MSU Departmental Assessment Plan

Department: Mechanical & Industrial Engineering

Department Head: Chris H. Jenkins

Assessment Coordinator: Ruhul Amin (ME), Kevin Cook (MET), Joe Stanislao (IE)

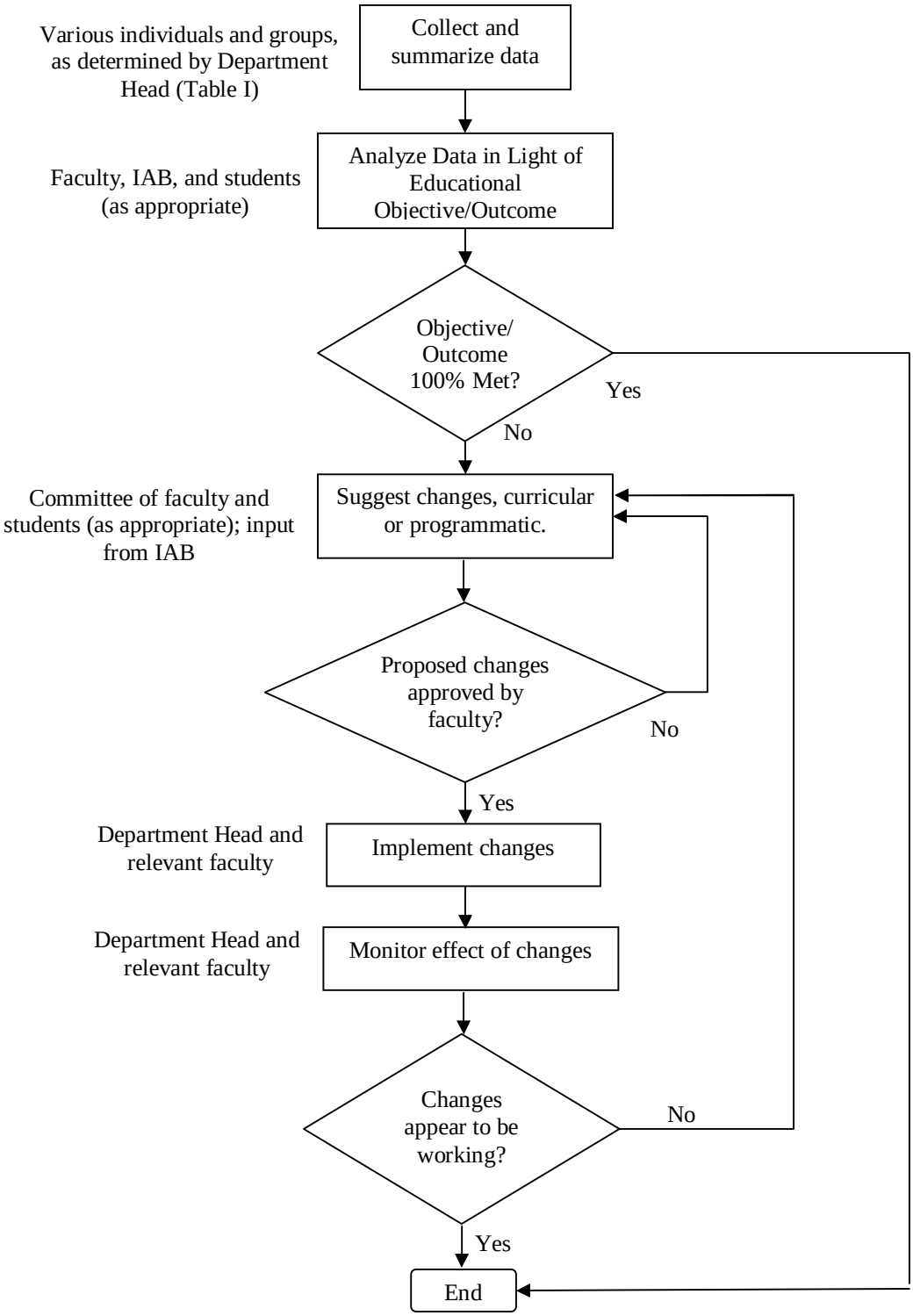
Date: August 5, 2007

Degrees/Majors/Options Offered by Department

B.S. Industrial Engineering
B.S. Mechanical Engineering
B.S. Mechanical Engineering Technology

Plan for Utilizing Data

All programs in the department utilize the following flowchart for assessment. In the chart below, IAB refers to the departmental Industrial Advisory Board (IAB).


Various individuals and groups, as determined by Department Head (Table I)
Collect and summarize data
Faculty, IAB, and students (as appropriate)
Analyze Data in Light of Educational Objective/Outcome
Objective/ Outcome 100% Met?
Yes
No
Committee of faculty and students (as appropriate); input from IAB
Suggest changes, curricular or programmatic.
Proposed changes approved by faculty?
No
Yes
Department Head and relevant faculty
Implement changes
Department Head and relevant faculty
Monitor effect of changes
Changes appear to be working?
No
Yes
End

Industrial Engineering

Assessment Item	Frequency of Collection	Mechanism for Review	Documentation	Coordinator
Dept. IAB Program Review	Fall	1	IAB Notebook	Joe
College EAC Sr. Project Review	Spring	1,2	COE EAC IE Senior Project Assessment	Durward
Alumni Survey	Spring odd years	1,2	IE Alumni Survey Notebook	Gary
Employer Survey	Every 3rd Fall, starting F02	1,2	IE Employer Survey Notebook	Ed
Student Exit Interviews	Fall and Spring	1	IE Senior Interviews Notebook	Mike/X
FE Exam	Fall and Spring	1,2	FE Exam Results Notebook	Mike
Placement	Summer	1,2	IE Placement Notebook	Gary
Capstone Project Review	Spring	1,2	I&ME 444 Senior Project Survey Notebook	Mike/X
Course Reviews	Every semester	Faculty mtgs.	Faculty supplied documentation + minutes of discussion	Durward
Faculty Discussions	As needed	Faculty mtgs.	IE Faculty Meeting Minutes	Mike
Internships/Co-ops	As needed	Faculty mtgs.	Internship Notebook	Ed
Review Mission Statement, Objectives, Outcomes	Summer	1,2	IE Educational Objectives	Joe
Facilities Review	Fall	2	IAB Notebook	Joe
Curriculum Reviews	As needed	1,2	Catalog changes	Joe
Multidisciplinary Awareness	As needed	1	Multidisciplinary Notebook	Durward
Diversity	As needed	1	Diversity Notebook	Ed
Research Opportunities	As needed	Faculty mtgs.	Research Opportunity Notebook	Gary

1 – annual faculty retreat
2 – IAB annual meeting

Mechanical Engineering (ME) Program

Mechanical Engineering Objectives (expected from graduates 3-5 years out)

ME graduates will:

I. Undertake professional careers;
II. Assume leadership roles by advancing in the engineering profession;
III. Employ effective communication;
IV. Work in multidisciplinary professional teams;
V. Engage in life-long learning, including post-graduate education for some graduates;
VI. Contribute to industry and society, in Montana or elsewhere, including involvement in professional and other service activities
VII. Solve technical problems in design, analysis, manufacturing, project management, or testing.

Mechanical Engineering Outcomes (expected from students upon graduation)

ME graduates will demonstrate upon graduation:

1. An understanding of math, basic sciences, and engineering sciences necessary to solve mechanical engineering problems.
2. An ability to integrate learned concepts (such as theoretical, applied, experimental, computer, and manufacturing) to solve mechanical engineering problems
3. An understanding of the engineering design process necessary to solve open-ended problems.
4. An ability to work in teams to solve mechanical engineering problems.
5. An understanding of the importance of multidisciplinary activity in solving mechanical engineering problems.
6. Written, oral, and technical skills to effectively communicate.
7. An awareness of the social, ethical, political, economic, safety and environmental impacts of their work.

Assessment Plan Timetable

Assessment Tool	Frequency	Past Occurrences	Next Occurrence	Notes
Dept. IAB Input	Annual			Chris
College EAC Input	Annual			Chris
Alumni Surveys	Every other year			Ruhul to coordinate
Employer Surveys	Every 3rd year			Ruhul to coordinate

Student Interviews	Annual			Ruhul/Chris
FE Exam	Annually, spring and fall			Ruhul
a-k Surveys	each semester			Discontinued
Faculty Duscussions	As needed			
Placement	Annually, summers			Carol
Capstone Project Sponsor Review	Annually, Spring			Vic
Review Educational Objectives	Annually, Fall			Faculty meeting
Review Outcomes	Annually, Fall			Faculty meeting
Facilities Review	Annually, Fall			At IAB
Curriculum Review	As needed, but annually at a minimum			
Formal Course Review	1/3 of courses reviewed each year			Faculty meeting

Mechanical Engineering Technology (MET)

Assessment Tool: M&IE Department Industrial Advisory Board (IAB)

Dates	Data Collection Method	Implementation Responsibility
	Scheduled Meetings and Meeting Summary Notes	MET Faculty

Assessment Tool: College of Engineering (COE) Industrial Advisory Board (IAB)

Dates	Data Collection Method	Implementation Responsibility
	Scheduled Meetings and Meeting Summary Notes	MET Faculty

Assessment Tool: Alumni Surveys

Dates	Data Collection Method	Implementation Responsibility
	Internet-based Survey Tool (Survey Monkey)	MET Faculty

Assessment Tool: Employer Surveys

Dates	Data Collection Method	Implementation Responsibility
	Internet-based Survey Tool (Survey Monkey)	MET Faculty

Assessment Tool: Student Interviews

Dates	Data Collection Method	Implementation Responsibility
	Discussions with students	MET Faculty

Assessment Tool: FE Exam

Dates	Data Collection Method	Implementation Responsibility
	National Results Summary	MET Faculty

Assessment Tool: Faculty Discussions

Dates	Data Collection Method	Implementation Responsibility
	Meeting minutes Action Item Assignments	MET Faculty

Assessment Tool: Placement

Dates	Data Collection Method	Implementation Responsibility
	Student Employment Info. Annual Career Fair	MET Faculty

Assessment Tool: Capstone Review

Dates	Data Collection Method	Implementation Responsibility
	Presentation Evaluation Survey Project Review Surveys	MET Faculty

Assessment Tool: ABET Reviews

Dates	**Data Collection Method**	**Implementation Responsibility**
As required	Official Notice from ABET	MET Faculty

Additional Programmatic Items Requiring Assessment and Review

Item	Reviewed by	Review Date	Action
Educational Objectives	Faculty Students IAB		Objectives approved as written. No changes recommended.
Educational Outcomes	Faculty Students IAB		Outcomes approved as written. No changes recommended.
MET Facilities Review	Faculty IAB		Meets expectations. Will continue to review and monitor
Curriculum Review	Faculty		Changes recommended and incorporated into 2006-2008 catalog. Revisions for 2008-2010 catalog are currently being developed and implemented
MET CI Plan Review	Faculty		Minor updates recommended and incorporated.
MET Faculty Development Plans	Faculty Department Head		Meets expectations. Faculty will continue to review and update as required.