



CREATING AND CHANGING UNDERGRADUATE ACADEMIC PROGRAMS

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Control #

TINST-20140507

After college/school/campus review, send a signed original and 1 copy to the Curriculum Office/FCAS, Box 355850.
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College/Campus UW Tacoma

Department/Unit Institute of Technology

Date May 7, 2014

New Programs

- Leading to a Bachelor of ____ in ____ degree.
- Leading to a Bachelor of ____ degree with a major in ____.
- Leading to a **Mobile Digital Forensics** Option within the existing major in **Information Technology**.
- Leading to a minor in ____

Changes to Existing Programs

- New Admission Requirements for the Major in ____ within the Bachelor of ____.
- Revised Admission Requirements for the Major in ____ within the Bachelor of ____.
- Revised Program Requirements for the Major in ____ within the Bachelor of ____.
- Revised Requirements for the Option in ____ within the major in ____.
- Revised Requirements for the Minor in ____.

Other Changes

- Change name of program from ____ to ____.
- Change delivery method or location of program.
- New or Revised Continuation Policy for ____.
- New Honors Requirements for ____.
- Eliminate program in ____.

Proposed Effective Date: **Quarter:** Autumn Winter Spring Summer **Year: 2015**

Contact Person: Charles Costarella

Phone: 253-692-5980

Email: costarec@uw.edu

Box: 358426

EXPLANATION OF AND RATIONALE FOR PROPOSED CHANGE

For new program, please include any relevant supporting documentation such as student learning outcomes, projected enrollments, letters of support and departmental handouts. (Use additional pages if necessary).

The purpose of this addition is to offer IT students a new series of 3 courses, each a 400 level elective in the IT program, that would provide thorough coverage of the Mobile Digital Forensics area of study.

The demand for expertise in this area is growing in both the law enforcement and private sectors as mobile devices populate private and public networks and are brought into the enterprise and become involved in the commission of crimes by both criminals and victims. Recovery and proper handling of the data from these devices as well as communication about the evidence within law enforcement agencies and courts is often the difference between a conviction and an unsolved case.

This series of 3 courses would allow a cohort of students to receive the introductory level course and then explore in more detail and depth the theory, methodologies, tools, and best practices of this growing field. The final course would allow an element of research into bleeding edge developments in this dynamic technology field.

Offering this series of courses to IT students is aligned with the University's broad goal of serving the local community. The partnership with the Tacoma Police Department will establish an intern stream for students to work in the local community for law enforcement and establish ties for future employment. The knowledge, skills, and material covered in this series of courses will be used to solve real crimes with real victims from the local community who have been robbed, beaten, and in some cases, brutally raped and murdered.

OTHER DEPARTMENTS AFFECTED

List all departments/units/ or co-accredited programs affected by your new program or changes to your existing program and acquire the signature of the chair/director of each department/unit listed. Attach additional page(s) if necessary. *See online instructions.

Department/Unit:	Chair/Program Director:	Date:
Department/Unit:	Chair/Program Director:	Date:

CATALOG COPY
<p>Catalog Copy as currently written. Include only sections/paragraphs that would be changed if your request is approved. Please cross out or otherwise highlight any deletions.</p> <p>TINFO 444 Mobile Digital Forensics I – Introduction to mobile digital forensics including the theory, methodologies, tools, and strategies used by mobile digital forensic examiners. Includes study of case evidence leading the examiner through various approaches and techniques to determine facts that can be presented in court and effective ways of communicating the results of digital investigations.</p> <p>TINFO 445 Mobile Digital Forensics II – Further exploration of mobile digital forensics including the theory, methodologies, tools, and strategies used by examiners. Includes in depth study of case evidence including multiple device cross correlation of data, data carving techniques, and obtaining evidence from ASCII, Unicode, and hex views using regular expressions and other advanced search techniques.</p> <p>TINFO 446 Mobile Digital Forensics III – Further exploration of mobile digital forensics. Includes project oriented case evidence to help solve crimes. Advanced data carving techniques. All strategies and tools previously studied will be combined to synthesize custom solutions. Emphasis on actual case problems. New experimental techniques and tools in the field will be explored.</p>

Educational Objectives

The TINFO 444 Mobile Digital Forensics I student will achieve the following objectives:

- Understand the legal process involved in retrieving stored data on cellular phones and wireless providers
- Determine the difference between virtual networks and network operators and their roles in forensic exams and the search warrant process
- Explain the dynamic language involved in the legal process and the origins of the same
- Track how a cell phone call is routed through the wireless network or outside through a public switch and where the evidence may be located
- Locate user evidence within the file structure of a subscriber identity module and generate reports on findings
- Execute Attention Terminal commands to cellular phones to understand communication protocols of tools and utilities used in forensic exams
- Understand necessary trouble shooting steps on cellular devices that fail to communicate with various utilities employed throughout the course
- Hand parse artifacts that are missed by forensic tools and utilities
- Connect various commercial and open source logical tools to cell phones and extracted user data into a reportable format
- Conduct numerous validation techniques that confirm logical forensic exam results
- Apply progressive learned techniques on various file systems and cellular phones which require specific artifacts to be located to solve an actual past or current case problem
- Provide exploits or solutions to actual criminal cases that arise during the course of instruction

The TINFO 445 Mobile Digital Forensics II student will achieve the following objectives:

- Understand how chip memory functions on cellular phones, the differences and features between major types and how this affects the physical acquisition process.
- Work within Cellebrite Physical Analyzer and conduct manual parsing of stored user data using plug-ins, chains and premade model chains.
- Use a USB write blocker, image removable storage and locate deleted data missed by other forensic tools.
- Use logical and physical acquisitions from other forensics tools and parse using Physical Analyzer.
- Conduct searches using their own custom made python scripts as well as example scripts.
- Search for user install password codes.
- Use range searches to narrow down dates and times of stored artifacts.
- Conduct regular expression searches using custom made expressions and example expressions.
- Sweep hex values and decode the unknown values using the value tab within Physical Analyzer.
- Use hex and entity bookmarks to note specific values not normally parsed.

Required T INFO Core Courses (5 credits)

TINFO 444 (5 units)

The TINFO 446 Mobile Digital Forensics III student will achieve the following objectives:

- Correctly analyze a problem in the mobile digital forensic space and be able to design a correct solution comprised of the tools and techniques studied in the course series.
- Demonstrate ability to use advanced carving techniques and other advanced features of available tools
- Demonstrate ability to write custom scripts and create correct Regular Expressions to perform advanced searches
- Recognize where available tools fail to correctly find evidence and be able to synthesize solutions by combining tools or crafting custom solutions
- Use advanced data carving features of Physical Analyzer.

Required T INFO Core Courses

TINFO 444 (5 units) and TINFO 445 (5 units)

Graduation Requirements


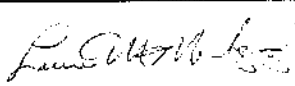
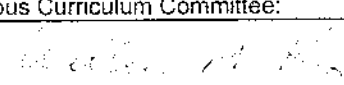
Successful completion of each course in this series will fulfill the requirement for 5 units of a 400 level elective course in the IT program towards the BS degree in IT.

Student Outcomes

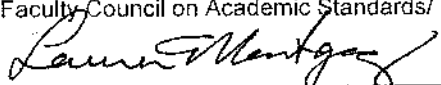
The course supports the following Student Outcomes from the IT Program

- An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution
- An understanding of professional, ethical, legal, security and social issues and responsibilities
- An ability to communicate effectively with a range of audiences
- An ability to use current techniques, skills, and tools necessary for computing practice
- An understanding of best practices and standards and their application

APPROVALS

Chair/Program Director: 	Date: 08/28/2014
College/School/Campus Curriculum Committee: 	Date: 10/28/14
Dean/Vice Chancellor: 	Date: 10/28/14
Faculty Council on Academic Standards/ General Faculty Organization/Faculty Assembly Chair:	Date:

POST TRI-CAMPUS APPROVAL (when needed)

Faculty Council on Academic Standards/ General Faculty Organization/Faculty Assembly Chair: 	Date: 2/10/15
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Zaide Chavez

From: costarec@gmail.com on behalf of Charles Costarella <costarec@uw.edu>
Sent: Wednesday, October 01, 2014 5:35 PM
To: Zaide Chavez
Cc: CHARLES E. COSTARELLA; Bryan S. Goda; Lauren Montgomery
Subject: Re: FW: APCC meeting on Program Change

<http://www.tacoma.uw.edu/news/article/what-are-%E2%80%9Cgeospatial-technologies%E2%80%9D>

<http://www.tacoma.uw.edu/urban-studies/gis-software-and-lab>

Committee:

After looking into the GIS program, both the Master's Program and the certificate program, we see the following disconnects with respect to a collaboration:

-- The Geospatial Studies program is a Masters program

-- ITS is an undergrad program

-- ITS program is taken following a cohort model and our 400 level classes are filled with our students (where/when would the GIS students have a chance to take the offered course? How would we fit them in?)

-- ITS students must complete all 200 level pre-reqs before proceeding to the 400 level electives. Specifically, they have had TCP/IP networking, ITS math, network programming, etc., and specific pre-reqs that I don't see in the GIS program.

-- GIS Certificate program focuses on a software suite Geo plotting/mapping tools i.e., ArcGIS (look at the second link). ITS students would have no experience or exposure to these tools. Conversely, there are numerous digital forensics software tools and techniques that are used in the device analysis escalation from simple "burner" phones often preferred by street criminals to the most current advanced devices that are essentially mobile hand held computers.

-- The Mobile Digital Forensics courses are a series of 3 courses where a cohort of students (20 to begin with) would be taking all 3 courses (this is due to the initial budget allocated for the specialized software tools mentioned above that are needed to do the analysis of the devices).

-- The focus of the GIS program degree, (from the link above) is targeted on synthesizing new information from GIS gathered data, the phrase used was:

Despite the seemingly complex name, in its most basic form, Modarres says, this is a degree in "the application of advanced technologies in decision making."

-- Mobile Digital Forensics is focused on constructing a timeline and story from data that may be hidden, obscured, partially destroyed, or separated physically on the device due to wear leveling technology of the flash memory. A major emphasis here is that nothing new is synthesized.

Compelling arguments can only come from completely unbiased handling of the images. And these processes must be endlessly repeatable by other interested parties.

-- GPS sourced data is only one of many sources of digital evidence left on a mobile device, and just like physical trace evidence, often the most obvious sources make the strongest impressions with a jury (i.e., a cell phone photo taken at/near the crime scene, or one showing a weapon claimed to not be in the possession of a suspect at a given date. etc.)

-- Although the GIS certificate program and Masters program sound incredibly interesting to me personally, from the experience of developing and working through the Mobile Forensics curriculum with Det. Bair (Tacoma PD) I just do not see enough academic common thread here and feel that a collaboration would end up forcing both topics to end up being watered down due to time constraints being spent bringing students (from the respective "other" discipline) up to speed.

I hope this helps to clarify the scope and focus of the ITS Mobile Digital Forensics series,
--chuck

On Mon, Sep 29, 2014 at 11:40 AM, Zaide Chavez <zaidcc@uw.edu> wrote:
Please see Lauren's question and please let her know why these two programs are different.

Thanks,

Zaide

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

From: Lauren M. [<mailto:lmont@u.washington.edu>]

Sent: Monday, September 29, 2014 10:14 AM

To: Zaide Chavez

Cc: Lauren Montgomery; CHARLES E. COSTARELLA; MARY A. SMITH; Bryan S. Goda

Subject: RE: APCC meeting on Program Change

Thanks Zaida.

If you would please clarify what is meant by "these two programs don't have anything to do with each other." If there is no content overlap then a statement to that effect would suffice, if the two simply haven't communicated then we ask that they do. The Geospatial Technology program was proposed and approved last year by Matt Kelly and Ali Modarres.

Best,

Lauren

Lauren M. Montgomery, Ph.D.

Lecturer - Interdisciplinary Arts and Sciences Division of Social, Behavioral and Human Sciences

On Fri, 26 Sep 2014, Zaide Chavez wrote:

> I talked with Charles and the committee chair. From what they mentioned, these two programs don't have anything to do with each other.

>

> I am including them in this e-mail, so that they can give their input.

>

> Thank you,

>

> Zaide

>

> -----Original Message-----

> From: Lauren M. [mailto:lmont@u.washington.edu]
> Sent: Tuesday, September 23, 2014 5:01 PM
> To: CHARLES E. COSTARELLA; Zaide Chavez
> Cc: MARY A. SMITH
> Subject: APCC meeting on Program Change
>
> Dear Charles and Zaide,
>
> The APCC committee had a question about your program change proposal - Mobile Digital Forensic Series. They noticed you hadn't filled in any information about contacting other departments that might be impacted by your proposal. Urban Studies has a new masters program in Geospatial Technologies that might be interested in what you are doing and we hope you are willing to contact them to communicate your changes. Our Oct. 15th meeting should provide time to keep your change on track.
>
> Feel free to contact me for clarification.
>
> Best,
>
> Lauren Montgomery, [206-790-0464](tel:206-790-0464)
> Incoming APCC chair
>

> Lauren M. Montgomery, Ph.D.
> Lecturer - Interdisciplinary Arts and Sciences Division of Social,
> Behavioral and Human Sciences
>
>
>

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Charles Costarella, MSCSS
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Tacoma: Option in Mobile Digital Forensics within the Bachelor of Science degree in Information Technology (TINST-20140507)

uwcr
Board member

Posted Jan 1, 2015 12:41 PM

Please review the attached 1503 pdf requesting to establish an option in Mobile Digital Forensics within the Bachelor of Science degree in Information Technology at the Tacoma campus and post comments by 5:00 pm on Friday, January 23rd.

If you have any problems viewing the attachment or need disability accommodations, please contact the University Curriculum Office at uwcr@uw.edu.

ALL members

TINST-20140507.pdf 45 KB
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