

Curriculum Alignment 2014

PARTNERSHIPS FOR STUDENT SUCCESS



STATE COLLEGE PARTNERS

Student Performance Analysis in Course Sequences









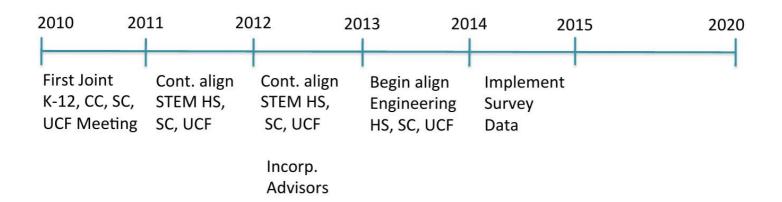






2005 200	06 20	07 200 I	08 20	09 20	10 2011
Begin align Digital Media Between CC's and UCF	Begin align Math CC and UCF	Regional Digital Media Education And Workforce Development Initiative Begin align Chemistry CC and UCF	Begin align Physics CC and UCF	Begin align Biology CC, SC, and UCF	Continue align STEM Disc CC, SC, UCF Math Begin Multidisc Align CC, SC, UCF Begin Explore Ways for PreK-12 to Work with CC, SC, UCF







Working Group Tasks

- Discuss Data
 - Potential causes, meaning, ramifications
 - Deciding factors that can be controlled and those that cannot
- Develop 4 action items for upcoming year
 - Mixture of investigation and solution



BACKGROUND



 UCF - Institutional Knowledge Management (IKM)

-Institutional Research - data support

Question: Can IR provide more detailed analyses to see how FCS students are performing in higher level coursework in specific areas?



Areas to Study:

- Where was the prerequisite course taken?
- -What was the type of student?
- -What grade did the student earn in the prerequisite course?
- -Is the student repeating the course multiple times?
- -How much time has passed between the prerequisite course and the UCF required course?



Data Sources:

UCF grades are collected from frozen Student Instruction files submitted to the state.

Transfer coursework is from transcripts loaded into live PeopleSoft tables. This study is looking only for the match of the prerequisite listed and does not include other courses that may have been substituted at the student level.

Caution:

Please consider the size of the 'N' when drawing conclusions from these data. A small 'N' across 5 years may be a weak data point.



INTRODUCTION



- Analyze course performance of students based on their pre-requisite attempt records available at UCF
- Last 5 years of data [Summer 2009 to Spring 2014] was included in analysis
- The numbers include all attempts i.e. a student can be more than once in the summary if multiple attempts were made in this course
- Many students may have completed the prerequisite for the course in multiple ways eg. have the relevant AP test score and also taken the UCF pre-requisite course



- Partial grades like A-, B+ have been combined to common letter grades like A,B,C,D,F,W, and NC
- The grade of C- is included into D/NC grades
- Grade attempts where the student earned a X, I, N, U, Y and WM grade have not been included



EXAMPLE



Course: MAC 2312

Pre-requisite: MAC 23 I I

	Acad	emic Years considered for this analysis are -	ı
		2009-10	ı
		2010-11	ı
		2011-12	ı
		2012-13	ı
		2013-14	ı
		Course being analyzed in this report -	1
	2	MAC 2312	
Pr	e-rec	uisite used for this course sequence analysis -	



Table 1 - Background

Summary o	of student background based	on	thei	r mo	st rece	pre	-rec	quis	ite a	tte	mpts	5
	1			BC - P		.2312 DF	W - U	nsuce	cessfu		To	otal
		A	В	С	Total	D/NC	F	W	Tota		#	% col.
rerequisite Course								_	$\overline{}$			
	AP credits transfered**	21	15 20	2 141	1900	100	58	30	942	m.3	700	9.9
	Prerequisite Transferred from FCS		10 12	8 209		277	195	224	546	17.0	943	13.3
400044	Prerequisite attempted at UCF	198	IB 97	1,051	2,579 4	400	452	300	1,337	181	3,916	55.3
141/311	Repeater		11 24	7 421	740-7	250	200	150	000	0.7	1.447	20.4
	Unknown/No prerequisite record four	d	10 1	3 15	44.1		-	11	26 3	12 1	70	1.0
	otal	-	1.00	1.817	4.307	926	1,000	823	E Page 1	-	7,076	100.0
			Ulara Ipa	No.			40				1967/	

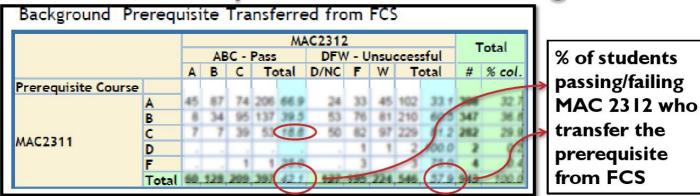


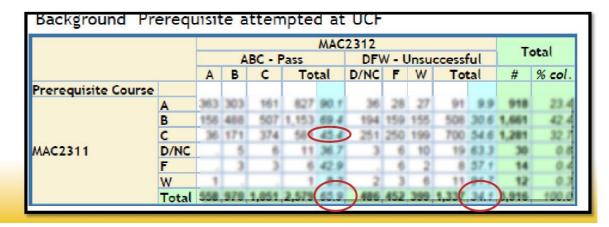
Table 2 – Background by Student Type

							MAC	2312					т	otal
				AB	C - Pa	155		DF	N - U	nsuc	cessfu	ıl	10	otal
			A	В	С	Tot	tal	D/NC	F	W	Tot	tal	#	% col
rerequisite Course														
		AP credits transfered**		- 3		746	63.6		2			38.4	22	
		Prerequisite Transferred from FCS	25	-	109	183	34.7		113	162	344	65.3	527	,
	FCS Transfers	Prerequisite attempted at UCF	102	-	83	104	35 r	47	45	540	150	44.9	334	-
		Repeater	. 11	37	63	131	66.6	41	_71	.52	164	30.4	295	
		Unknown/No prerequisite record found		,		,	50.0		,	3	,	50.0	14	
		Total	77	158	283	519	43.5	162	254	277	675	56.5	1,192	16
	AP credits transfered**	207	154	136	537	80.3	50	55	27	132	19.7	-		
	Prerequisite Transferred from FCS	26	70	54	190	21.9	53	74	40	176	4.	366		
AC2311	FTICs	Prerequisite attempted at UCF	508	880	953	2,341	E7 3	424	396	320	1,139	32.7	3,480	-
		Repeater	- 68	203	136	597	53.8	207	209	97	513	46.2	1,110	
		Unknown/No prerequisite record found	7	2		15	E2.5		2	2	١,	37.5	24	
		Total	816	1,349	1,515	3.660	65.1	739	735	405	1,969	34.9	5,649	79
		AP credits transfered**			2	7	77.8		,	,	2	22.2		
		Prerequisite Transferred from FCS					10.0			13			50	



Table 3.x - Pre-requisite Attempt Grade by Most Recent Background







Total

Table 4 – Prerequisite Institutions

Background Prerequisite Transferred from FCS MAC2312 Total DFW - Unsuccessful ABC - Pass A B C Total D/NC F W Total # % col. 4 25.0 CFC 4 7 20 24 3 DSC 17 21 17 **EFSC** LSSC . . 20 37 0 SSC 191 VC 11 18 40 69 32.F 23 56 63 142 67 3 299 56 97 113 266 61 4 433 Total Other Institution/Unknown 38 81 111 230 45 f 71 98 111 260 54 9 588

38 81 111 230 43 1

79 98 999 280 54 9 540



S Other Slides

• Table 5.x Number of attempts in prerequisite course

						MAC	2312						_	otal
			A	BC -	Pass		DF	W -	Unsu	iccess	ful		10	otal
		Α	В	С	То	tal	D/NC	F	W	То	tal		#	% col
Prerequisite Course														
	1	542	908	890	2,340	69.8	389	333	291	1,013	30.	2 3,3	53	85.6
	2	14	58	144	216	46.2	80	92	80	252	53.	8 4	168	12.0
	3	2	4	12	18	23.4	14	20	25	59	76.	6	77	2.0
MAC2311	4			4	4	30.8	3	4	2	9	69.	2	13	0.3
	5							3	- 6	4	100	0	4	0.1

• Table 6.x Semester gap between student's prerequisite attempt

						MAC	2312				-	
			Α	BC - F	ass		DFV	٧ - ١	Jnsuc	cessful		otal
		Α	В	C	То	tal	D/NC	F	W	Total	#	% co
Prerequisite Course												
	Attempted in Same Semester			- 15		25.0	-		-	3 754	4	
	Immediately in Successive Semester	452	749	740	1,949	69.7	342	283	222	647 30.	2,796	_ n
	Prerequisite Attempted After Course Attempt		- 1	-	,	28.0		-6	13	10.721	25	
MAC2311	With a gap of 2 to 3 semesters	89	186	251	526	58.3	121	130	125	376 41	962	21
	With a gap of 4 to 6 semesters	10	22	33	- 65	53.3	14	22	21	57 46	122	



Curriculum Alignment 2014

PARTNERSHIPS FOR STUDENT SUCCESS



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To begin this analysis, we must acknowledge:

- Institutional Missions
- Admissions Protocol
- Use (or not) of Placement Tests
- Environmental Differences
- Internal Curriculum Alignment (dept/inst)
- Recent Course Alignment Changes



Data

- Which course sequences did we select and how were they selected?
- What were the questions I had that the data could answer?



Which course sequences did we evaluate?

Biology/Medicine

- BSC 2010C to ZOO 3733C (Human Anatomy Seq.)
- BSC 2011C to PCB 3044 (Ecology Seq.)
- CHM 2046 to PCB 3063 (Genetics Seq. I)
- BSC 2010C to PCB 3063 (Genetics Seq. II)
- CHM 2210 to MCB 3020C (Microbiology I Seq.)

Chemistry/Medicine

- CHM 2045C to CHM 2046 (Chem II Seq.)
- CHM 2046 to CHM 2210 (Organic I Seq.)
- CHM 2210 to CHM 2211 (Organic II Seq.)
- CHM 2211 to BCH 4053 (Biochemistry I Seq.)

Mathematics

- MAC 1105 to MAC 1140 (Pre-Calc Seq.)**
- MAC 1140C to MAC 2311C (Calc | Seq.)**
- MAC 2311C to MAC 2312C (Calc II Seq.)
- MAC 2312C to MAC 2313 (Calc III Seq.)

Physics/Engineering

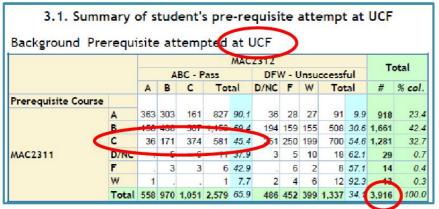
- MAC 2311C to PHY 2048C (Physics for Engr/Sci I Seq.)
- PHY 2048C to PHY 2049C (Physics for Engr/Sci II Seq.)
- PHY 2048C to EGN 3310 (Statics Seq.)

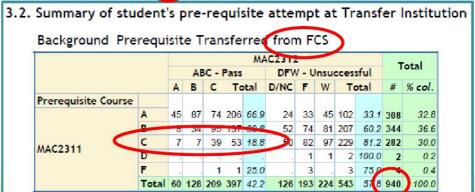
Based on their background, how successful are the students in the requisite, UCF course?

	ary of student backg			^				2312						
				AE	BC - Pa		MIAC		w - u	nsuc	cessf	ul	To	otal
			Α	В	С	Tot	tal	D/NC	F	W	To	tal	#	% col
rerequisite Cou	irse													
		AP credits transfered**	8	3	3	14	63.6	4	2	2	8	36.4	22	a
		Prerequisite Transferred from FCS	25	49	109	183	34.9	68	111	162	341	65.1	524	7
	FCS Transfers	Prerequisite attempted at UCF	32	69	83	184	55.1	47	45	58	150	44.9	334	4
		Repeater	11	37	83		44.4		71	52		55.6	295	4
		Unknown/No prerequisite record found	1	1	5	7	41.2	2	5	3	10	58.8	17	(
		Total	77	159	283	519	43.5	162	234	277	673	56.5	1,192	16
		AP credits transfered**	207	194	136	537	80.3	50	55	27	132	19.7	669	
		Prerequisite Transferred from FCS	26	70	94	190	51.9	53	74	49	176	48.1	366	
AC2311	FTICs	Prerequisite attempted at UCF	508	880	953	2.341	67.3	424	395	320	1,139	32.7	3.480	49
		Repeater	68	203	326	-	53.8		209		-		1,110	15
		Unknown/No prerequisite record found	7	2	6	15	62.5	5	2	2		37.5	24	(
		Total	C.	1.349				739		1100	1.969		270.00	79



What does the prerequisite grade (UCF and FCS) tell me about performance in the requisite, UCF course?





Tables 3.1 & 3.2



How about those who repeat the requisite course or have AP scores, how do they do?

3.3. Summary of student's previous attempt (for course repeaters) Background Repeater Total ABC - Pass DFW - Unsuccessful A B C Total D/NC F W Total . 1 100.0 2 100 0 3 27.3 C 3 8 72.7 11 08 D/NC 43 132 201 376 68.2 101 45 29 175 31.8 38.1 551 26 70 143 239 44.7 85 156 55 296 55.3 535 37.0 9 42 74 125 36.0 63 87 72 222 64.0 347 Total 81 247 421 749 51.8 250 289 159 698 48.2 1,447 100.0 Summary of student performance by the AP score they articulated DFW - Unsuccessful ABC - Pass D/NC F W Total A B C Total # % col. Prerequisite Course | AP Score 88 215 208 511 70.0 93 83 43 219 30.0 730 MAC2311 148 191 184 523 73.5 72 76 41 189 26.5 712 264 243 159 666 80.2 64 63 37 164 19.8 830 Total 500 649 551 1,700 74.8 229 222 121 572 25.2 2,272

Tables 3.3 & 3.4



What about our partner colleges?

- Of the students who completed the prerequisite course at a partner college, how did they do in the requisite UCF course?
- How do they compare to the students who completed the prerequisite course at UCF?

4. Summary of Transfer Institutions where pre-requisite attempted by students Background Prerequisite Transferred from FCS MAC2312 Total ABC - Pass DFW - Unsuccessful A B C Total D/NC F W Total # % col. Prerequisite Course 5 12 75.0 16 CFC 2 4 25.0 4 3 1 1 1.7 1 7 12 20 52.6 DSC 3 7 8 18 47.4 38 4.0 FESC 5 11 24 40 17 20 17 54 57.4 34 10.0 8 14 77.8 Partner MAC2311 LSSC 3 . 4 22. 18 1.9 8 12 20 37.6 5 10 19 34 63.0 5.7 330 VC 11 18 40 69 32.7 23 56 63 142 67.3 211 22.4 Total 22 47 98 167 38.7 55 96 113 264 61.3 431 45.9 Other Institution/Unknown 38 81 111 230 45.2 71 97 111 279 54.8 509 54.1 Other Institution/Unknown MAC2311 Total 38 81 111 230 45.2 71 97 111 279 54.8 509 54.1

940

						MAC	2312					т.	otal
			AE	3C - P	ass		DF	W - U	nsuc	cessfu	al .	10	Jean
		Α	В	С	Tot	tal	D/NC	F	W	Tot	al	#	% col.
Prerequisite Course													
	AP credits transfered**	215	202	141	558	79.7	54	58	30	142	20.3	700	9.9
	Prerequisite Transferred from FCS	60	128	209	397	12.2	126	193	224	543	57.8	940	13.
MAC2311	Prerequisite attempted at UCF	558	970	1,051	2,57	65.9	486	452	399	1,337	34.1	3,916	55.
MACZSTI	Repeater	81	247	421	749	54.8	250	289	159	698	48.2	1447	20.
	Unknown/No prerequisite record found	16	13	15	44	60.3	10	8	11	29	39.7	73	1.0
	Total	930	1,560	1.837	4.327	61.2	926	1.000	823	2.749	38.8	7,076	100.0



How many times did they attempt the prerequisite?

How did they do in requisite, UCF course?

5.1. Summary of number of attempt	pts in prerequisite course at UCF
Background Prerequisite attempted	at UCF

						MAC	2312					T	otal
			1	ABC -	Pass		DF	W - I	Unsu	iccess	ful	10	Jiai
		Α	В	C	То	tal	D/NC	F	W	То	tal	#	% col.
Prerequisite Course													
	1	542	908	890	2,340	69.8	389	332	291	1,012	30.2	3,352	85.6
	2	14	58	144	216	46.1	80	93	80	253	53.9	469	12.0
	3	2	4	12	18	23.4	14	20	25	59	76.6	77	2.0
MAC2311	4			4	4	30.8	3	4	2	9	69.2	13	0.3
	5							3	1	4	100.0	4	0.1
	6	_		1	1	100.0		-				1	0.0
	Total	558	970	1,051	2,579	65.9	486	452	399	1,337	34.1	3,916	100.0

Table 5.1 & 5.2



Of those who retook the requisite, UCF course, how many times did they try and how successful were they?

.3. Sun	nma	ary	of	nu	mb	er d	of re	pea	ted	at	tem	ots i	n the
В	ack	gr	oun	d(I	Rep	eate	er						
						MΑ	C231	2				T	otal
			AE	3C - I	Pass		DFV	V - U	Insu	cces	sful		Jiai
		Α	В	С	То	tal	D/NC	F	W	T	otal	#	% col.
1		75	208	339	622	53.4	201	223	119	543	46.6	1,165	80.5
2		6	32	61	99	45.6	44	45	29	118	54.4	217	15.0
3		_	6	20	26	49.1	4	14	9	27	50.9	53	3.7
4			1	1	2	25.0	1	3	2	6	75.0	8	0.6
5								2		2	100.0	2	0.1
6			-					1		1	100.0	1	0.1
7								1		1	100.0	1	0.1
T	otal	81	247	421	749	51.8	250	289	159	698	48.2	1,447	100.0



What was the gap between attempts?

 How does this compare to performance in the requisite, UCF course?

	of semester gap between student's	pre	-re	quis	ite a	tte	mpt	at l	JCF	and	the	e cou	ırse
background Fre	requisite attempted at ocr					MAC	2312					T,	otal
			Α	BC - F	ass		DF\	W - L	Jnsu	ccessi	ul	10	Mai
		Α	В	С	Tot	tal	D/NC	F	W	Tot	al	#	% col.
Prerequisite Course													
	Attempted in Same Semester		32	1	1	25.0	1	1	1	3	75.0	4	0.1
	Immediately in Successive Semester	452	749	748	1,949	69.7	342	282	222	846	30.3	2,795	71.4
	Prerequisite Attempted After Course Attempt		1	6	7	26.9	1	5	13	19	73.1	26	0.7
MAC2311	With a gap of 2 to 3 semesters	89	186	251	526	58.3	121	130	125	376	41.7	902	23.0
	With a gap of 4 to 6 semesters	10	22	33	65	53.3	14	22	21	57	46.7	122	3.1
	With a gap of more than 6 semesters	7	12	12	31	46.3	7	12	17	36	53.7	67	1.7
	Total	558	970	1,051	2,579	65.9	486	452	399	1,337	34.1	3,916	100.0

Tables 6.1, 6.2, & 6.3



Course Sequences (again)

Biology/Medicine (Rm 136)

- BSC 2010C to ZOO 3733C (Human Anatomy Seq.)
- BSC 2011C to PCB 3044 (Ecology Seq.)
- CHM 2046 to PCB 3063 (Genetics Seq. I)
- BSC 2010C to PCB 3063 (Genetics Seq. II)
- CHM 2210 to MCB 3020C (Microbiology I Seq.)

Chemistry/Medicine (Rm 138)

- CHM 2045C to CHM 2046 (Chem II Seq.)
- CHM 2046 to CHM 2210 (Organic I Seq.)
- CHM 2210 to CHM 2211 (Organic II Seq.)
- CHM 2211 to BCH 4053 (Biochemistry I Seq.)

Mathematics (Rm 140)

- MAC 1105 to MAC 1140 (Pre-Calc Seq.)**
- MAC 1140C to MAC 2311C (Calc | Seq.)**
- MAC 2311C to MAC 2312C (Calc II Seq.)
- MAC 2312C to MAC 2313 (Calc III Seq.)

Physics/Engineering (Main Room)

- MAC 2311C to PHY 2048C (Physics for Engr/Sci I Seq.)
- PHY 2048C to PHY 2049C (Physics for Engr/Sci II Seq.)
- PHY 2048C to EGN 3310 (Statics Seq.)

Discuss Data

- Potential causes, meaning, ramifications
- Deciding factors that can be controlled and those that cannot
- Develop 4 action items for upcoming year
 - Mixture of investigation and solution

Biology Working Group

Report Out 10/31/14

- Further investigation into inherent differences between student populations at UCF vs. other FCS schools is warranted
 - Admission requirements
 - Traditional vs. non-traditional students
 - High school GPA
 - Need a "case" student to compare colleges
 - In spite, difference in approximately 10%
- Diagnostic exams helpful
 - Data on success rates for those "refusing" remedial courses might help to encourage them

- Parse data so as to categorize students as those attending schools currently engaged in Curriculum Alignment efforts
- Look at all colleges in FCS
- What are other schools in other areas doing?
 - Research on other local, regional, and/or national Curriculum Alignment efforts
- Is UCF our "control?"

- Socialization in order to diminish "transfer troubles."
- Have students shadow other students
 - Acclimation to larger university classes and university "culture.
 - e.g. classes, social events, other students

- Encourage students to complete sequence courses with as little gap as possible
 - Extend this to faculty, counselors
 - Perhaps other prerequisites and/or suggested courses should be suggested for certain courses
 - e.g. BSC 2010C --> genetics?
- Take into account the scheduling of the student
 - Seek advice regarding course selection and sequencing

Point 5

- Extend invitation to high school educators to attend future Curriculum Alignment meetings
 - Include educators, administrators, school board, program specialists, DOE

Chemistry

Trend

	Overall (%)	UCF	FCS	Partners
CHM 2045 to CHM 2046	57.3	64.8	35	30.3
CHM 2210 to CHM 2211	60.1	63.1	34.9	28.8

	Overall (%)	UCF	FCS	Partners
CHM 2046 to CHM 2210	60.6	67.4	47.8	43.7
CHM 2210 to BCH 4053	67	74.7	50.5	52.5

Things to consider

Uncontrolled

- Open access program
- Small classroom to large classroom
- Lack of prep class (not required)
- Non traditional students
- Academic freedom

Control

- Students should not transfer in the middle of sequence (advising)
- High % of adjuncts teaching (fulltime faculty involvement) → Quality matters
- Get the adjunct involved (attending CA meetings)
- Disseminate Curriculum alignments results to departments
 → standardized presentations, check list for adjunct & new faculty
- Development of Chemistry curriculum learning outcomes (in progress)

Math Working Group

What percentage of transfers take more math classes at UCF and what is the firs math course they take?	t

Surveying schools Identifying policy's used at different institutions
Start with1105, 2311 for Spring meeting
Calculator usage, instructional method, Proctored testing, Course perquisite enforcement
Credit hours of course, Class size

Investigate creating review modules for students who have a gap in their preparation for a course

Try to get the IR groups for each	ch institution to create Table the 1033-2313 sequence	e 3.1 for their institution for

Physics and Engineering

Calculus I - Physics I (MAC 2311-PHY 2048)

- ▶ Success rate*
 - ▶ UCF 86.8%
 - ► FCS 74.4%
- ▶ Points of Emphasis
 - Alignment with physics and math departments within and across institutions
 - ▶ This ensures math principles used in physics are taught in prereq
 - ▶ ex: integration

*Success rate for students who completed the prerequisite attempted at UCF or the prerequisite transferred from FCS (Table 1) TD

Physics I - Physics II (PHY2048 - PHY2049)

- Success rate*
 - ▶ UCF 87%
 - ► FCS institutions 79.6%
- ▶ Points of emphasis
 - ▶ Communication concerning alignment has been effective
 - ► Continue communicating through alignment meetings
 - ▶ Departmental communication
- ► Collect / Analyze data for:
 - Physics II (2049) into principles of Electrical Engineering and Electrical Networks
 - ► College physics I and II into further health related courses

*Success rate for students who completed the prerequisite attempted at UCF or the prerequisite transferred from FCS (Table 1) TD

Physics I - Statics (PHY 2048 - EGN 3310 (2312))

- Success rate*
 - ▶ UCF 62.6%
 - ► FCS 56.7%
- Key Factors
 - ▶ Difficulty of the material
 - ▶ Lack of 3-D mathematical background
- Points of Emphasis
 - ▶ C students have less than 50% success rate
 - Increase success rate by investigating math alignment and its impact on 2048
 - Communication between engineering, math, and physics departments

*Success rate for students who completed the prerequisite attempted at UCF or the prerequisite transferred from FCS (Table 1) TD

Next time....

- Discuss grade distribution and find consistency within and across institutions
 - ▶ Exams, final exam, HW, labs, etc...
- ▶ Reconnect with other institutions

DIRECTCONNECT TO UCF PARTNERSHIP

Curriculum Alignment Conference 2014



A College Access & Success Initiative



The annual Curriculum Alignment Conference was held on October 31, 2014, at the Valencia Public Safety Institute.

The conference followed academic discipline meetings held during the fall semester in



ch course sequences did we evaluate



Our Partners













Biology, Chemistry, Engineering, Math and Physics.

The program for the CA conference

addressed course success research at UCF after transferring.

Jeff Jones, Vice Provost, UCF Regional Campuses, welcomed the faculty. Mike Hampton, Chair and CA Lead,

provided a brief history of the substantial work that has been accomplished since 2005-06 and provided the overview of the conference.

Pat Ramsey and Meghal Parikh, UCF IKM,

introduced the course success research and portfolio.



STEM course analysis studies:











MATH

PHYSICS/ENGINEERING







