New Course Form

instructions, see Course Form Instructions.												
Type of Action		New Course – Course not previously offered.										
1.	Catalog Prefix a	nd Number*: BTN 126										
2. Course Title: Bioinformatics II												
		Pilot Course Information:	:									
		Are you requesting pilot s Implementation Date?	tatus <u>only</u> at	this tim	e?	Yes	□ No	\boxtimes				
		Are you requesting pilot s Implementation date? Fa	pilot status <u>in addition to</u> regular approval process? Yes No 2 e? Fall or Spring? Fall Year? 2013									
		Has this course been prev	iously appro	ved as p	ilot stat	tus Ye	s 🗌 No	\boxtimes				
3.	BTN 125 and preparing for store, retrieve biotechnology	or requested action. BTN 126 are designed for it employment in the emergice, analyze or predict the contract workforce requires knowled and the workplace.	ng field of bi nposition or edge of bioin	oinform structur	atics. C	omputa molecu	tional tools ar les. Increasing	e used t ly, the	0			
4.	Submitting Enti	ty: Curriculum Committee Or College:	: Natural Sc	ciences								
5. Person(s) Primarily Responsible for Proposal (Complete item only if course is no package. Verify that members are still current and active prior to submission						_	riculun	n				
	<u>Nan</u>	Teaching	Area	College	College							
In 6.	volvement of Oth System Office	ners (Identify Individuals): Staff:										
7.	Others:											
8.		offered at other colleges? ey been involved in the f this course?		Yes Yes		No No	⊠ N/A					
9.	Is this course of If yes, Justific	luplicative or similar to other ation:	courses offe	red by K	CTCS?		Yes		No			

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10.	Credit / Contact Hours: 10a. Semester Credit Hours:		Hours:	Minimu	m 2		Maximu	m 2	2			
	10b. Semester Contact H			t Hours:	contac			ratio of urs to cred e contact/ ratio	30:1 dit			
11.	Grading Bas	sis:	Letter	Grades	s 🗆	Pass/Fail		Letter	r Grades	/No GPA		
12.	Repeat for ac	dditional	credit:	Y	es	No No						
If y	es, complet	te the fo	ollowing:									
	Total credit	earned ir	n course:				Tota	al comp	oletions:			
13.	Open Entry -	– Open E	xit:	Yes		No						
 Components (Check all components that require scheduling. For each cocredit hours and contact hours for each component that is checked.): Component Credit Contact Component Hours 						_	Cr		ked, enter the			
	Lectu	re					Practio	cum				
	∠ Labor	ratory	2	6	0		Co-O _I)				
	Clinic	cal					Discus	ssion				
OR												
14b.	Integrated C scheduling,							compon	nent (lect	ure or lab) needs	
	Lecture/ Lecture Lab Credit		Lec	Lecture Contact			Credit		Lab Co	ontact		
15.	Requisites:											
	Pre-requisite	Yes					es, list: Completion of B'er or permission of prog			BTN 125 with a grade of C or gram coordinator		
	Co-requisite		Yes	⊠ No		If yes, list:						
	Pre-requisite or		Yes		No	If yes, list	:					
	Co-requisite											
16.	Implementat 2012):	ion Term	(Course so	hedule	d to begi	n, ex. Fall	$\mathbf{S}_{\mathbf{j}}$	pring 2	2014			

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17. verb		opose	ed Cou	rse Description (Course description as it will appear in the catalog. Begin each statement with a								
	r	elatir	ng to b	cepts introduced in BTN 125 in the design and implementation of basic programming ioinformatics problems. Emphasizes current trends in bioinformatics programming atabases, and technology.								
	C	ourse	Prop	osal Rationale:								
18.	W	ill thi	s cour	se be a part of an approved curriculum/curricula? Yes No								
				curriculum/curricula? Biotechnology Laboratory Technician curriculum or Revision Form)								
	Course Competencies and Delivery:											
19.	Pr	-		rse Competencies/Student Outcomes (If part of an organized curriculum, how does it relate to ompetencies /outcomes? Begin statement with a capital letter and end with a period.):								
		Upon completion of this course, the student can:										
	1. 2. 3. 4.	App Ider Wri anal	ly fun itify b te sim lysis.	basic database design and implementation. Indamental concepts and language of bioinformatics-related programming. basic hardware and software components of a computer system. Imple computer programs to analyze data and to build tools for genomic and proteomic data Indicate the biological databases using relational database applications.								
20.	C	ourse	Outlin	e (Two-level outline required. Although courses may have more than two levels, the third level								
	is	not n	ecessa	ry.)								
		I.	Bioi	nformatics concepts								
				Definitions								
			B.	Terminology								
			C.	Query								
		II.	D.	Boolean logic gram languages								
		11.	A.	Data types								
				a. Definitions								
				b. Examples								
				c. Coding								
			В.	Constants and variables								
			C.	Logical operators vs. arithmetic operators								
			D.	Syntax								
			E.	Error checking								

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III. Selection statements

Sequences

Repetitions Dimensions

Arrays

A.

B.

C. D.

- E. Strings
- F. Overrides
- IV. Data mining
 - A. Embedded scripts
 - B. Warehousing basics
 - C. Search words
- V. Security
 - A. Passwords
 - B. Permissions
 - C. Legal issues
 - D. Ethics
- VI. Project Management
 - A. Working with team members
 - B. Working with clients
- 21. List of experiments/activities (Courses with components other than lecture. e.g., laboratory, clinical, practicum, etc., must include a <u>sample</u> list of experiment topics or activities. Does not have to be all -inclusive.):

Labs will consist of bioinformatics activities such as:

Determining data types

Practicing language scripts

Standard and non-standard retrieval and interpretations of biomedical information

Sequence homology searching and multiple alignment

Genomic analytical methods

22. Indicate sample suggested classroom resources for course (Should not have publishing date greater than five years.)

SUGGESTED LEARNING RESOURCES FOR THIS COURSE

Lesk, AM. (2008) Introduction to Bioinformatics (3^{rd} ed.) Oxford University Press. ISBN: 978-0199208043

Clavere & Notredame (2008) Bioinformatics for Dummies (2nd ed.) For Dummies ISBN: 978-0470089859

- 22. Provide a rationale for using textbook/references older than five years. N/A
- 23. May this course be used as an equivalent for other courses? **Yes**No X

 If yes, please list.

Signatures: Complete and submit a signature page for every proposal.

*The System Office assigns new course numbers. Contact Mary Kleber at Mary.Kleber@kctcs.edu

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