Using LMS-Embedded Analytics to Evaluate an Online Competency-Based Program

Amanda Barefield, EdD Georgianna Laws, MEd





What challenges do you face when it comes to:

- accreditation requirements
- resources available
- adequately preparing the next generation of professionals?

#### Abbreviations

**CAHIIM**: Commission on the Accreditation of Health Information and Information Management.

CAHIIM publishes curriculum competency standards with which all HIIM programs must comply.

HIA: Health Information Administration. HIA is the name of a program of study at Augusta University.

HIIM: Health Informatics and Information Management. HIIM is the profession in general.

LMS: Learning Management System. As an example, the University System of Georgia uses Brightspace by D2L as its LMS.

**SLO**: Student Learning Outcomes. "Objectives" and "Outcomes" or "SLOs" are sometimes used interchangeably. In the context of accreditation, (program-level) SLOs refer to what students will be able to do as a result of the learning experience in their program.



In response to how the rapid growth in technology has drastically reshaped the HIIM profession, CAHIIM recently published a new curriculum that <u>doubles</u> the SLOs graduates need to demonstrate (from 49 to 102) and introduces a variety of new content.

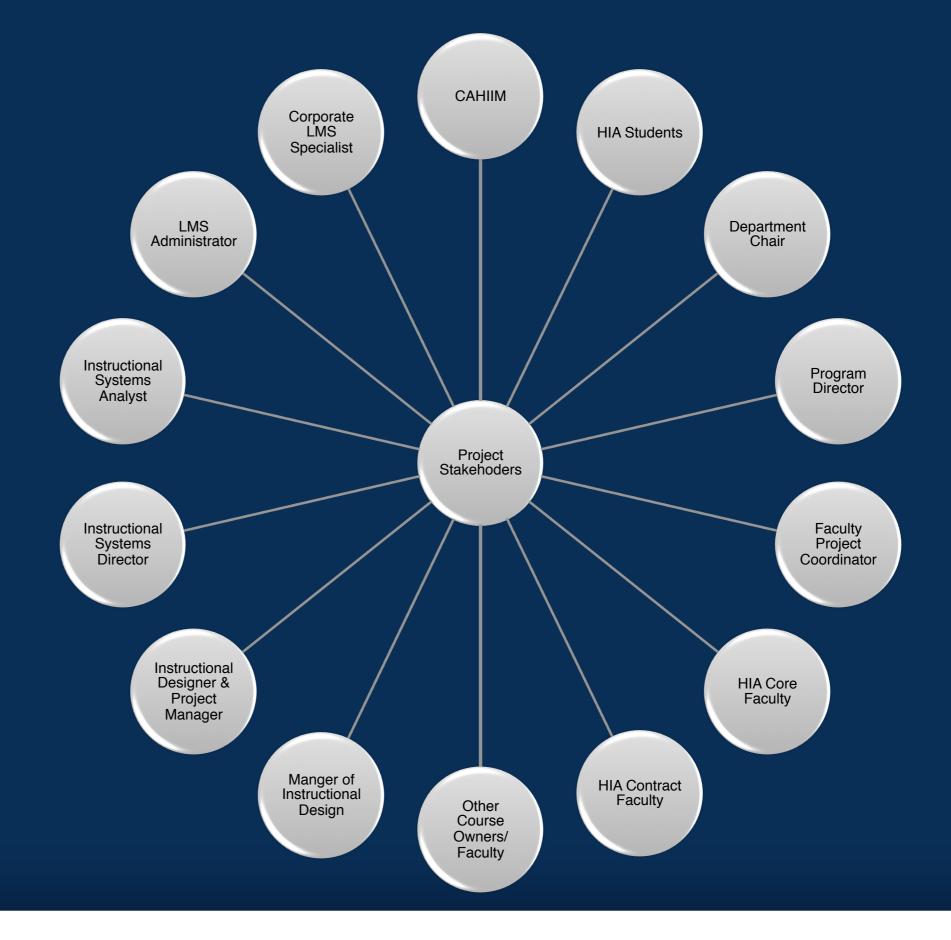
With this additional knowledge and more closely defined competencies, HIIM graduates can more successfully integrate into the current and future workforce.

A leader in the HIIM education industry, with graduate first-time pass rates well above the national level, Augusta University endeavors to maintain a high-quality HIA program that prepares its graduates to excel as they enter the workforce.



As the HIA program at Augusta University prepares to implement the new CAHIIM curriculum by August 2017, it has to use its lean resources to:

- 1. streamline course offerings to meet CAHIIM standards in the most effective way
- 2. empower faculty to do their work in a way that generates rich, actionable data
- 3. analyze with ease the vast amount of course- and programspecific data generated for program evaluation and accreditation purposes.



#### Timeline

Year 2 Student Cohort Taught with Existing Curriculum (49 SLOs)

Year 1 Student Cohort Taught with New Curriculum (102 SLOs) - Pilot, Semester 1

#### **Fall 2016**

2 Parallel Curricula

Year 2 Student Cohort Taught with Existing Curriculum (49 SLOs)

Year 1 Student Cohort Taught with New Curriculum (102 SLOs) - Pilot, Semester 2

#### **Spring 2017**

2 Parallel Curricula

Year 1 Student Cohort Taught with New Curriculum (102 SLOs) - Go Live

Year 2 Student Cohort Taught with New Curriculum (102 SLOs)

#### **Fall 2017**

1 Curriculum

**CAHIIM Implementation Deadline** 

## Bloom's Taxonomy

#### **BLOOM'S TAXONOMY – REVISED FOR AHIMA CURRICULA MAPPING**

Taxonomy Level	Category	Definition	Verbs
1	Remember	Recall facts, terms, basic concepts of previously learned material	Choose, Define, Find
2	Understand	Determine meaning and demonstrate clarity of facts and ideas	Collect, Depict, Describe, Explain, Illustrate, Recognize, Summarize
3	Apply	Use differing methods, techniques and information to acquire knowledge and/or solve problems	Adhere to, Apply, Demonstrate, Discover, Educate, Identify, Implement, Model, Organize, Plan, Promote, Protect, Report, Utilize, Validate
4	Analyze	Contribute to the examination of information in part or aggregate to identify motives and causes	Analyze, Benchmark, Collaborate, Examine, Facilitate, Format, Map, Perform, Take part in, Verify
5	Evaluate	Make judgments in support of established criteria and/or standards	Advocate, Appraise, Assess, Compare, Comply, Contrast, Determine, Differentiate, Engage, Ensure, Evaluate, Interpret, Leverage, Manage, Mitigate, Oversee, Recommend
6	Create	Generate new knowledge through innovation and assimilation of data and information	Build, Compile, Conduct, Construct, Create, Design, Develop, Forecast, Formulate, Govern, Integrate, Lead, Master, Propose

The layout for the levels and categories was adapted from Lorin W. Anderson and David R. Krathwohl's A Taxonomy For Learning, Teaching, and Assessing, Abridged edition, Allyn and Bacon, Boston, MA 2001

# Gap Analysis

Entry Level Competency	Bloom's	Curricular Considerations	2011	HIM Program				
Student Learning Outcomes	Level		Мар					
Domain I. Data Content Structure and Standards				Course #   Comment				
DEFINITION: Academic content related to diagnostic and	DEFINITION: Academic content related to diagnostic and procedural classification and terminologies; health record documentation requirements; characteristics							
of the healthcare system; data accuracy and integrity; da	ta integration	n and interoperability; respond to custo	mer data n	needs; data manag	ement policies and			
procedures; information standards.								
Subdomain I.A. Classification Systems								
Evaluate, implement and manage electronic applications/systems for clinical classification and coding	5	Encoders, Computer Assisted     Coding, Systems Development     Life Cycle	I.C.1 I.C.2	HINF 3415 HINF 3517 HINF 4416 HINF 4518	Briefly discussed Encoders, CAC: you must know how to code manually in order to use these effectively. 4518: Required Feasibility study done (SDLC)			
Identify the functions and relationships between healthcare classification systems	3	<ul> <li>Healthcare classification systems, taxonomies, and clinical vocabularies</li> <li>ICD, CPT, SNOMED-CT, DSM</li> </ul>	New	HINF 3206 HINF 3415 HINF 4416				

## Curriculum Mapping

#### AUGUSTA UNIVERSITY

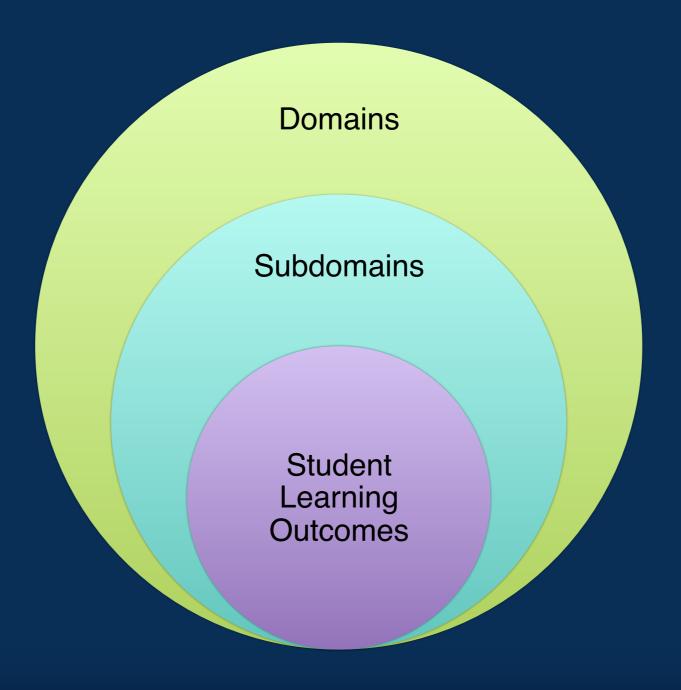
Curriculum Map for the Bachelor of Science in Health Information Administration Degree Program

Jr. Year Fall: 15 total credit hours

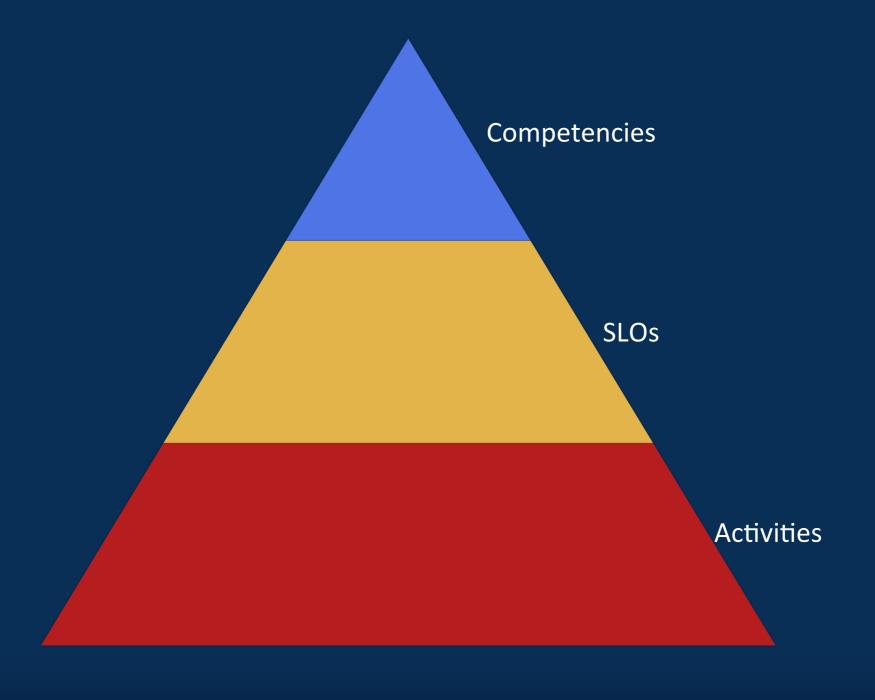
			Course Prefix	HINF	HINF	HINF	MINF
			Course Number	3101	3209	3315	3650
			Course Title	Principles of Healthcare Management	Principles of HIIM	Clinical Foundations in HIIM	Management Information Systems
			Credit Hour	3	4	5	3
			Semester	Fall 1	Fall 1	Fall 1	Fall 1
			Faculty	Contracted	Mandy Barefield	Lori Prince	Todd Schultz
			Department	CDHS	CDHS	CDHS	Hull CoB
Domain <b>↓</b>	Subdomain <b>V</b>	SLOs <b>Ψ</b>	Pre-Program Prerequisites ♥				
	Subdomain I.A. Classification Syste	ms					
	1	Evaluate, implement and manage electronic applications/systems for clinical classification and coding	1, 2, 3, 4			5	
	2	Identify the functions and relationships between healthcare classification systems	1, 2		3	3	
	3	Map terminologies, vocabularies and classification systems	1, 2, 3		4	4	
	4	Evaluate the accuracy of diagnostic and procedural coding	1, 2, 3, 4			5	
	Subdomain I.B. Health Record Cont				1		
Domain I. Data Content Structure and Standards	5	Verify that documentation in the health record supports the diagnosis and reflects the patient's progress, clinical findings, and discharge status	1, 2, 3		4	4	
	6	Compile organization-wide health record documentation guidelines	1, 2, 3, 4, 5		6		
	7	Interpret health information standards	1, 2, 3, 4		5		
	Subdomain I.C. Data Governance						



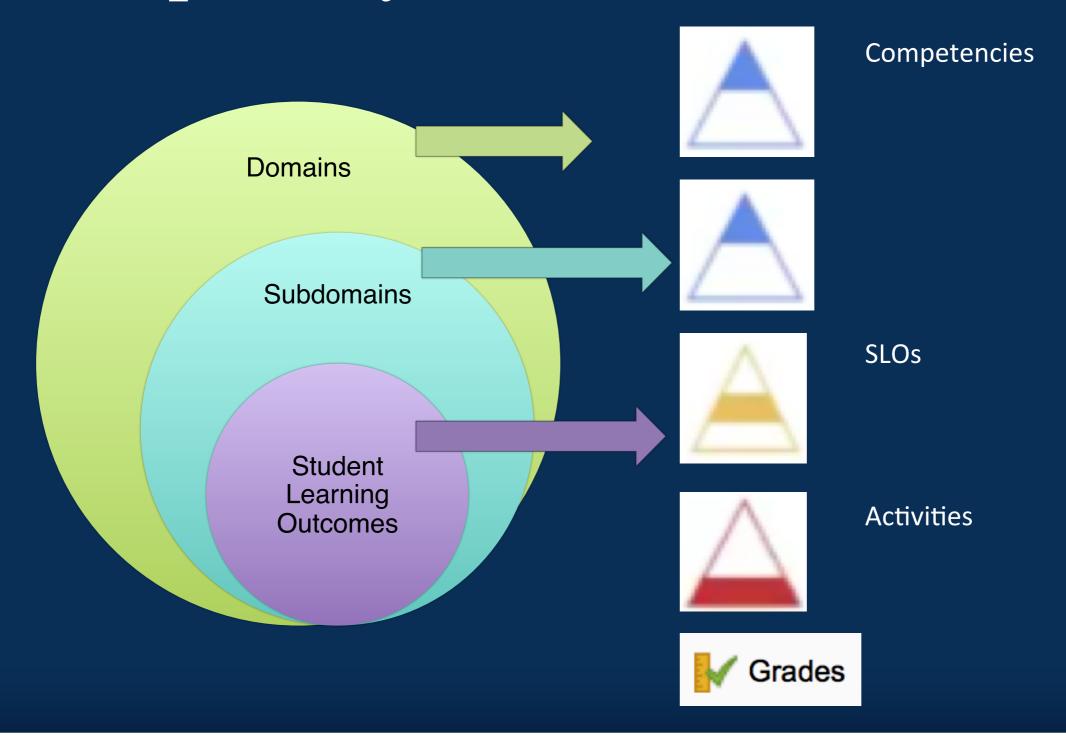
# CAHIIM Competency Structure



# D2L Competency Structure



# Competency Structure Reconciliation





https://www.youtube.com/watch?v=aXyExdMFY3c

Competency Home	Edit Competency Compete	ncy Structure	☆:	Settings		
Competency S	tructure - Bachelor	of Science in Health Information	n Administration			
Structure Summary	Edit Structure					
A Bachelor of Science	in Health Information Administra	ion				
About the Program						
GRU grants a bachelor of science degree in health information administration. The program is a "2+2," meaning the student completes the first two years at any accredited college of choice, including GRU, and the last two years as an HIA student. Students begin the HIA program fall semester of their junior year. Students who complete the program are eligible to take the national registration exam to become a Registered Health Information Administrator.						
GRU also offers a post-baccalaureate certificate program in health information administration to licensed nurses or allied health professionals or to those with a bachelor's degree in busines or healthcare administration or computer science. For more information, contact the Office of Academic Admissions.						
Both programs are offer	ed completely online. The bachel	or of science degree program is also offered in an on-cam	npus setting.			
Details at: http://catalog	.gru.edu/preview_program.php?c	atoid=17&poid=1189				
Children						
[Expand All] [Collapse A	ul]					
Domain I. Data	Content Structure and Standards		The state of the s	r		
□ <u>A</u> Subdomair	I.A. Classification Systems		T <sub>A</sub>	ľ		
<u>A</u> I.A.1. E	valuate, implement and manage	electronic applic	T <sub>A</sub>	ľ		
<u>A</u> I.A.2. I	dentify the functions and relations	nips between	I.A.	ľ		
<u>A</u> I.A.3. №	Map terminologies, vocabularies a	nd classificati	I.A.	r		
<u>A</u> I.A.4. E	valuate the accuracy of diagnosti	c and procedur	ĽĄ.	r		
□ A Subdomair	I.B. Health Record Content and	Documentation	<u> </u>	M		
△ I.B.1. \	erify that documentation in the he	alth record s	<u> </u>	r		
△ I.B.2. (	Compile organization-wide health	record document	I.A.	r		
△ I.B.3. I	nterpret health information standa	rds	<u> </u>	<b>Y</b>		
Subdomair	I.C. Data Governance		<u> </u>	M		
<u>A</u> I.C.1. I	Format data to satisfy integration r	eeds	IA.	r		
	Construct and maintain the standa	rdization of da	The state of the s	r		
A I.C.3. [	Demonstrate compliance with inte	rnal and externa	<u> </u>	r		

#### SLOs in D2L

Competency Home

Edit Learning Objective Learning Objective Structure

Learning Objective Structure - I.A.1. Evaluate, implement and manage electronic applications/systems for clinical classification and coding

**Structure Summary** 

**Edit Structure** 



I.A.1. Evaluate, implement and manage electronic applications/systems for clinical classification and coding

- Bloom taxonomy: level 5 (evaluate)
  - o **Definition:** Make judgments in support of established criteria and/or standards
  - o Verbs: Advocate, Appraise, Assess, Compare, Comply, Contrast, Determine, Differentiate, Engage, Ensure, Evaluate, Interpret, Leverage, Manage, Mitigate, Oversee, Recommend
- Curricular considerations: Encoders, Computer Assisted Coding, Systems Development Life Cycle
- 2011 Map: I.C.1, I.C.2
- Courses:
  - HINF 3315, Clinical Foundations in HIIM (5 cr hrs, fall 1, CDHS, Lori Prince)
  - HINF 3214, Healthcare Vocabularies & Data Sets (4 cr hrs, spring 1, CDHS, Lori Prince)
  - HINF 4417, Healthcare Revenue Management (4 cr hrs, fall 2, CDHS, Lori Prince)
- Comment: Briefly discussed Encoders, CAC: you must know how to code manually in order to use these effectively. 4518: Required Feasibility study done (SDLC)

Children

No items found.

Select one of the following to create:

Quiz Activity 🕝

Associate a quiz activity with the learning objective.

Survey Activity 🚱

Associate a survey activity with the learning objective.

2 Dropbox Activity ②

Associate a dropbox activity with the learning objective.

3 Discussions Activity Associate a discussions activity with the learning objective.

Manual Assessment Activity (2)

Create a manual assessment activity that will be assessed with a rubric.

Content Activity (2)

Associate content activity with the learning objective.

## Faculty Role

In order to accurately track SLOs at the program level, every course faculty must use the LMS to deliver activities/grades and attach each activity/grade to the appropriate competency structure in the LMS.



https://youtu.be/hZfBF5\_0OWE

## Training

The training covers all aspects of the tasks needed:

before the semester begins:
 building and linking activities, rubrics, grades
 linking to the existing SLOs

2. *during* the semester:

grading

identifying which SLOs are met/not met.

## Support Levels



# D2L Forward Prep Courses

#### Make Competency Available To

#### Add Org Units

The Course Offering: HINF 3101 Forward Prep (HMI Competency Project)	×
The Course Offering: HINF 3209 Forward Prep (HMI Competency Project)	×
The Course Offering: HINF 3315 Forward Prep (HMI Competency Project)	×
The Course Offering: MINF 3650 Forward Prep (HMI Competency Project)	×
The Course Offering: HINF 3102 Forward Prep (HMI Competency Project)	×
The Course Offering: AIST 3610 Forward Prep (HMI Competency Project)	×
The Course Offering: HINF 3213 Forward Prep (HMI Competency Project)	×
The Course Offering: HINF 3214 Forward Prep (HMI Competency Project)	×
The Course Offering: HINF 4209 Forward Prep (HMI Competency Project)	×
The Course Offering: HINF 4417 Forward Prep (HMI Competency Project)	×
The Course Offering: HINF 4520 Forward Prep (HMI Competency Project)	×
The Course Offering: STAT 4020 Forward Prep (HMI Competency Project)	×
The Course Offering: HINF 4104 Forward Prep (HMI Competency Project)	×
The Course Offering: HINF 4723 Forward Prep (HMI Competency Project)	×
The Course Offering: HINF 4106 Forward Prep (HMI Competency Project)	×
The Course Offering: HINF 4521 Forward Prep (HMI Competency Project)	×

## "HIA Accreditation Project" Module

The "HIA Accreditation Project" module (available to faculty teaching HIA courses but invisible to the students) will be added to each HIA course in D2L.

#### This module contains:

- a list of the SLOs that need to be met in the course according to the program's new curriculum
- any materials developed with the instructional designer
- a link to material hosted on the project website (coming soon), including:
  - custom-made assignment and rubric templates
  - custom-made video tutorials covering the essential skills faculty will need to perform (i.e., create assignments, create rubrics, create a gradebook, link all three with one another and with the corresponding SLO)
  - the contact information of the instructional designer, instructional systems analyst, and 24/7 help desk.

## Before the Fall 2016 Semester (Pilot 1)

Before the first pilot begins, courses need to be prepared, as follows:

- For those who opt for support levels 1 and/or 3 (have course components built and post-produced in the course), the faculty and designer will choose a timeline for their collaboration, ensuring that the respective work is completed before the start of the Fall 2016 semester.
- The faculty members who opt for support levels 2 and/or 4 (using templates and training videos) are responsible for building their own course components, consulting the templates and videos available, as needed.
- The designer will copy *all* the prep course shells into the live semester shells before students gain access to their Fall 2016 courses.
- The designer will also assist with support level 5 (helping as needed).

## During the Fall 2016 Semester (Pilot 1)

During the first pilot, assignments will need to be completed/graded and an SLO-mastery support process initiated whenever students are unable to meet the SLOs.

The instructional designer will continue to troubleshoot on request (support level 5) and will maintain contact with all faculty to offer just-in time support or training.

## After the Fall 2016 Semester (Pilot 1)

At the end of each semester, the program director generates end-ofsemester reports and to determine if SLOs are met/not met.

If SLOs are identified as not met, the program director will consult with the respective faculty member(s) to determine the need to modify the instructional materials and/or clarify the activity instructions to ensure success on those specific SLOs.

## Before the Spring 2017 Semester (Pilot 2)

This stage of the pilot will include review of the results from the Fall 2016 pilot phase and courses will be modified based on the formative feedback obtained.

The project team will then repeat the same stages of the project for the Spring semester.

#### Go Live

This phase will begin with the review of all feedback generated during the pilot stages of the project.

Modifications to course or processes will based on the results of the D2Lanalytics reports and feedback from HIA faculty.

Once these modifications are complete, the program will implement the new curriculum in all HIA courses in Fall 2017.

	Do	Don't	
Ask for help	✓		
Start early	✓		
Think hard about competency structures	✓		
Ensure activity and grading consistency	✓		
Get faculty buy in			
Train faculty			
Sweat the small setbacks			
Give up			



#### Amanda C. Barefield, EdD, RHIA, LNHA

**Associate Professor** 

Health Information Administration and Public Health

Department of Clinical and Digital Health Sciences

College of Allied Health Sciences

**Augusta University** 

EB-1026

Augusta, GA 30912

Phone 706-721-4646

Fax 706-721-6067

#### Georgianna Laws, M.Ed.

Instructional Designer geolawsdesign.com glaws@augusta.edu



Instructional Design & Development Unit

Augusta University (formerly Georgia Regents University)

EC 1207 • (706) 721-4984 • 987 Saint Sebastian Way, Augusta, GA, 30912

GC 5110 • (706) 721-4984 • 1430 John Wesley Gilbert Drive, Augusta, GA, 30912