis, the IACA recommends at least five course sequence for a total of 15 credits (3 credits for each course) with at least 225 contact hours (45 contact hours per course). This sequence is appropriate for certificates as well as concentrations or emphases. The goal of this sequence of courses is to provide students with a learning experience that not only teaches theories, concepts, and methods of crime analysis, but also exposes students to extensive application of the learned skills. Ultimately, the IACA is interested in increasing the number of trained and skilled crime analysts as well as the number of law enforcement professionals who are able to effectively utilize crime analysis. This course sequence ensures that students not only gain crime analysis knowledge, but also build real world skills that enable them to step into the professional world, or improve their own skills, as practitioners. An updated list of books and resources to use for these courses can be found on the IACA's website at www.iaca.net.

Although it is recommended to use a similar course sequence for crime analysis programs offered at the graduate level, adjustments at the graduate level should be made so the courses are more focused on understanding the theoretical and methodological foundations of the material and may include:

1. Adding theoretical literature, peer reviewed research articles, and government reports that expand on the content covered in a particular course;
2. Requiring that the students have a strong foundation in statistics, research methods, and computer technology so that assignments can be more complex; and
3. Requiring more writing, more intense assignments, and critical analysis of crime analysis techniques.

Although optional, the IACA highly recommends requiring internships at the graduate level, where students either complete the internship as part of the capstone course, and/or work closely with a local police department to complete a significant crime analysis project.

In any case, the following five course sequence is recommended for an undergraduate crime analysis program. Each course is 3 credits, thus requires 45 hours in the classroom and 90 outside the classroom, or 135 hours for online courses. The courses are listed in their recommended order, and each includes a suggested title, suggested course description for the university catalog, delivery format of the course, and learning outcomes.

Course 1 of 5

Suggested Title: Introduction to Crime Analysis

Suggested Course Description: Serves as an introduction to the field of crime analysis and covers the crime analysis profession, theory and role of analysis in policing, data and technology, and an

overview of the techniques for the types of crime analysis—tactical, strategic, operational, and administrative.

Delivery Format: Classroom setting or online

Learning Outcomes:

- Understand the history and context of crime analysis within the field of criminal justice
- Know the key theoretical concepts which inform the practice of crime analysis
- Understanding policing strategies and their use of crime analysis
- Know the primary types of crime analysis and the crime analysis process
- Understand sources and types of crime analysis data
- Understand the nature of national data standards and crime statistics
- Know relevant descriptive statistics using in crime analysis
- Understand the pattern identification process and relevant analysis methods
- Understand the problem solving process and relevant analysis methods
- Know how to develop and prepare appropriate analytical products for dissemination

Course 2 of 5

Suggested Title: Crime Mapping Techniques

Suggested Course Description: Using data and examples from the crime analysis world, this course introduces students to the fundamental skills necessary to prepare maps and conduct spatial analysis for crime analysis projects.

Delivery Format: Instructor-led lab or online

Learning Outcomes:

- Know the history of crime mapping in research and practice
- Understand basic concepts of crime and place theory
- Understand basic concepts of geographic and tabular data
- Know how to find and incorporate non-crime data sources
- Understand basic concepts of geographic information systems and software
- Understand basics of geodatabase management
- Know basic geoprocessing tools and processes
- Understand map layouts and exporting options
- Know types of descriptive mapping and symbolization
- Know concepts of density mapping and spatial analysis
- Know ,map production, dissemination, and use

Courses 3 and 4 out of 5

For the two courses in the middle of the sequence, it is recommended that the courses provide coverage of a combination of topics that explore crime analysis techniques more comprehensively than the first two courses and focus on building the data management and real world technical skills necessary to conduct crime analysis in practice. The topics within the two courses may be offered in a variety of combinations depending on the program’s focus and/or instructors preferences, which is why they are not specifically designated here.

Suggested Titles: Crime Analysis Techniques and Advanced Concepts of Crime Analysis

Suggested Description [adjusted depending on the course title and selected content]: The class encompasses concepts and technical skills across all major types of crime analysis: tactical, strategic, operations, and administrative. Students will engage in a series of projects that replicate the analyses and challenges crime analysts regularly encounter. Through projects, students will work with “real” crime analysis data, gain valuable understanding about the context of analytical work, and be introduced to advanced methods and knowledge.

Delivery Format: Instructor-led lab or online

Learning Outcomes:

- Apply concepts of environmental criminology and situational crime prevention
- Use commonly available desktop computing applications to query data, perform statistical calculations, and create analytical reports and presentations
- Understand and apply common techniques of tactical crime analysis, such as:
 - Pattern analysis
 - Threshold analysis
 - Geographic profiling
- Understand and apply common techniques of strategic analysis and problem analysis, such as:
 - Preparing statistical reports
 - Trend identification and forecasting
 - Primary data collection
 - Qualitative field research and analysis
 - Program evaluation
- Understand and apply common techniques of intelligence analysis, such as:
 - Identification and prioritization of repeat offenders
 - Link analysis of criminal organizations
- Create effective internal and external products based on the different analysis above
- Understand the types of police approaches supported by these different analytical processes
- Understand how to effectively manage and administer a crime analysis unit within a police agency

Course 5 of 5

Suggested Title: Capstone: Crime Analysis Application

Suggested Description: As the capstone to the crime analysis sequence, this course exposes the student to the experience of developing an original crime analysis project and bringing the project to completion.

Delivery Format: Instructor-led lab or online

Learning Outcomes:

- Self-initiate an original analytical project
- Develop and/or obtain data necessary to complete project
- Application of relevant theory
- Utilize relevant analytical methods and tools to complete analytical task
- Draw meaningful conclusions from analysis
- Prepare comprehensive suite of analytical products for dissemination
- Communicate findings of analysis through written and oral presentation to a relevant audience

Note: Typically, the project will be of a strategic or problem-solving nature and will follow the SARA process, as tactical, operational, and administrative projects are likely covered in the second and the third courses since the projects are short-term. However, certain administrative projects may also be appropriate (e.g., an evaluation of license plate readers). Students would receive extensive guidance from the instructor which would include provided data, topic selection, method application, etc. Especially for graduate students, the project should be conducted directly with a local police agency.

Expanding the Core Sequence

The five courses listed above are designed to deliver a crime analysis educational experience that exposes students to critical knowledge and skills required in the field of crime analysis. On their own, this core sequence of classes could serve as the entire or the basis for a:

- University-level certificate program (which requires an associate's degree or higher to enroll)
- Undergraduate concentration or emphasis within a criminal justice-related degree program
- Graduate concentration or emphasis in a criminal justice-related degree program, where no prior knowledge of crime analysis is expected, but should include a workload increase commensurate with the graduate learning experience.

Importantly, because crime analysis is a practice-oriented field of study, internships are integral to the success of preparing students for this career, so may be added to the course sequence as a requirement. Internship programs provide multiple benefits as the students gain crime analysis experience, and the police agencies obtain labor and potential candidates for future crime analyst positions. A crime analysis internship requires between 9 and 18 hours of work per week and ranges from 3 to 6 credit hours (135 to 270 contact hours) depending on the school's requirements. Because an intern is working in a police agency with sensitive data, students may be required to pass an extensive background investigation and

a polygraph exam. This process can take several months, so internship coordinators must take this into account when setting up a crime analysis internship program.

Lastly, while crime analysis may not be a stand-alone field of study, there are educational topics covered in courses or as part of a course that go beyond the scope of the previous recommendations, are relevant to crime analysis practice, and are important for crime analysis professionals to know. These topics are listed by content and are intended to provide guidance for the development of a crime analysis program with more than five classes, the development of a crime analysis minor, or for recommending elective coursework for crime analysis students. They are listed in no particular order.

Criminal Justice and Public Administration Topics:

- Police research, policy, and practice
- Police effectiveness in crime reduction
- Police approaches for crime reduction (e.g., community policing, problem-oriented policing, hot spots policing, intelligence-led policing)
- Crime prevention concepts and strategies
- Criminal investigations
- Criminal intelligence analysis
- Organizational management and culture

Criminology Topics:

- Survey of criminological theory
- Social ecology and disorganization theory
- Environmental criminology (rational choice, crime pattern theory, routine activity theory)
- Criminology of place

Research Methods and Statistics:

- Quantitative data collection and research methods
- Qualitative data collection and research methods
- Descriptive and inferential statistics
- Program evaluation

Information Technology Topics:

- Database administration
- Network administration
- Introduction to computer programming
- Introduction to content management systems
- Introduction to data warehousing
- General geographic information systems software
- Basic and advanced business software applications (e.g., Microsoft Access, Excel, Power Point, Word, Publisher)
- Reporting software (e.g., Crystal Reports, Cognos, SQL Report Builder)
- Statistical software (e.g., SPSS, SAS, STATA, etc.)

Communications Topics:

- Technical writing

- Effective communication
- Effective presentations

Appendix Table: Known Crime Analysis Programs

Research Conducted: July 2012

	College or University	Undergraduate		Graduate		
		Certificate	Concentration or Emphasis	Certificate	Concentration or Emphasis	Masters Degree
1	California State University Fullerton	✓				
2	California State University Sacramento	✓				
3	Century College	✓				
4	Clackamas Community College	✓				
5	Florida Atlantic University		✓			
6	Herkimer County Community College		✓			
7	Hillsborough Community College	✓				
8	Indiana Institute of Technology		✓			
9	Mercyhurst College		✓			
10	New Mexico State University		✓			
11	Portland State University	✓				
12	Radford University			✓		
13	Seattle University			✓		
14	Sinclair Community College	✓				
15	St. Joseph's University				✓	
16	Tiffin University			✓	✓	
17	University of California - Riverside	✓				
18	University of Central Florida			✓		
19	University of Central Oklahoma					✓
20	University of New Haven	✓	✓			
21	University of Texas - Arlington	✓				
22	Western Oregon University	✓	✓			