We asked, you answered, and now, we present—Rose Squared

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## I am not an attorney...



## The Focus of this Session

 To discuss the development of the Rose Squared program and the role of Assessment



# Rose Squared (R<sup>2</sup>)

- Is a degree pairing program, where students take graduate-level coursework while pursuing their undergraduate engineering degree, allowing them to earn two degrees in just four years.
- BS in Engineering, Math or Science and a course-based Master of
  - Engineering Management
  - Civil Engineering
  - Electrical Engineering
  - Mechanical Engineering



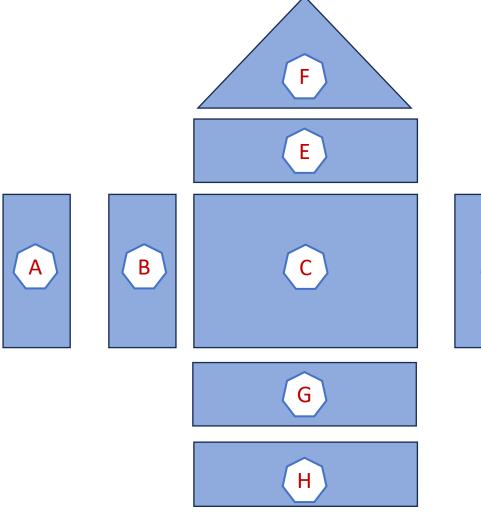
# Always Improving

• Our Institutional Research, Planning, and Assessment (IRPA) supports faculty and staff in the education of our students by developing and implementing strategies for timely collection, analysis, reporting, and use of quality data and information.

• In 2016, we were among just four institutions of higher learning recognized by the Excellence in Assessment (EIA) program for sustained excellence in student learning outcomes assessment.



# Underlying Design Principle: QFD

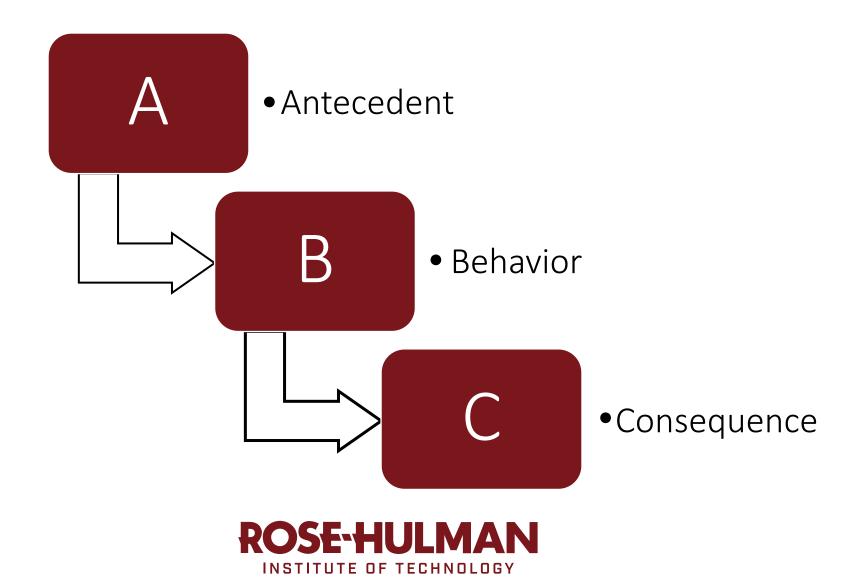


- A. Customer Requirements
- B. Priority Rating
- C. Correlation: Customer and Technical Requirements
- D. Competitor Assessment
- E. Technical Requirements
- F. Technical Correlations
- G. Technical Attributes
- H. Technical Evaluation



D

# The Role of Assessment in this Project



## Antecedents

Parents

Students

Employers







## R<sup>2</sup> Academic Characteristics

Top 5% nationally by standardized math and science test scores

Completed eight (8) AP/IB exams

• Completed on average six (6) dual credit or college





## Behaviors

Workload

• Performance

Support





Year 1:		Fall			Winter			Spring		
20XX-20XX	Course	Title	Cr hrs	Course	Title	Cr hrs	Course	Title	Cr hrs	
	MA 113	Calculus III	5	HUM H190	First-Year Writing Seminar	4	MA 222	Matrix Algebra & Differential Eqns I	4	
	PH 112	Physics II	4	MA 221	Matrix Algebra & Differential Eqns I	4	EM 103	Introduction to Design	2	
	EM 121	Statics & Mechanics of Materials I	4	ES 201	Conservation & Accounting Principle	4	ES 212	Fluid Systems	4	
	ME 123	Computer Programming	4	ES 213	Electrical Systems	4	ES 214	Mechanical Systems	4	
	RHIT 100	Foundations for Rose-Hulman Succe	1					HSSA Elective	4	
		Total cr hrs this qtr:	18		Total cr hrs this qtr:	16		Total cr hrs this qtr:	18	
		·			·			·		
Year 2:	Fall			Winter			Spring			
20XX-20XX	Course	Title	Cr hrs	Course	Title	Cr hrs	Course	Title	Cr hrs	
	MA 223	Engineering Statistics I	4	BIO 101	Essential Biology	4		Technical Elective/MEM Tech Focus*	4	
	EM 104	Graphical Communications	2	ME 301	Applications of Thermodynamics	4	ENGL H290	Tech and Prof Communication	4	
	EM 204	Statics & Mechanics of Materials II	4	ME 321	Measurement Systems	4	ME 302	Heat Transfer	4	
	ES 205	Analysis & Design of Engineering Sy	4		HSSA Elective	4	ME 327	Numerical Methods of Engrg Analysi	4	
		HSSA Elective	4							
		Total cr hrs this qtr:	18		Total cr hrs this qtr:	16		Total cr hrs this qtr:	16	
		F-II			When			0-1		
Year 3:	Fall				Winter			Spring		
20XX-20XX	Course	Title (MENT )	Cr hrs	Course	Title	Cr hrs	Course	Title	Cr hrs	
	145.000	Technical Elective/MEM Tech Focus®	4	145.047	Technical Elective/MEM Tech Focus	4	ME 480	Machine Component Design	4	
	ME 328	Materials Engineering	4	ME 317	Design for Manufacturing	4	FMOTEVY	Math/Science Elective	4	
		Vibration Analysis or Control System	4	ME 430	Mechatronic Systems	4	EMGT5XX	MEM Technical Focus	4	
	ME 421	ME Lab	2	EMGT5XX	MEM Technical Focus	4	EMGT5XX	MEM Technical Focus	4	
		Technical Elective	4							
		Total cr hrs this qtr:	18		Total cr hrs this qtr:	16		Total cr hrs this qtr:	16	
Year 4:	Fall				Winter			Spring		
20XX-20XX	Course	Title	Cr hrs	Course	Title	Cr hrs	Course	Title	Cr hrs	
	ME 470	Capstone Design I	4	ME 471	Capstone Design II	4	ME 472	Capstone Design III	4	
		HSSA Elective	4		HSSA Elective	4		HSSA Elective	4	
	EMGT 511	MEM Graduate Seminar I	1	EMGT 512	MEM Graduate Seminar II	1	EMGT 513	MEM Graduate Seminar III	1	
	EMGT5XX	MEM Technical Focus	4	EMGT5XX	MEM Technical Focus	4	EMGT5XX	MEM Technical Focus	4	
	EMGT5XX	MEM Management Focus	4	EMGT5XX	MEM Management Focus	4	EMGT5XX	MEM Management Focus	4	
		Tatal as her at the same	17		Takal as her abler abou	17		Tatal or her still out	47	
	Total cr hrs this qtr: 17				Total cr hrs this qtr:	17		Total cr hrs this qtr:	17	



## Consequences

Course Evaluation

Degree Completion

Employability







#### **Current Statistics**

- Program Abandonment
  - Workload
  - Career change
  - Other



- Degree Completion
  - Four Years
  - Four Years 1 Quarter
  - Four Years 2 Quarter





## Professional Outcomes

100% placement\*

Three primary employment options (position types)

Renumeration delta \$7 – 15K



# Thank You

**ROSE-HULMAN** 

