

Proposed Curriculum Guidelines for Masters Programs in EM With an IS Focus

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ABSTRACT

Information systems (IS) in emergency management (EM) support situational awareness and agility during a disaster so that professionals do not only need to follow rigid pre-defined plans that might be unsuitable in the unfolding situation. To use IS effectively, managers need an understanding of the capabilities of these systems; this can be achieved through an appropriate set of educational courses. This article presents the results of the analysis of a survey that proposed EM and IS courses for master level programs. The survey was completed by 373 practitioners, academics and/or researchers with EM experience. All proposed courses were rated above a 4 on a 7-point scale for how essential they are to a curriculum. A qualitative analysis indicates that some low ratings were due to disagreement over the described course content. An unexpected finding was that a substantial number of respondents spontaneously expressed opposition to the use of IS for EM in general. Findings are discussed and a preliminary curriculum is proposed.

KEYWORDS

EM, Emergency Management Education, Information Systems, Master's Curricula

INTRODUCTION

Emergency management (EM) is a crucial and growing profession, thus it is important that higher education institutions provide degree programs that will prepare students to take responsible positions in the field. The terrorist attacks of September 11, 2001 in the USA and in other places such as London and Paris, and the increasing number of natural disasters related to climate change, have led governments worldwide to invest considerable resources in the writing of emergency response plans and the training of emergency responders. Particularly in the United States, the federal government has created new homeland security organizations and urged state and local governments to appoint official emergency response agencies and draw up plans for a variety of disaster scenarios (Perry & Lindell, 2003). In Europe, the DITAC (Disaster Training Curriculum) project has identified deficiencies in current responder training approaches and analyzed the characteristics and content

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required for a new, standardized European course in disaster management and emergencies (Manesh-Khorram et al., 2015).

The growth in the EM profession is reflected in the large and increasing number of higher education programs offering degrees or certificates in emergency management (see for example, <http://www.training.fema.gov/hiedu/collegelist>). There are more undergraduate programs listed in Emergency Management (50) than master's programs (42 as of December 2016) in the USA. In addition to the EM master's degrees, there were 44 masters' programs listed in the related field of Homeland Security. However, when one looks at the curricula for the degrees, there are generally few, if any, courses in Information Systems, even in the Homeland Security programs, which one would think would include cyber-security. Given that technology is becoming more ubiquitously used in emergency management, this is a gap that needs to be addressed.

There have been calls for standard curricula guidelines for EM for some time. For instance, Alexander (2003) discussed the possible future role of standards in assuring the quality and content of programs for educating and training people in the fields of emergency planning and management. Due to the complex and multi-disciplinary nature of EM, it has been a challenge for higher education institutions to incorporate all the necessary knowledge within the curriculum (Perdikou et al., 2014). A second identified challenge is a lack of flexibility of formal education institutions to provide rapid responses to the dynamic requirements of practitioners and EM organizations, and to their need for continued lifelong learning (Thayaparan et al., 2015).

As active participants in the more than decade-old ISCRAM association (Information Systems for Crisis Response and Management), the authors' premise is that knowledge and use of information systems is a key part of emergency management today and in the future, and ought to be included in masters' programs (Turoff, 2014). Therefore, with the support of ISCRAM, an education committee was formed that subsequently designed and carried out a survey of EM scholars and practitioners aimed at developing master's level curricula for EM in general, and for Information Systems (IS) master's programs with a concentration in EM. To our knowledge, this is the first investigation into which IS courses need to be included in master's level EM programs. The initial circulation of the survey went to participants in the ISCRAM 2015 conference, and others to whom they may have passed on the link. The preliminary quantitative results of that survey, with 111 respondents, were presented at the ISCRAM 2016 conference (Plotnick et al., 2016). Subsequently, with the cooperation of IAEM (the International Association of Emergency Managers), the invitation to participate was circulated much more widely, resulting in 373 total responses, including many more responses from practitioners. Many of the questions had comment boxes as well as fixed responses. A preliminary analysis of some of the themes raised in these comments appeared in (Turoff et al., 2017). This paper presents a comprehensive overview of the final quantitative and qualitative results of the study. However, it must be noted that the resultant recommended curriculum is based on the views of academics and practitioners, and not of deans, department chairs, and other academic administrators with the power to implement such recommendations and thus is just one of a number of perspectives that ultimately must be considered.

After reviewing the methods employed, the final quantitative results of the survey, including an exploration of characteristics of respondents that were related to differences of opinion on courses in the suggested curricula are presented. Secondly, the results of a rigorous content analysis of free text responses for four of the courses, plus selected quotes related to the other courses described in the study are discussed. In addition, examples of an unanticipated result that surfaced spontaneously in text comments to a variety of questions: the importance of Information Systems in EM are presented. The paper ends with a discussion and conclusions section, including limitations of the study and suggested future research.

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