Henry Ford Community College
Technology Investment Fund
Project Funding Request

This application form with original signatures must be received by the Vice President/Controller's office by 4:00 p.m. on either **the first Friday after Labor Day** (Fall semester) **or the third Friday in January** (Winter semester) in order to be eligible for funding. Applications will only be accepted on this form. Applications must include an Executive Summary which will be shared with the Campus Community. ***(Attach additional sheets for any section needed.)***

Date of Application: 1/19/12	**Project Type: [X] New [ ] Upgrade/Expansion**	
Project Director: Judy Kelly / Jay Keeler **Department/Division: Science**	**How many students will *directly* benefit from the project? 120+**	**Total TIF Funds Requested: $ 41,013**

Problem Statement	
Define the problem/idea. *(What do you want to do? Why?)*	We are requesting funds to purchase hardware and software necessary to teach Geographic Information Science (GIS) at HFCC. This acquisition will support current class instruction in Environmental Science (5 sections / year), as well as a sequence of proposed courses which, ideally, will lead to a certificate in GIS. Identified by the US Department of Labor as one of the top three growth sectors in the workplace (along with biotechnology and nanotechnology), GIS is a multi-disciplinary tool used to collect, manage, analyze and present information that is spatial (and often temporal) in nature. Applications range from business and marketing analysis, demographic studies, emergency management, urban planning, crimes analysis, homeland security, and natural resource management.

Evidence for Project Validity *(What is the current situation?)*	
What resources do you have/use now?	Current lab computers furnished by Data & Voice in the Science Building.
Why can't you use your existing resources to do this project?	We need a significant upgrade to software licensing to have full functionality of tools used in classroom instruction. We also lack necessary supporting peripherals. However, the campus computers themselves need only minor upgrade for proper GIS instruction.
What evidence do you have that this project will be successful? *(Cite specific information.)* • **Current research** • **Examples from other schools or teachers** • **Letters of support from experts in the field** • **Your own past experience.**	We currently teach five sections/year of Environmental Science in which GIS is a key component of classroom instruction. As stated above, the Geospatial Industry has been identified by the US-DLG as one of the three top growth sectors in employment. Many other institutions have taken heed and developed curricula to train their students, not only for academic research but for immediate employment. At UM-Dearborn, where Mr. Keeler has taught an array of GIS courses, enrollments have steadily increased and prompted the University to allocate over $100K to a new GIS facility (opening Feb 2012). Personally, we've seen students with just one semester of training land local jobs. GIS was also featured at the recent Association for Career and Technical Education (ACTE) conference, where hundreds of careers that require GIS skills were showcased.

Relevance to Technology Investment Committee Guidelines *(Address only those that apply.)*	
INNOVATION: **Is the proposal innovative to the field of Instructional Technology?**	
Is the proposal innovative to HFCC?	HFCC currently lacks the resources necessary to develop and offer dedicated GIS courses in this high-growth market.
Is the proposal innovative to the specific discipline?	While GIS has been taught as a component of Environmental Science courses, with adequate resources current work can be expanded and additional courses can be offered, ideally as part of a certificate program. Five preliminary course masters have been developed for a potential HFCC-GIS certificate sequence: Introductory GIS; Advanced GIS; Remote Sensing; Geodatabase Design; Customization & Programming.
NEED: **Is the proposal essential for the instructional design?**	The purchase of required hardware and software are an absolute requirement to support current and new curricula.
Does it create new programs or courses with the potential for increased student enrollment?	Absolutely ! With proper marketing, we expect a robust GIS course sequence, as well as the ability to incorporate Geospatial Technology into disciplines as diverse as the range of applications that have been identified for its use.
Is it necessary to remain competitive with post-secondary institutions?	These tools are necessary to support our current efforts, as well as to capitalize on the marketability of the program by developing an expanded course offering. All post-secondary institutions in the area have some dedicated GIS curricula, if not a formal certificate sequence.
Does it provide skills that are transferable to the workplace?	Because uses for Geospatial Technology are so widespread and diverse, the market is growing at an annual rate of over 35%, with the commercial subsection of the market expanding at the rate of over 100 percent each year (Geospatial Information & Technology Association). Again, many areas of employment that require spatial literacy where featured at the recent ACTE conference.
Does it prepare students for transfer to upper-level curriculum?	A fully-dimensioned GIS course offering would prepare students for matriculation and additional work or research. Several institutions already offer 2+2 programs (e.g. Lake Superior State University).

Relevance to Technology Investment Committee Guidelines (continued) *(Address only those that apply.)*	
Does it keep the course or program current in the related technology?	Proposed hardware and software would allow us to stay current with commercial software and employment demands, and is necessary to teach GIS in current / proposed course offerings.
NATURE OF PROPOSAL: **Is the proposal a component of curricular revision?**	Acquisition is necessary to continue to teach GIS as well as develop new curricula.
Is it the next logical step in the evolution of the course/curriculum?	Without these resources, further development of GIS course content will not be possible.
Will it help attract students to HFCC?	Given that GIS skills are in high-demand job skill, we fully expect to attract a high number of new students who, without such opportunity at HFCC, will likely enroll at a competing institution.
Will it support HFCC community outreach/public relations activities?	Our GIS facility could be used for such activities. In fact, HFCC has used GIS extensively in the past to generate demographic reports for state legislators and to assist in marketing, recruitment and retention.
Will it support student retention activities at HFCC?	Possibly, depending upon the institutional data available for analysis.
Will it become an integral part of the course, program or curriculum?	GIS is already an integral part of the Environmental Science courses, but with this acquisition content could be expanded to the level necessary to adequately train our students. Further, these capabilities allow us to make new courses the foundation of a highly-marketable certificate sequence.

Resources		
Where will the project hardware be installed?	Computer lab in the basement of the Science Building.	
Who will do the job? • **List the personnel** • **List their duties**	Data & Voice would likely be responsible for installing hardware and provisioning hardware.	
Who will use the hardware?	Instructors who incorporate GIS work into their course content.	
Who will conduct any necessary project-hardware training?	Faculty responsible for GIS instruction.	
Who will handle any spring and summer semester duties related to hardware installation?	If necessary, likely Data & Voice	
Do you have commitment from your administration for personnel support? *(Be specific, include documentation.)*	No personnel should be necessary beyond those incorporating GIS into their instruction.	
Is release time required to complete this project? **If yes, has it been approved at this time by your Associate Dean?**	**[ ] Yes [X] No** **[ ] Yes [ ] No**	*TIF does not fund release time. If you are requesting release time, it must be approved by the appropriate administrators prior to proposal submission.*

Evaluation *(How will you know if it worked?)*	
How will you demonstrate to the college that this was an effective use of funds? *(How will you evaluate the goals listed as Expected Outcomes?)*	Follow-up report, with enrollment / usage data and student survey could be used to assess the effectiveness and marketability of our programming.
How will you determine the success or shortcomings of the project?	Same parameters as above.
Budget **(You must also include an itemized budget statement.)**	
What do you need to complete this project? *(Be specific about equipment, software, and training.)*	We require an ESRI ArcGIS Desktop software site license, an ERDAS software lab license, workstation monitor upgrades, a wide-format printer, and a tabloid-size color laser printer.
What is the TOTAL COST? *(You must attach an itemized cost analysis with this proposal.)*	$41,013
How recent is your quote?	1/12/12
Are changes to the college infrastructure necessary to support this project?	**[ ] Yes [X] No** *If "yes" provide an explanation from the Directors of Data & Voice and Buildings & Grounds, and from the Administrator in charge of the affected room(s).*

What other monetary commitments exist? *(Department/Division/ External) Please be specific; include documentation wherever possible.*	None
If other sources of funding are not available, why? • **Doesn't have the support?** • **Not viewed as feasible?** • **Not a priority?** • **Other?**	No prior funding has been allocated to GIS curriculum development.

Strategic Plan

Include with your application a document that indicates the ways in which your project addresses the goals and objectives of the Henry Ford Community College Strategic Plan. Also, indicate how your project addresses your Division or Department plan. Be as specific as possible.

If your proposal is Non-Instructional (Library Services, Learning Lab, Counseling, Placement Services), please skip this section and complete the information in the Non-Instructional section.

Instructional Proposals

Complete this section if this is an Instructional Proposal, directly impacting student teaching and learning.

Expected Outcomes *(Project Objectives)*	
What is your current teaching method? How will this project fit into your current plan?	Currently we teach GIS as a portion of our Environmental Science courses. However, our lab license is extremely limited and lacks the tools and extensions necessary to adequately teach aspects of GIS necessary for employment or matriculation. By purchasing a site license for the full ArcGIS software, ERDAS photogrammetry software, and peripherals necessary for lab instruction, we can properly support current efforts as well as develop additional content. Content and exercises built around this new capability will be incorporated into curricula and allow for the launch of new courses that can lead to a certificate program in GIS.
How will this improve student learning? *(List specific goals.)*	*As a result of this project students will:* With commercial GIS software and hardware to run it, we will be able to adequately train our students through lecture and lab exercises. The combination of theory with hands-on experience will help our students develop the skillset necessary to find employment or prepare for matriculation for more advanced course work or research.

Instructional Proposals (continued)

State how the project addresses the Seven Principles of Good Practice in Undergraduate Education. (*Address only the relevant criteria.*)	
Supports student-faculty contact	Direct student-faculty interaction during instruction in the GIS facility.
Supports cooperation among students	Peer interaction is facilitated and encouraged during lab instruction.
Supports active learning	Hardware & software use is hands-on.
Supports prompt feedback	Instructors provide assistance and immediate feedback during lab instruction.
Supports time on task	Content can be structured accordingly.
Supports high expectations	Programming will be current and relevant, and students will be expected to take an active role in their learning experience in the GIS facility.
Supports diverse talents and ways of learning -	Because of the mixture of demonstration and individual hands-on use of the facility, a number of learning styles can be accommodated.

SIGNATURES:

Judy Kelly 1/19/12
Judy Kelly 1/19/12
**Project Director Date

1/19/12
*Associate Dean/Department Head Date

1/20/12
*Vice President Date

T. Arndt 1/20/12
**Director of Building & Grounds Date

1/19/2012
**Director of Data & Voice Date

* For notification purposes only
* * For project feasibility

Henry Ford Community College

Technology Investment Fund
Project Funding Request

Executive Summary

DATE OF APPLICATION	PROJECT TYPE
1/19/2012	X ☒New ☐ Upgrade/Expansion
NAME OF PROJECT DIRECTOR OR PRESENTER	**DEPARTMENT/DIVISION**
Judy Kelly / Jay Keeler	Science
COST OF PROPOSED PROJECT	**NUMBER OF STUDENTS SERVED ANNUALLY**
$ 41,013	120+

SUMMARY

We are requesting funds to purchase hardware and software necessary to teach Geographic Information Science (GIS) at HFCC. The proposed acquisition will support current class instruction in Environmental Science (5 sections / year), as well as the development of additional course which, ideally, would lead to a certificate in GIS.

Identified by the US Department of Labor as one of the top three growth sectors in the workplace, GIS is a multi-disciplinary tool used to collect, manage, analyze and present information that is spatial (and often temporal) in nature. Geospatial technology was also featured at the recent Association for Career and Technical Education (ACTE) conference, where hundreds of careers that require GIS skills were showcased.

Applications range from business and marketing analysis, demographic studies, emergency management, urban planning, crimes analysis, homeland security, and natural resource management. Because uses for Geospatial Technology are so widespread and diverse, the market is growing at an annual rate of over 35%, with the commercial subsection of the market expanding at the rate of over 100 percent each year (Geospatial Information & Technology Association).

By purchasing the hardware and software necessary for a GIS lab, HFCC will be able to support and expand their course offerings. Instruction obtained at HFCC will allow our students to find employment in the myriad number of careers that require spatial literacy, as well as prepare them for matriculation to institutions that offer further opportunity for training and research.

GIS Hardware & Software

Conformity to Goals and Objectives of HFCC Strategic Plan

Per the HFCC College Organization Handbook (Oct. 2011), the mission of the College is "to prepare our students for a rapidly changing world and workplace, we are committed to providing knowledge, communication skills, and cultural opportunities".

Providing a facility that allows HFCC to support and expand GIS course offerings allows our students to develop skills necessary to obtain employment in a number of areas where Geospatial Technology is utilized. Such a facility also enables the development of additional (certificate sequence) courses that allow us to (re)train people who are traditionally the backbone of our work force and community.

Because of the high level of student-faculty interaction in the GIS lab, peer cooperation, and diversity of application, we also promote communication and cultural exchange while training individuals to capitalize on a high-growth industry.

GIS Hardware & Software

Itemized List of Proposed Expenditures

ESRI ArcGIS Desktop Site License	**$ 15,000**
ERDAS Imagine Lab License:	**$ 4,640**
HP Designjet z6200 42" printer	**$ 6,995**
Xerox Phaser 7760DX printer	**$ 5,399**
ASUS 24" LCD monitor (or equivalent – qty. 24)	**$ 5,760**
Inks & toners	**$ 3,219**
Total:	**$ 41,013**