NEW HORIZON COLLEGE OF ENGINEERING

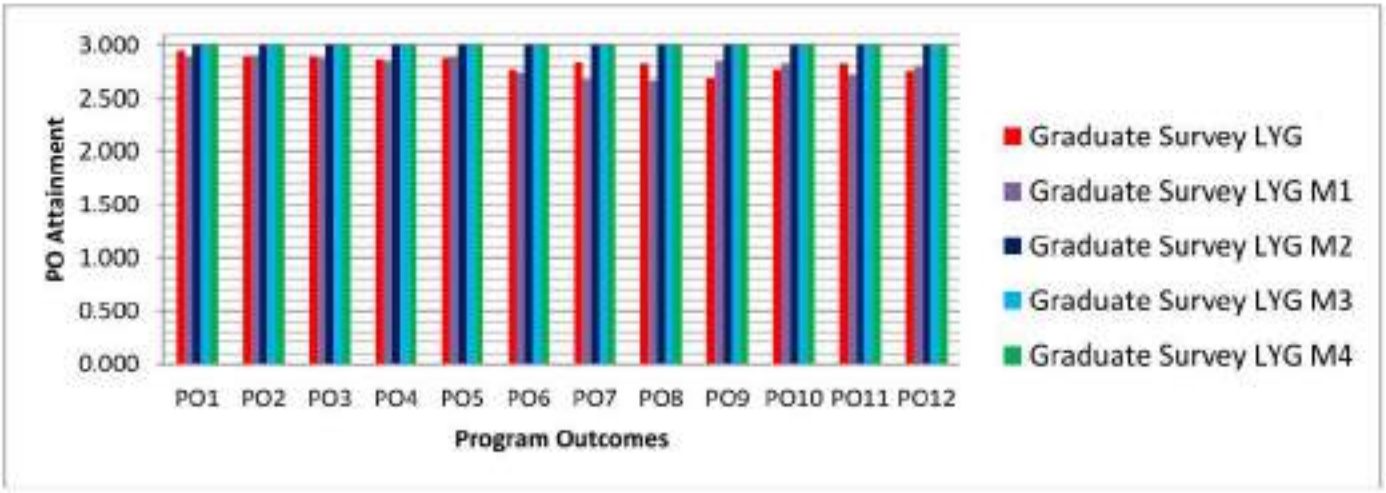
DEPARTMENT OF AUTOMOBILE ENGINEERING

Stakeholders Feedback Analysis

Student Graduate Survey

Response of Graduate students in program attainment versus program outcomes:

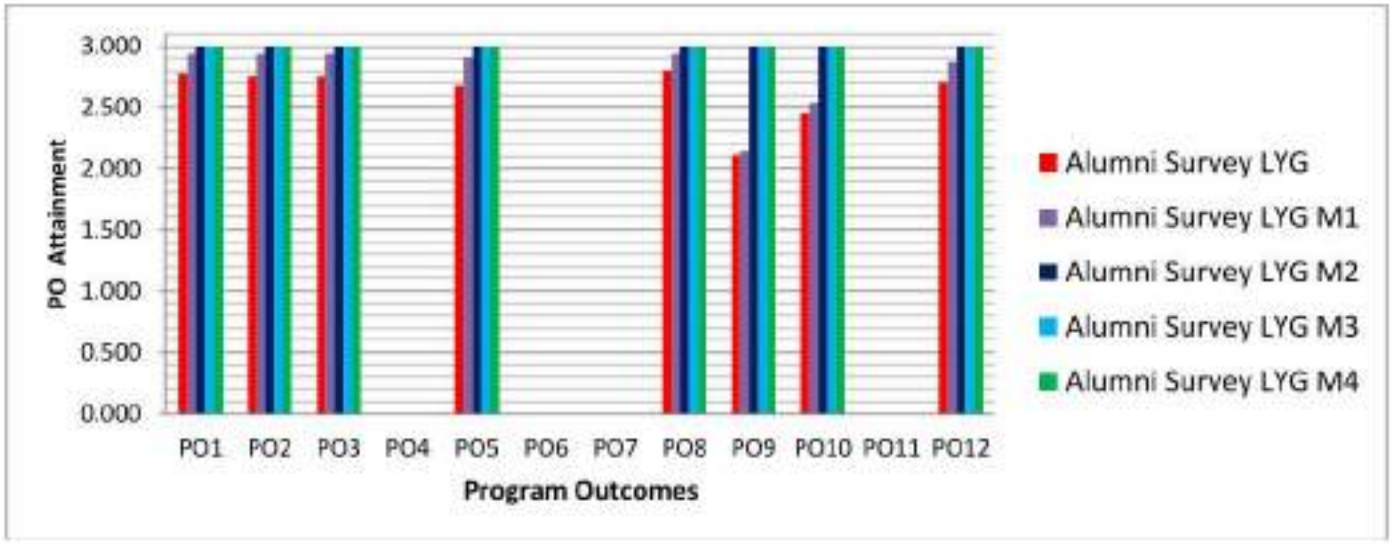
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Student Graduate Survey	LYG	2.947	2.895	2.895	2.868	2.882	2.776	2.842	2.829	2.684	2.776	2.829	2.763
	LYG M1	2.893	2.905	2.881	2.857	2.893	2.75	2.679	2.667	2.857	2.833	2.726	2.810
	LYG M2	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
	LYG M3	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
	LYG M4	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000



Alumni Survey

Response of Alumni students in program attainment versus program outcomes:

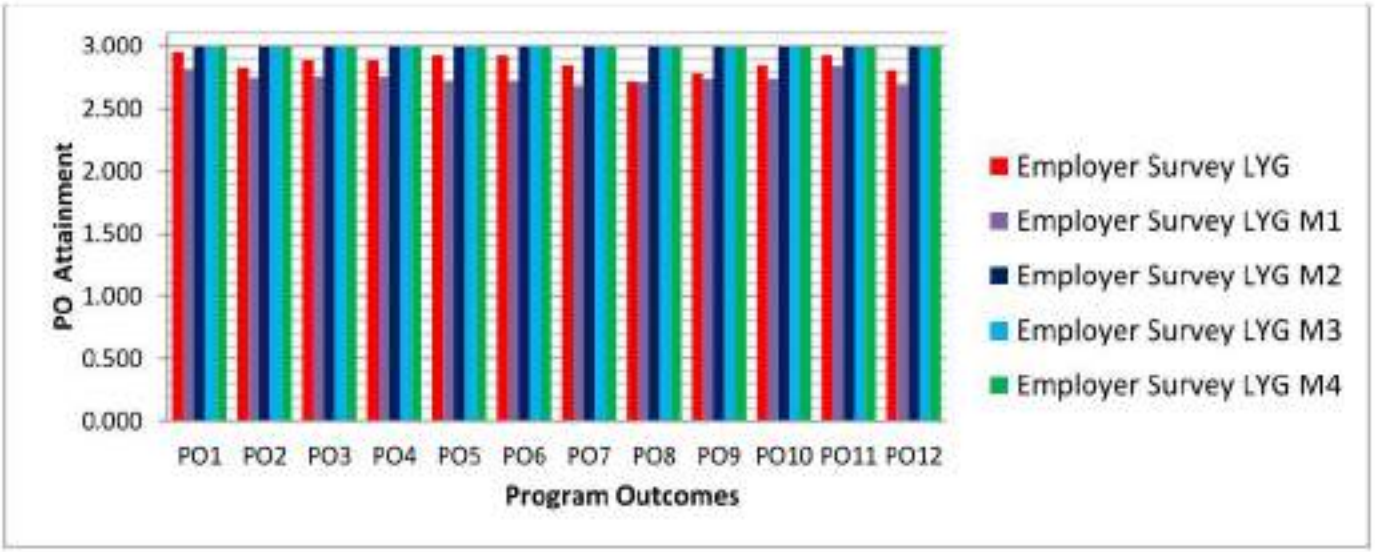
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Alumni Survey	LYG	2.779	2.757	2.757	-	2.675	-	-	2.800	2.110	2.448	-	2.700
	LYG M1	2.936	2.936	2.936	-	2.907	-	-	2.936	2.141	2.538	-	2.872
	LYG M2	3.000	3.000	3.000	-	3.000	-	-	3.000	3.000	3.000	-	3.000
	LYG M3	3.000	3.000	3.000	-	3.000	-	-	3.000	3.000	3.000	-	3.000
	LYG M4	3.000	3.000	3.000	-	3.000	-	-	3.000	3.000	3.000	-	3.000



Employer Survey

Response of Employer's in program attainment versus program outcomes:

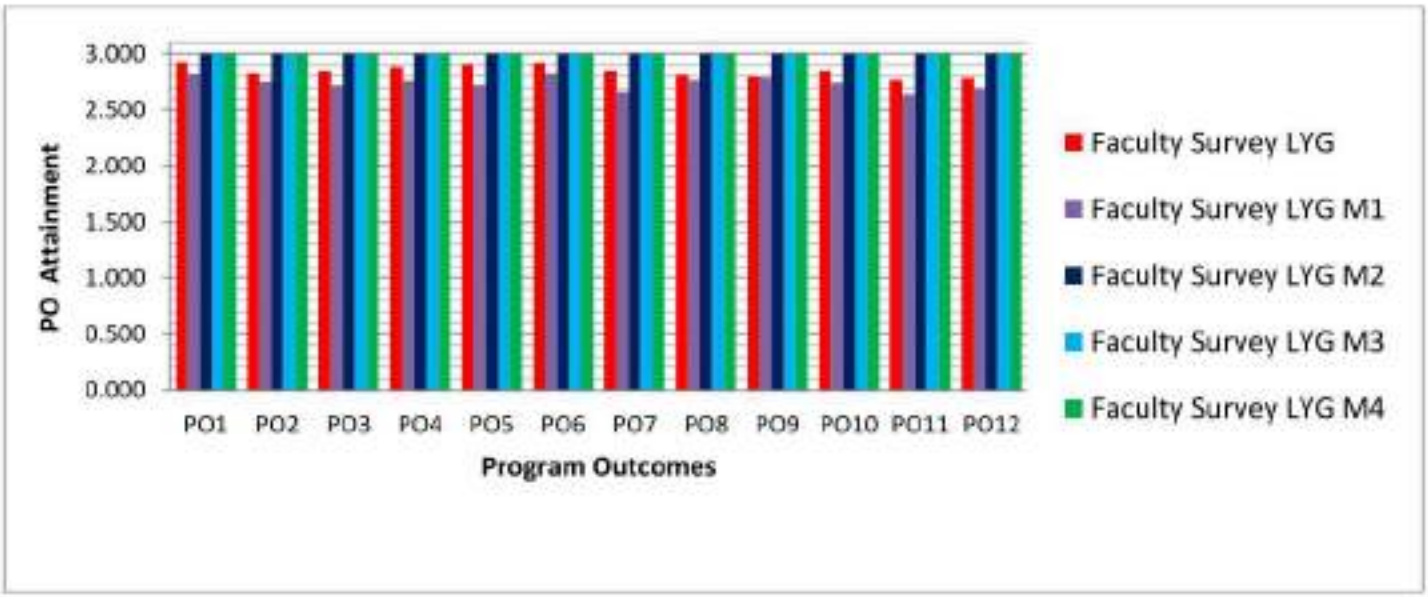
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Employer Survey	LYG	2.949	2.827	2.885	2.885	2.923	2.923	2.846	2.721	2.782	2.846	2.923	2.808
	LYG M1	2.818	2.750	2.758	2.758	2.727	2.727	2.682	2.716	2.742	2.742	2.841	2.693
	LYG M2	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
	LYG M3	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
	LYG M4	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000



Faculty Survey

Response of Faculty's in program attainment versus program outcomes:

Faculty Survey													
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Faculty Survey	LYG	2.928	2.822	2.842	2.885	2.912	2.923	2.844	2.810	2.794	2.846	2.764	2.782
	LYG M1	2.820	2.750	2.720	2.758	2.722	2.822	2.666	2.766	2.788	2.742	2.642	2.688
	LYG M2	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
	LYG M3	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
	LYG M4	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000



Action taken Report on Stakeholder's Feedback

Institution collects stake holder's feedback for UG programs. Feedbacks from students, Alumni and employer are considered for continuous improvements in curriculum and other academic aspects. The ultimate goal of stakeholder's feedback is to get useful insights for the purpose of improvement in all aspects of teaching, learning, assessment and infrastructure facilities. Inputs collected from all the stake holders are analyzed and carried forward in Board of Studies (BoS) for approval. After getting approval in BoS, the curriculum with the incorporation of recommended changes if any is sent to Academic Council for their final endorsement. The following structure describes the significance of stakeholders for the development.

1. **Student Graduate Survey Feedback:**
   - The inputs from the graduating students on design of curriculum, services extended incorporation of novel teaching technologies and their overall experience related to facilities and educational resources. However, graduating student will be submitting their overall impression related to institute and this feedback is collected.
2. **Alumni's Feedback:**
   - Alumni are considered as the ambassadors to the outside world. They are in a position to evaluate the extent to which the programme is effective in achieving the desired objective. As an alumnus they share their experience and participate in curricular updates in view of emerging technologies and tools.
   - Alumni survey is conducted, through which suggestions are provided to design syllabus which makes the students industry ready and well prepared towards competitive examinations.
3. **Employer Feedback:**
   - Employer feedback helps in enriching the program with industry relevant courses (Electives) which enable bridging the gap between the program curriculum and industry requirements.

4. **Faculty Feedback:**
   - Faculty feedback which involves accurate appraisal of the effectiveness of teaching, its strength and areas that need development and revision of curricular plays a vital role in the development of the institution. Faculty had given feedback about the curriculum, learning, teaching, evaluation and infrastructure.
   - Most of the Faculties rated that they strongly agree, and some agree about the fact that the aim and objective of syllabus. The comment on the adequacy of books prescribed/listed as reference a material was sufficient as felt by majority of the teachers. Representation from business and industry in Boards of studies is helpful in designing and improving the courses was strongly agreed. Tests and examinations are conducted well in time with proper coverage of all modules in the syllabus is strongly agreed.
   - Faculties also agreed that there was adequate funding and support to faculty members for upgrading their skills and qualifications.

In view of identifying the gap in the syllabus as per the requirement of various stakeholders, the Department has taken feedback on curriculum from various stakeholders. Suggestions like more smart and experiential leaning and approach to competitive exams, relevant to the framing of the syllabus of various courses were consolidated and discussed in BOS meeting.
Since few courses are multidisciplinary, faculties from various departments are actively participating in the syllabus restructuring process, as being members of Board of studies. These suggestions were communicated to the chairman of the board for the proper redressal of suggestions. Following actions were prominently taken

1. Few emerging courses like Automotive Electrical and Electronics system, Python, Hybrid and electrical vehicles has been introduced.
2. More industrial, value added course and workshops are conducted.
3. Expert guidance lecture and carrier guidance lecture are conducted on different topics to inculcate interest in subjects.

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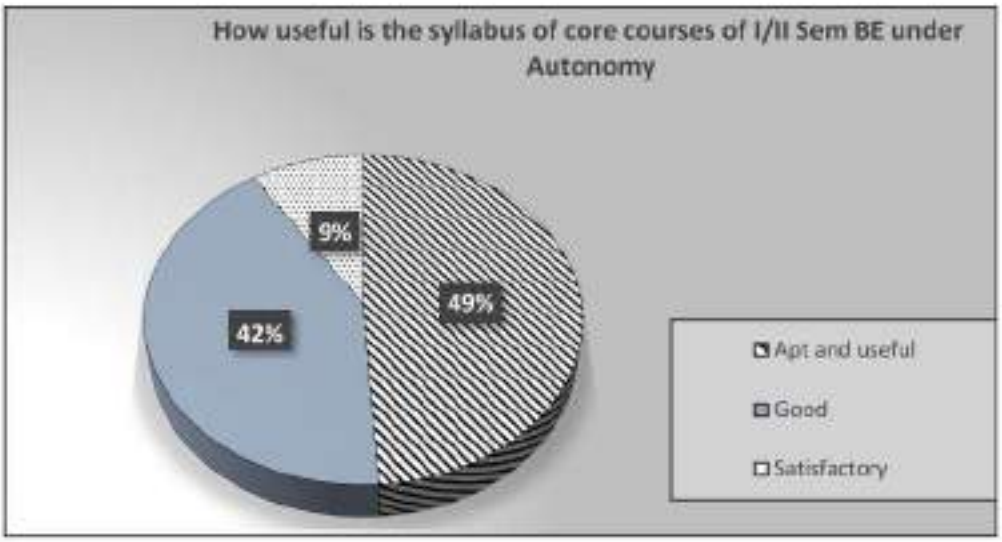
Department of Basic Sciences and Humanities

Feedback survey analysis of stakeholders on Scheme and Syllabus

AY 2019-2020

FROM STUDENTS &ALUMNI

1.



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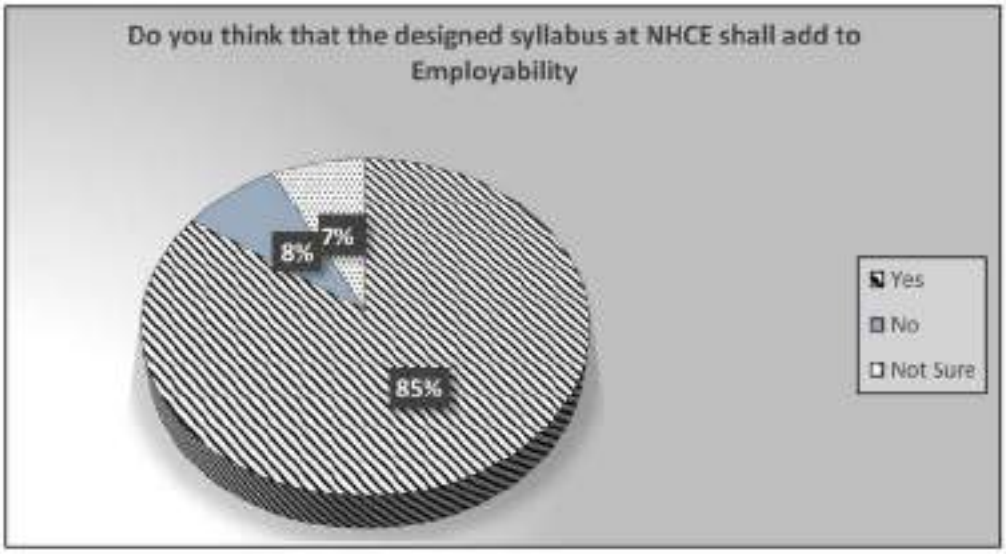

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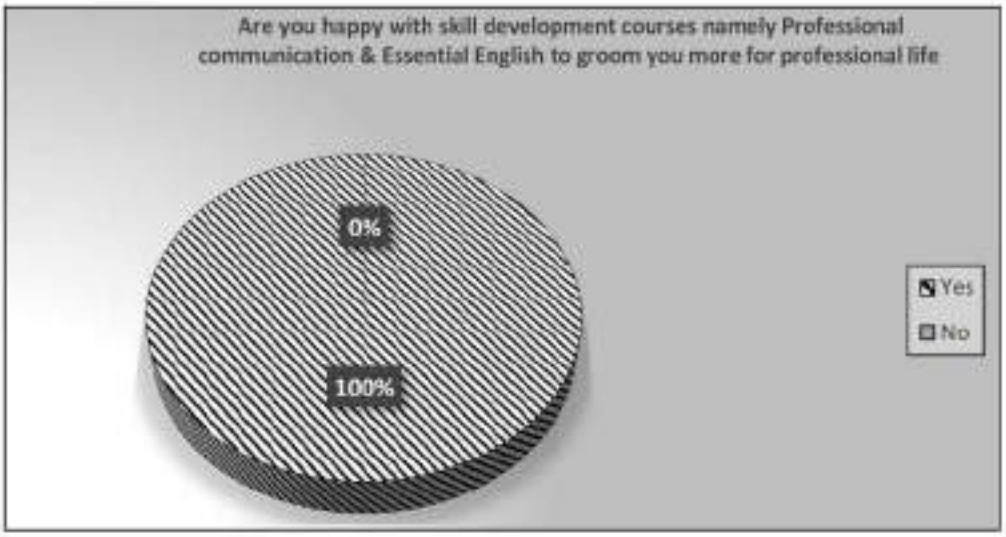
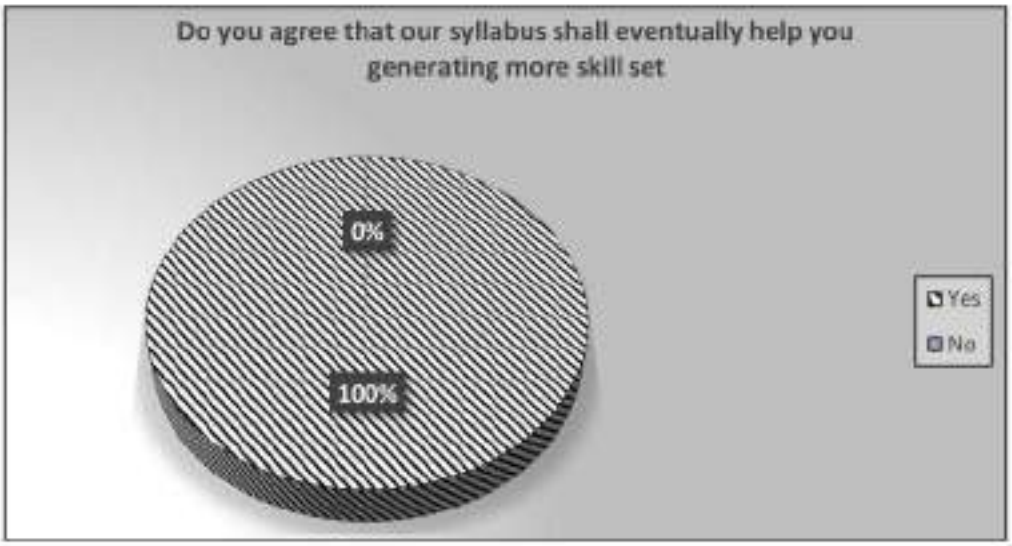
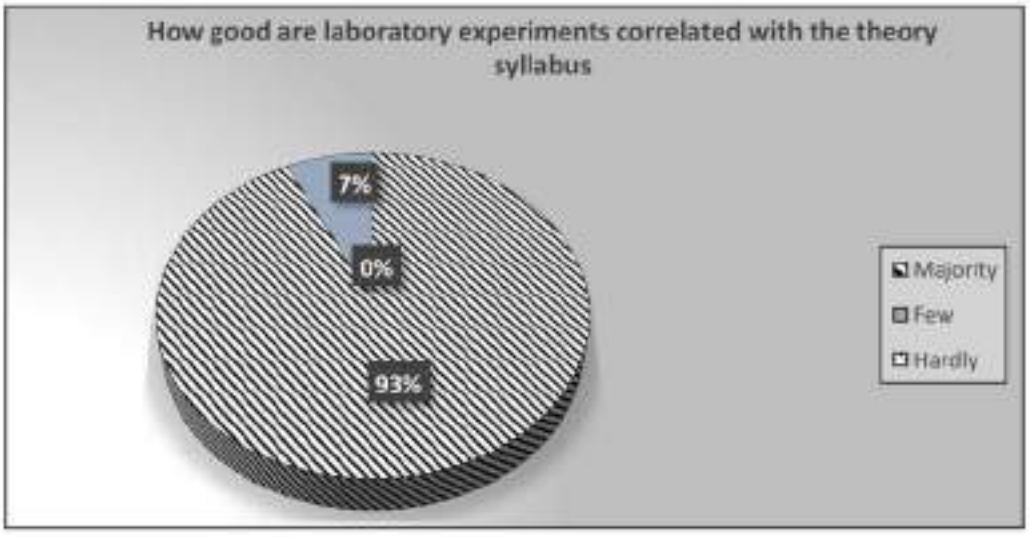

Are you happy with skill development courses namely Professional communication & Essential English to groom you more for professional life
0%
100%
Yes
No

4.

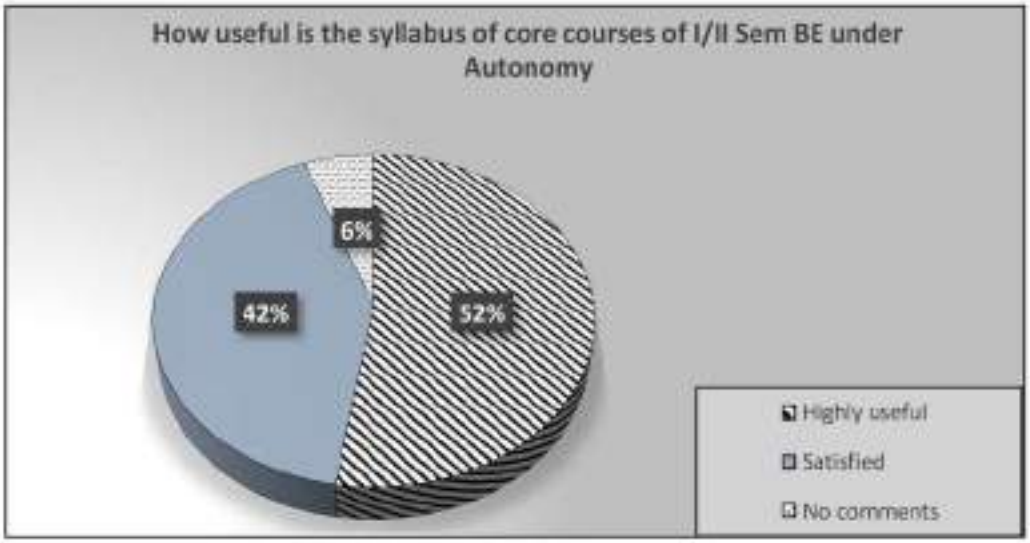

Do you agree that our syllabus shall eventually help you generating more skill set
0%
100%
Yes
No

5.

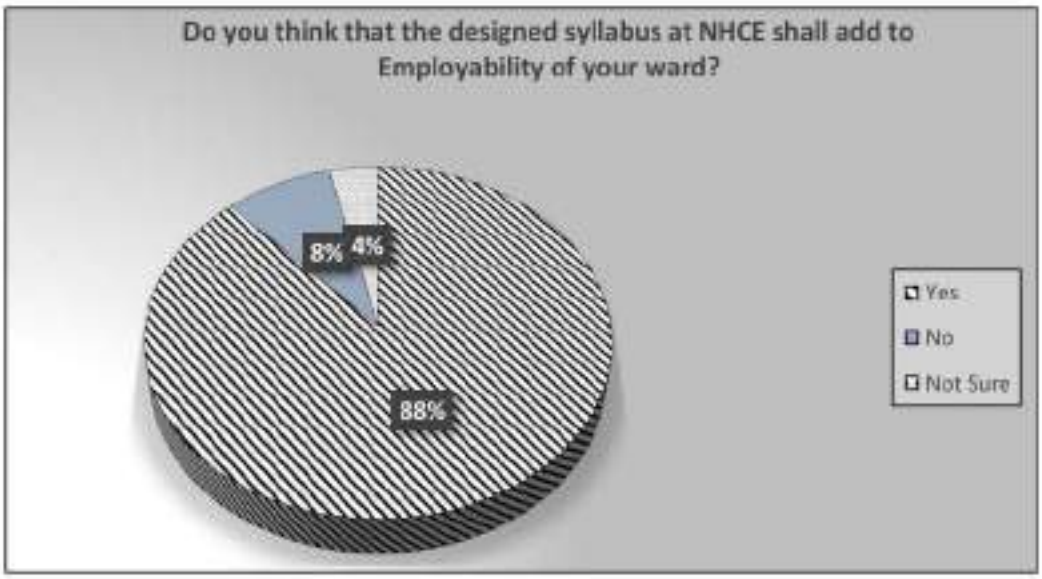

How good are laboratory experiments correlated with the theory syllabus
7%
0%
93%
Majority
Few
Hardly

FROM PARENTS , INDUSTRY EXPERTS & SUBJECT EXPERTS

1.



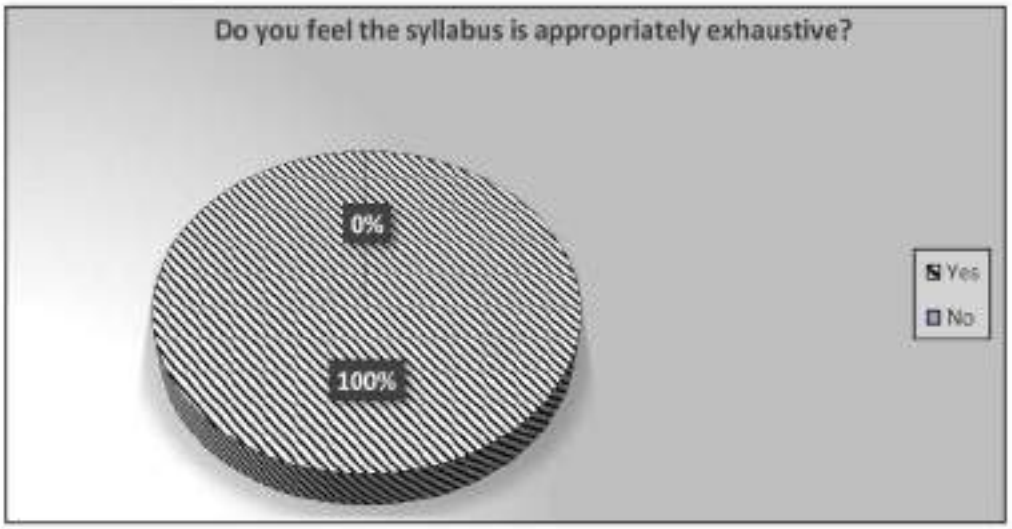
2.



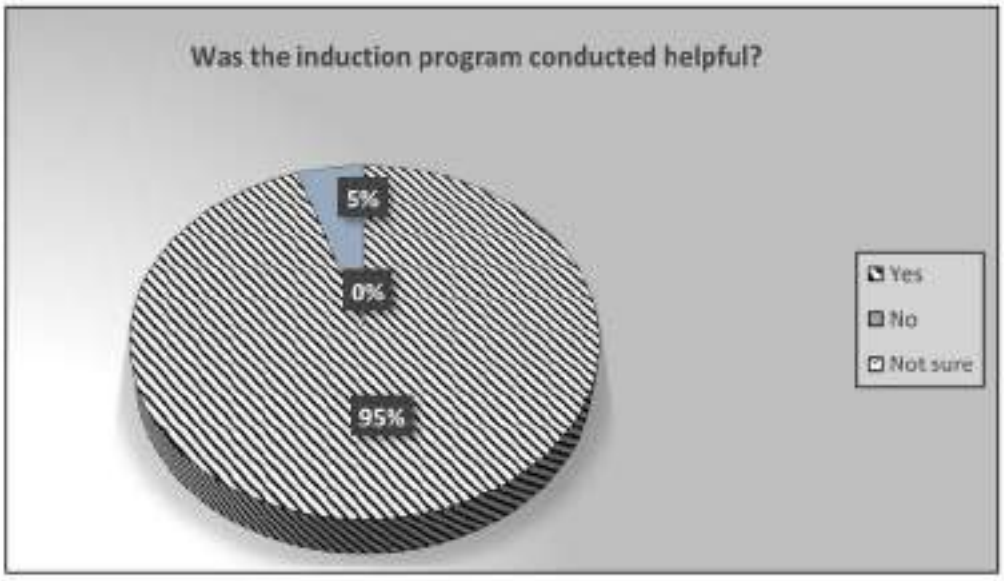
3.


Are you happy with skill development courses namely Professional communication & Essential English to groom you more for professional life
0%
100%
Yes
No

4.

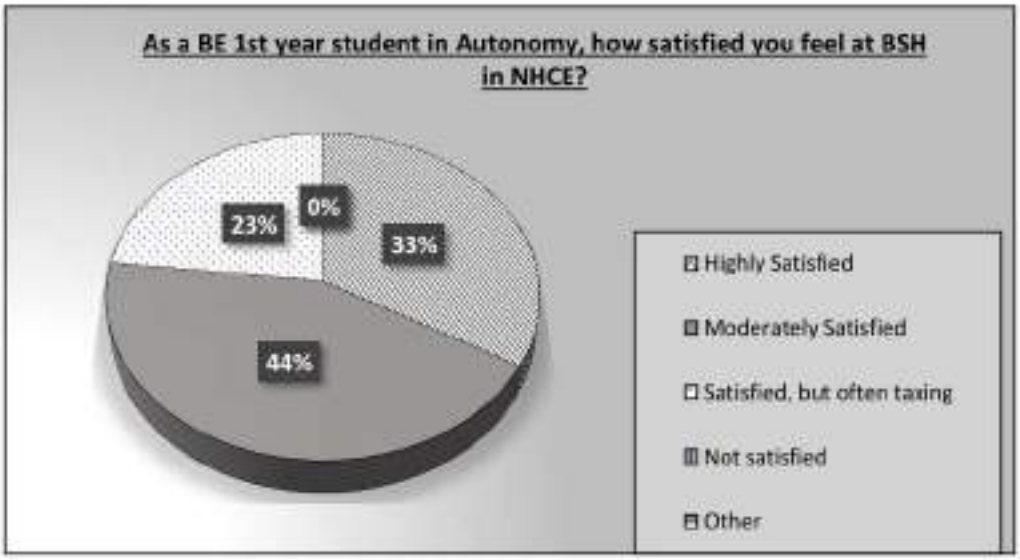

Do you feel the syllabus is appropriately exhaustive?
0%
100%
Yes
No

5.


Was the induction program conducted helpful?
5%
0%
95%
Yes
No
Not sure

Feedback survey results for students overall academic satisfaction for the AY 2019-2020 - Department of BSH

1.



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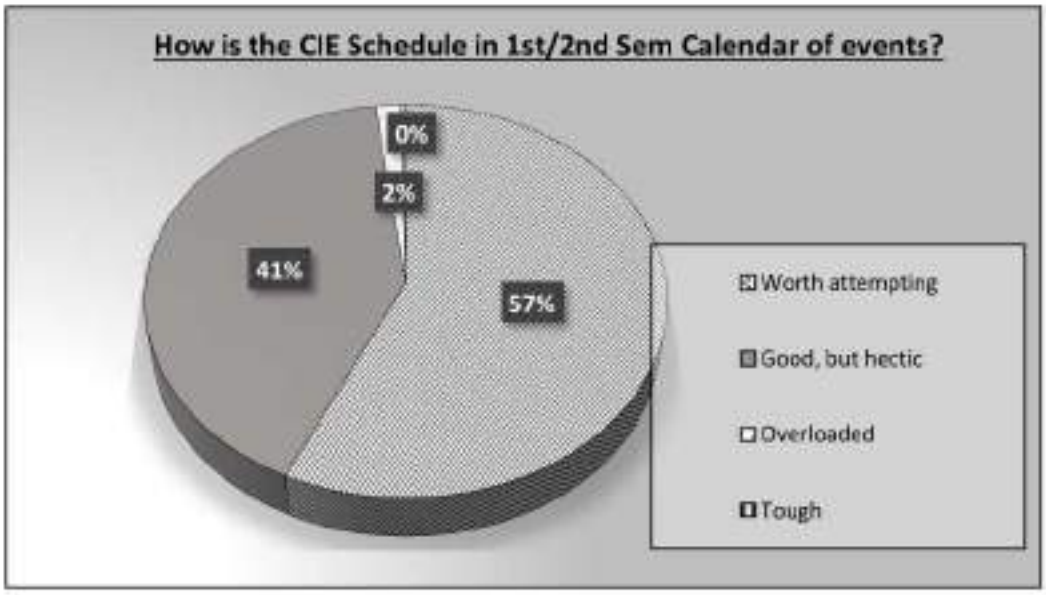
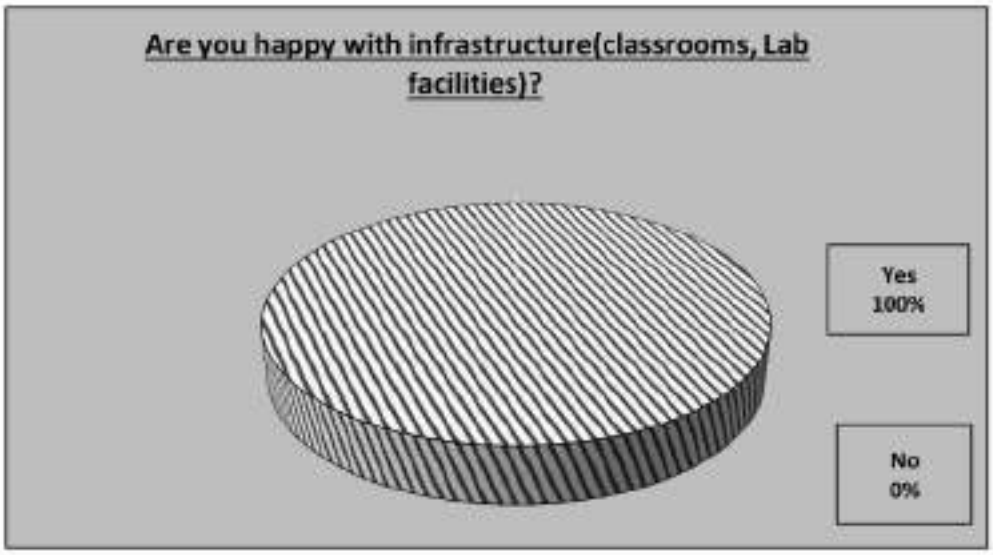
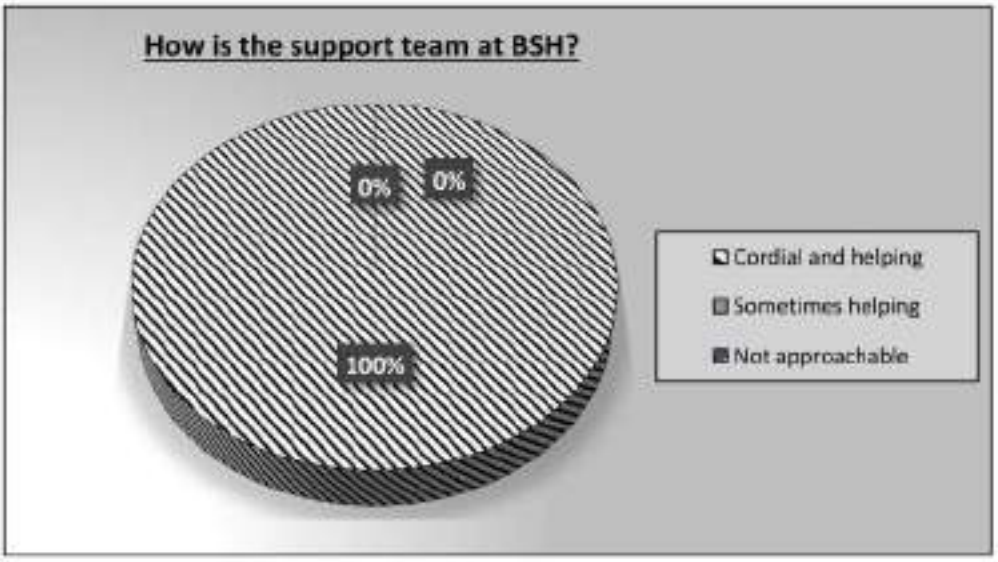


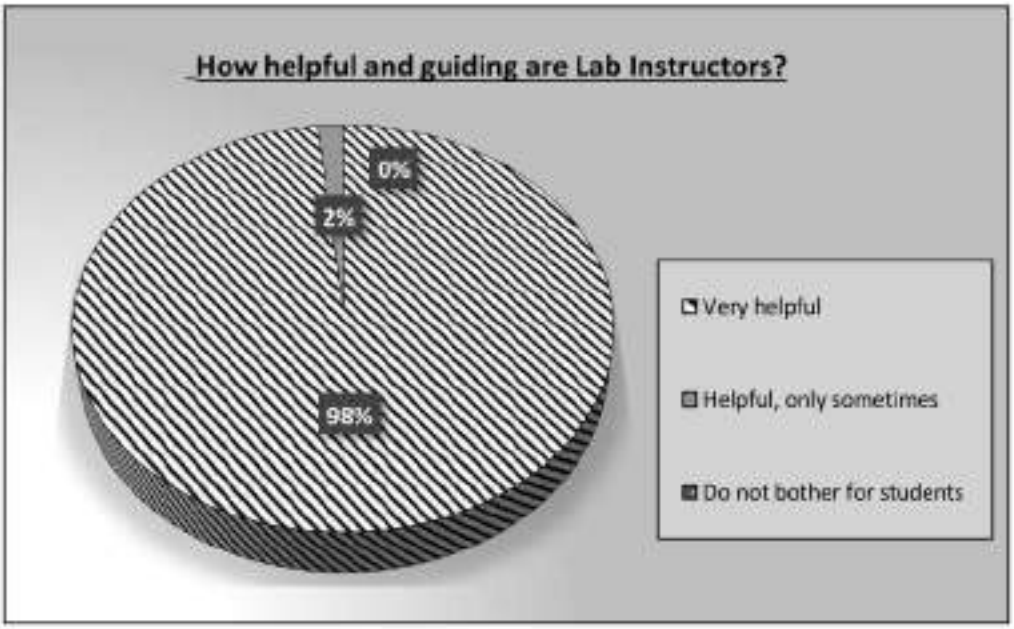
3.


Are you happy with infrastructure(classrooms, Lab facilities)?
Yes
100%
No
0%

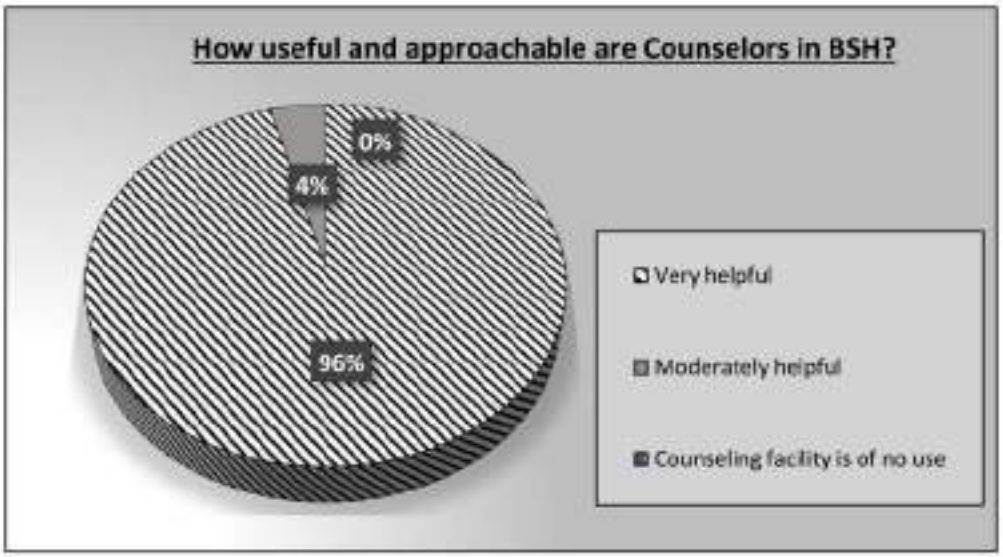
4.


How is the support team at BSH?
0%
0%
100%
Cordial and helping
Sometimes helping
Not approachable

5.


How helpful and guiding are Lab Instructors?
0%
2%
98%
Very helpful
Helpful, only sometimes
Do not bother for students

6.


How useful and approachable are Counselors in BSH?
0%
4%
96%
Very helpful
Moderately helpful
Counseling facility is of no use

HOD

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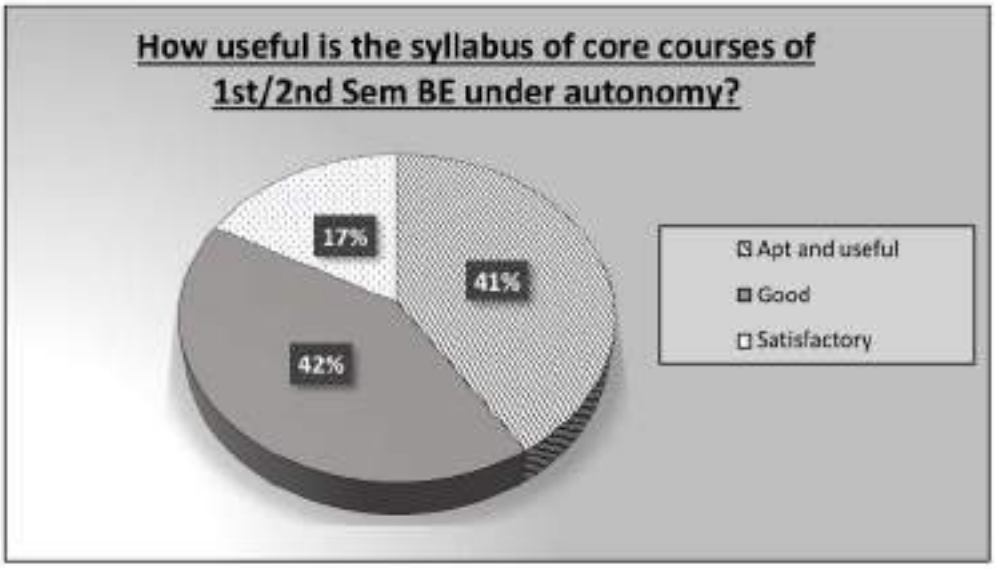
Feedback survey analysis of stakeholders on Scheme and Syllabus

AY 2018-19

FROM STUDENTS &ALUMNI

1.



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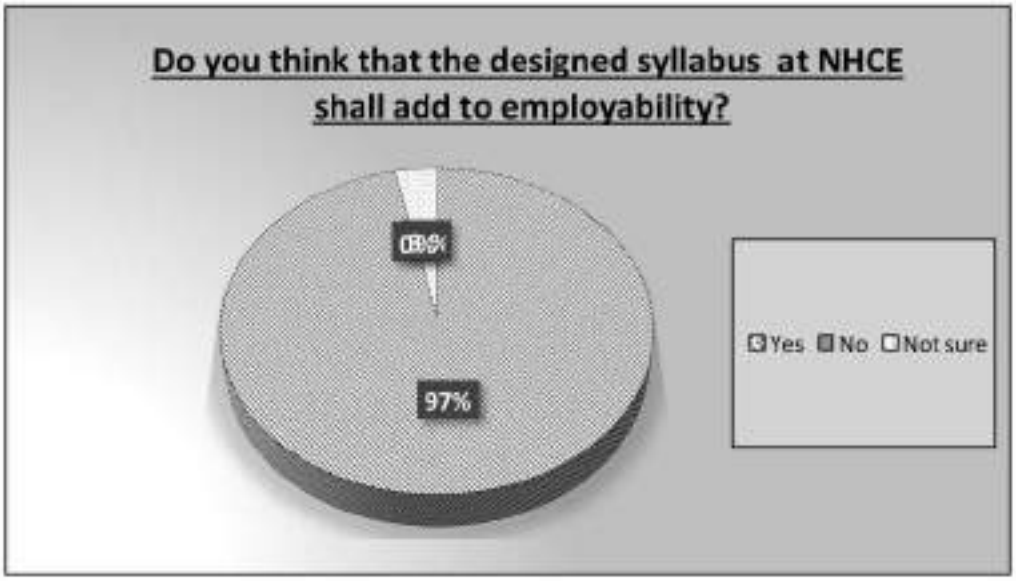
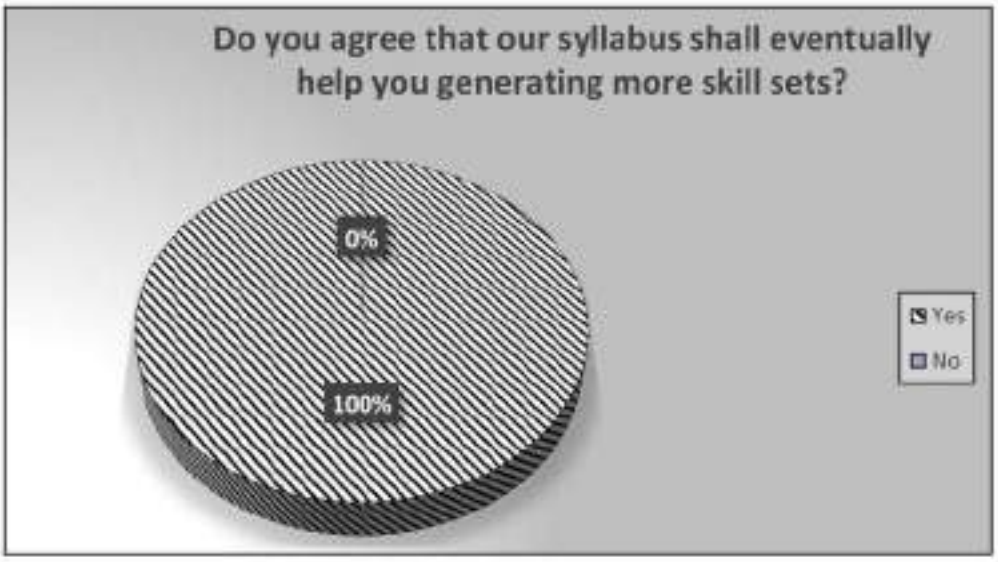


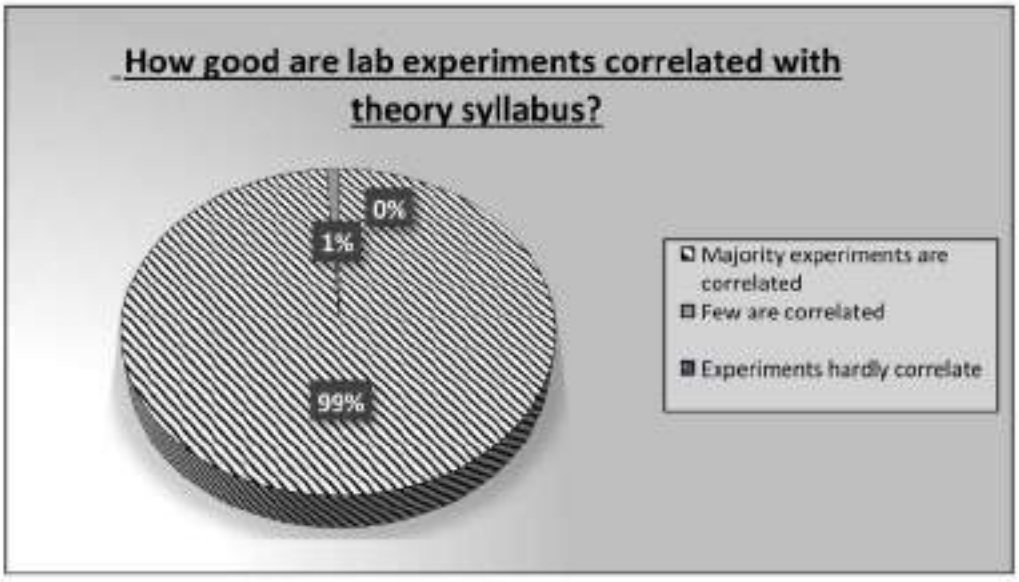
3.


Are you happy with skill development courses groom you more for professional life?
0%
100%
Yes
No

4.

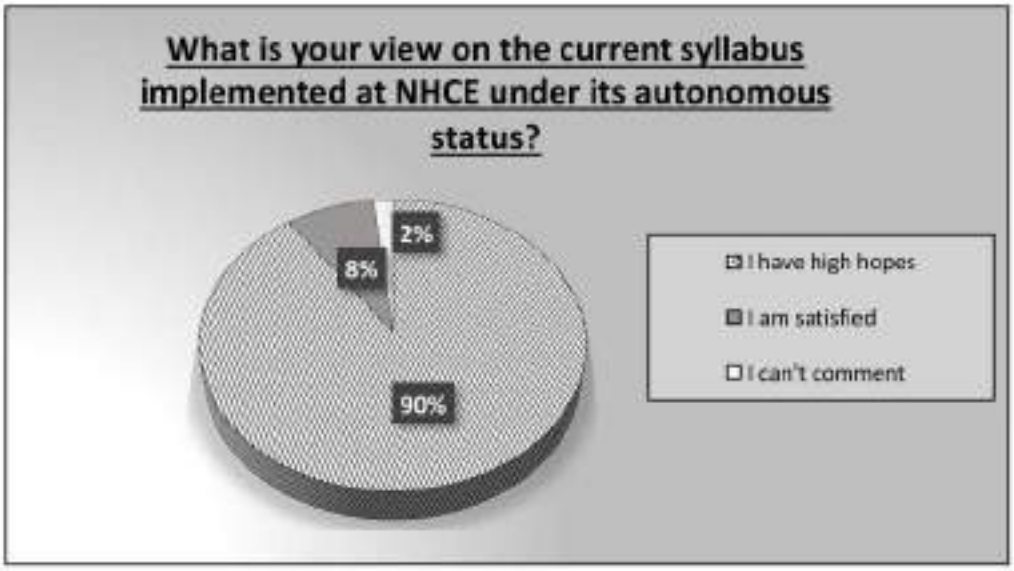

Do you agree that our syllabus shall eventually help you generating more skill sets?
0%
100%
Yes
No

5.


How good are lab experiments correlated with theory syllabus?
0%
1%
99%
Majority experiments are correlated
Few are correlated
Experiments hardly correlate

FROM PARENTS , INDUSTRY EXPERTS & SUBJECT EXPERTS

1.



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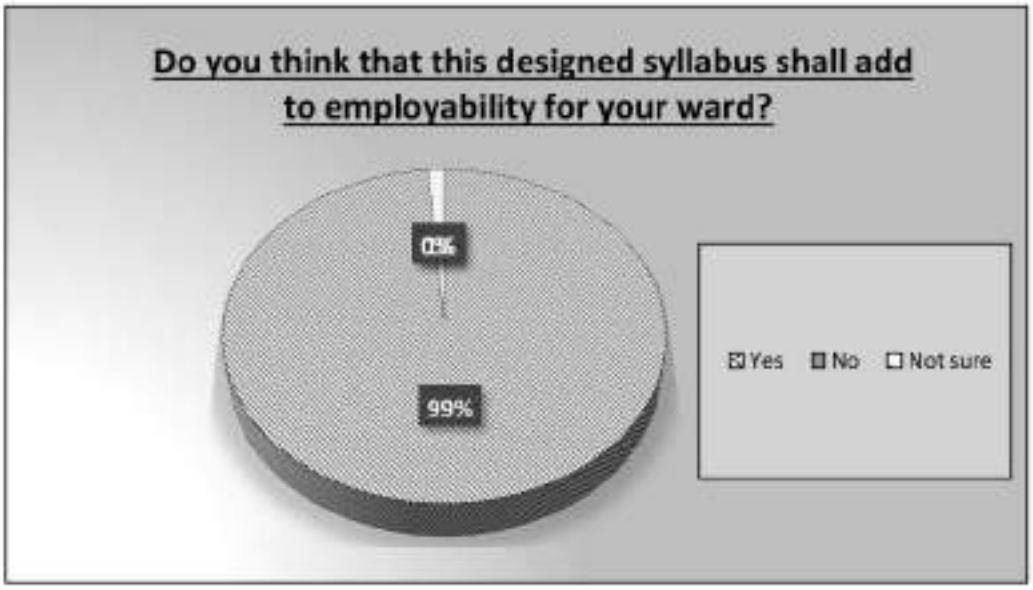
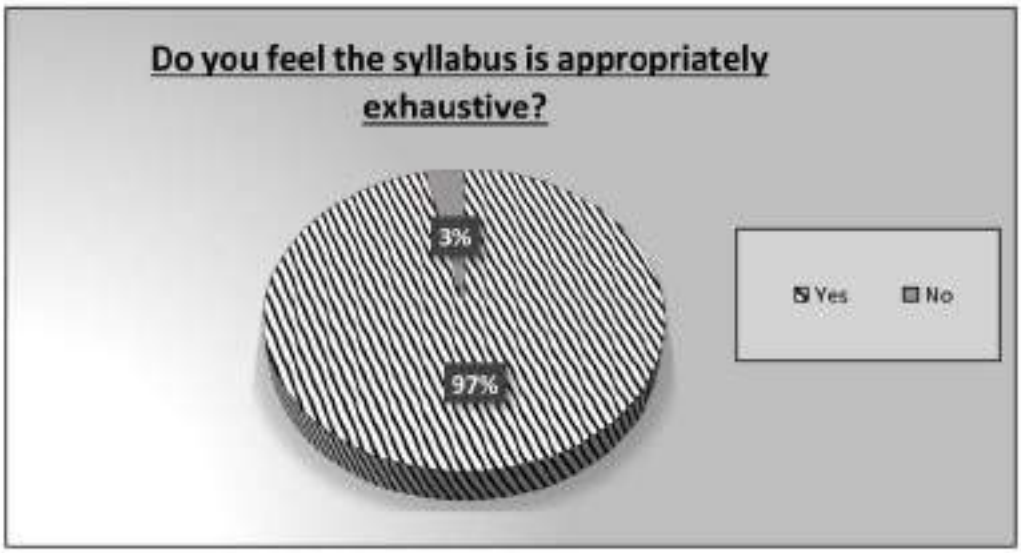


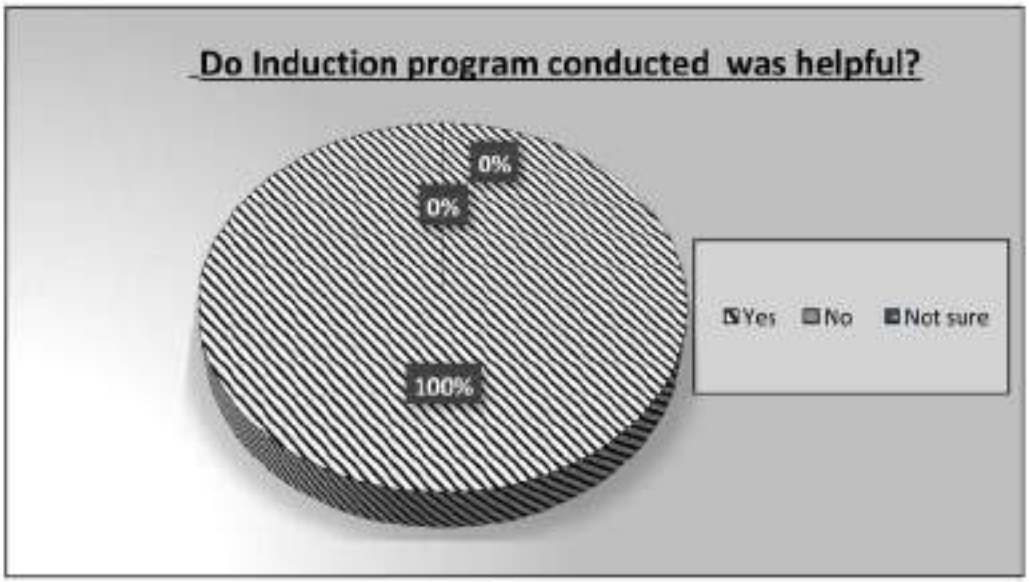
3.


Are you happy with skill development courses to groom your ward for professional life?
0%
100%
Yes
No

4.

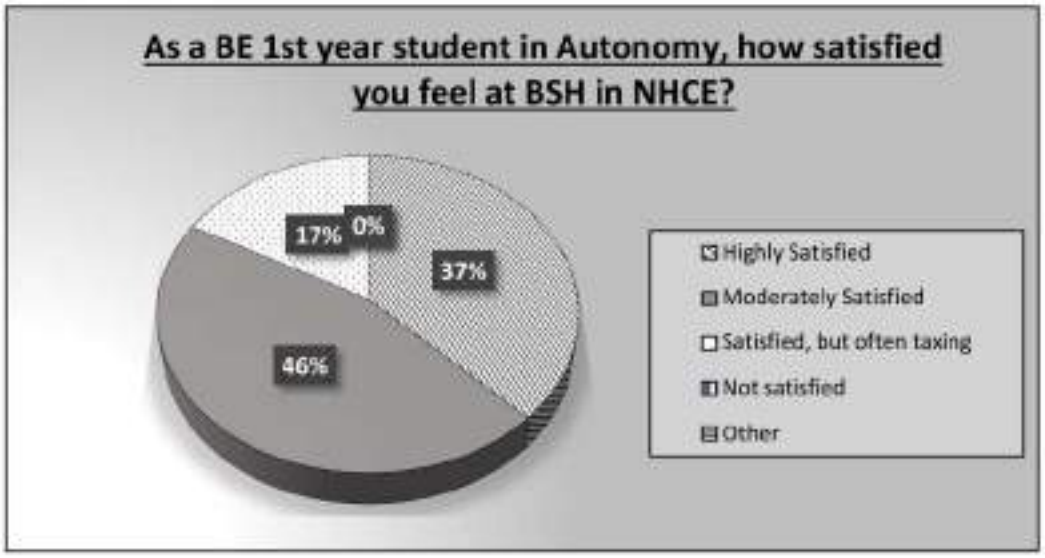

Do you feel the syllabus is appropriately exhaustive?
3%
97%
Yes
No

5.


Do Induction program conducted was helpful?
0%
0%
100%
Yes
No
Not sure

Feedback survey results for students overall academic satisfaction for the AY 2018-2019 - Department of BSH

1.



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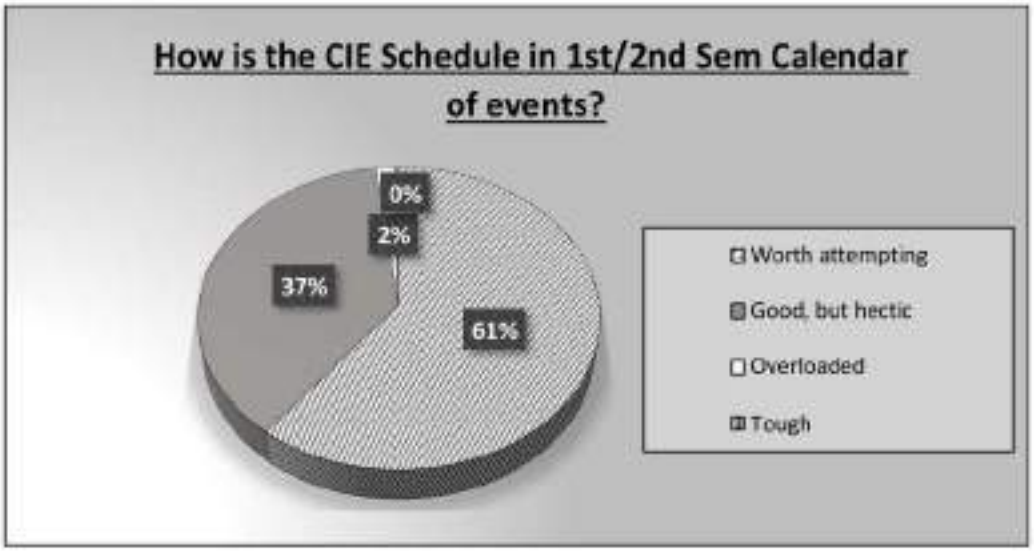

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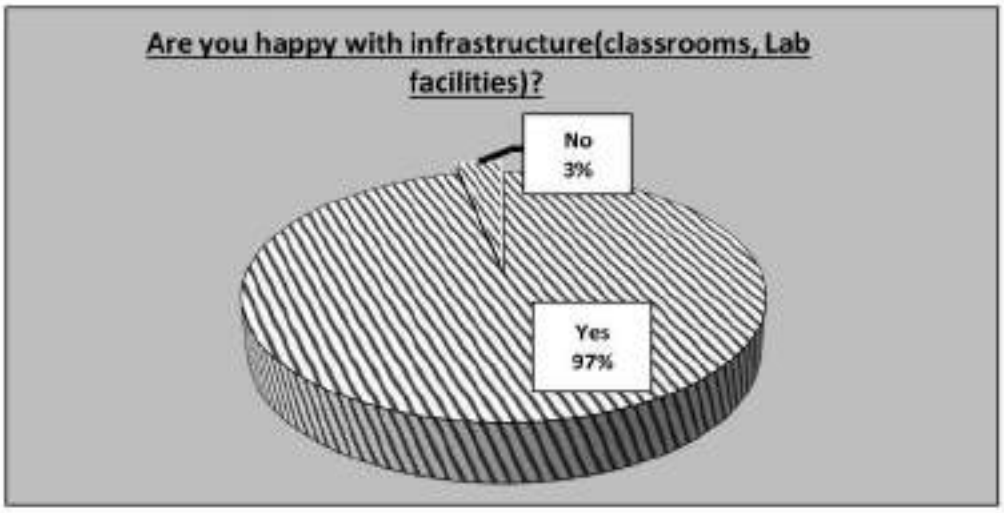
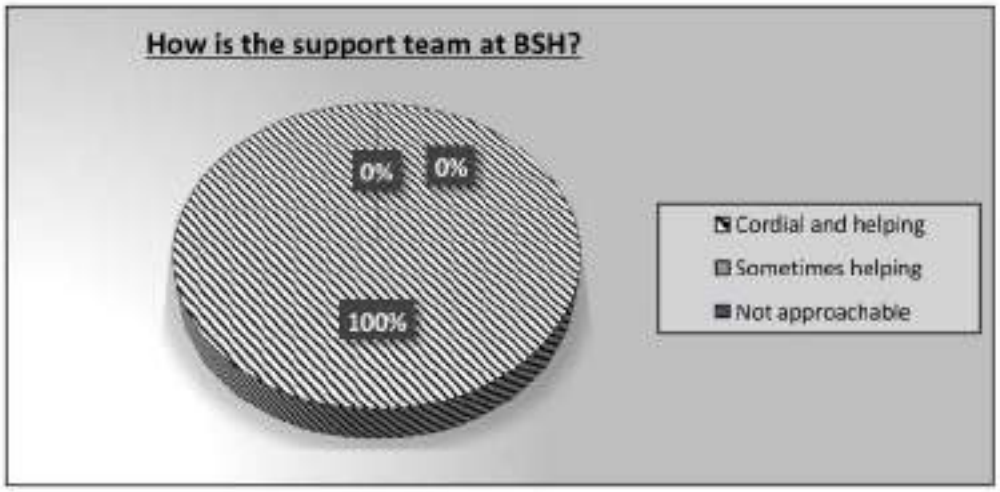
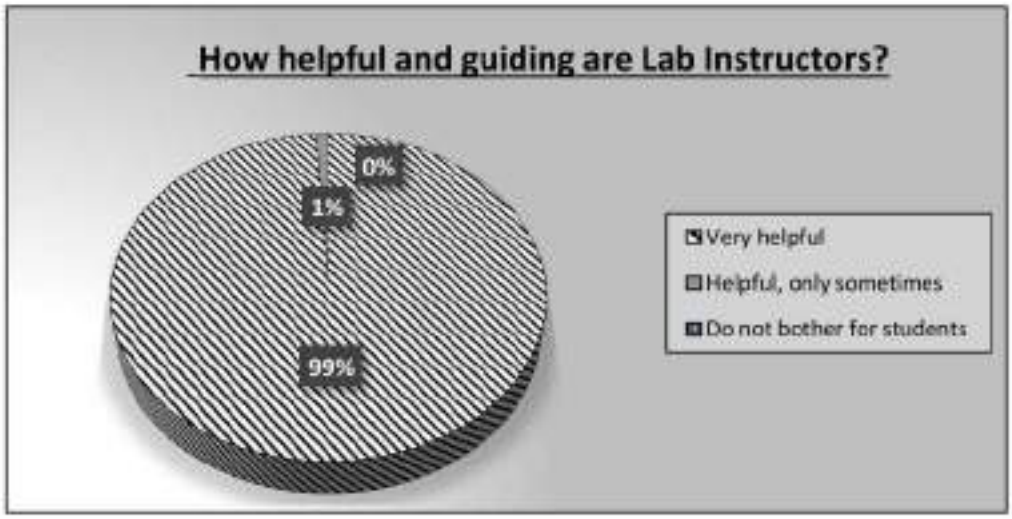

Are you happy with infrastructure(classrooms, Lab facilities)?
No
3%
Yes
97%

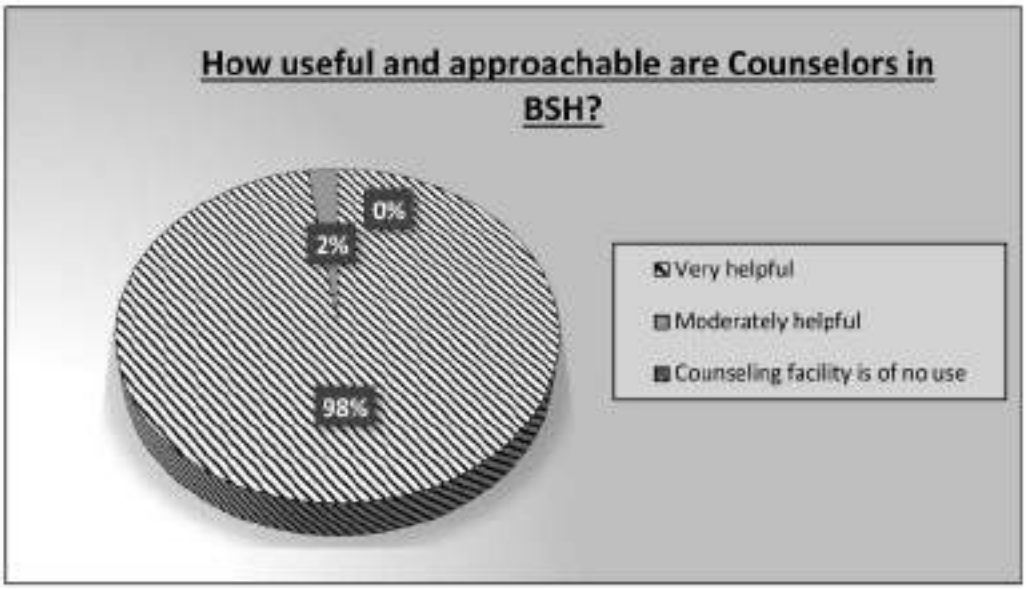
4.


How is the support team at BSH?
0%
0%
100%
Cordial and helping
Sometimes helping
Not approachable

5.


How helpful and guiding are Lab Instructors?
0%
1%
99%
Very helpful
Helpful, only sometimes
Do not bother for students

6.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0%
2%
98%
Very helpful
Moderately helpful
Counseling facility is of no use

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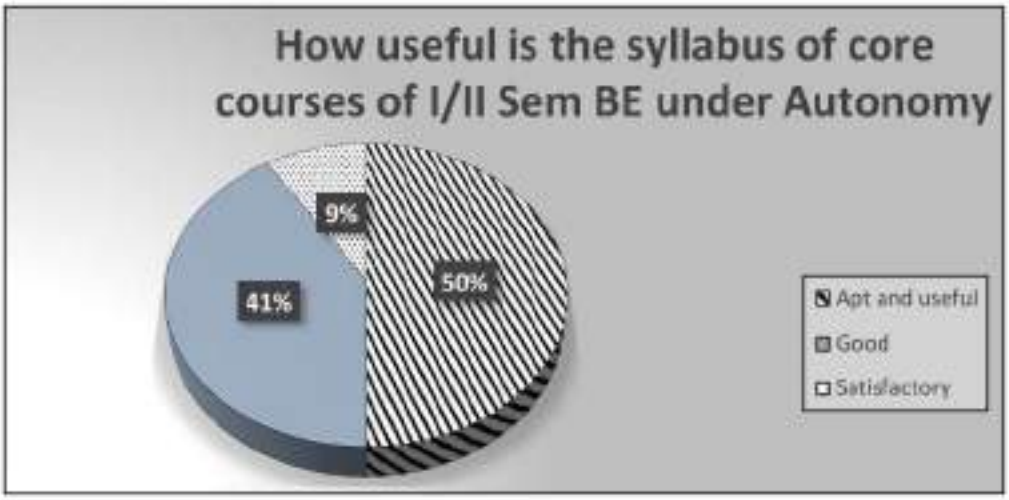
Feedback survey analysis of stakeholders on Scheme and Syllabus

AY 2017-18

FROM STUDENTS &ALUMNI

1.



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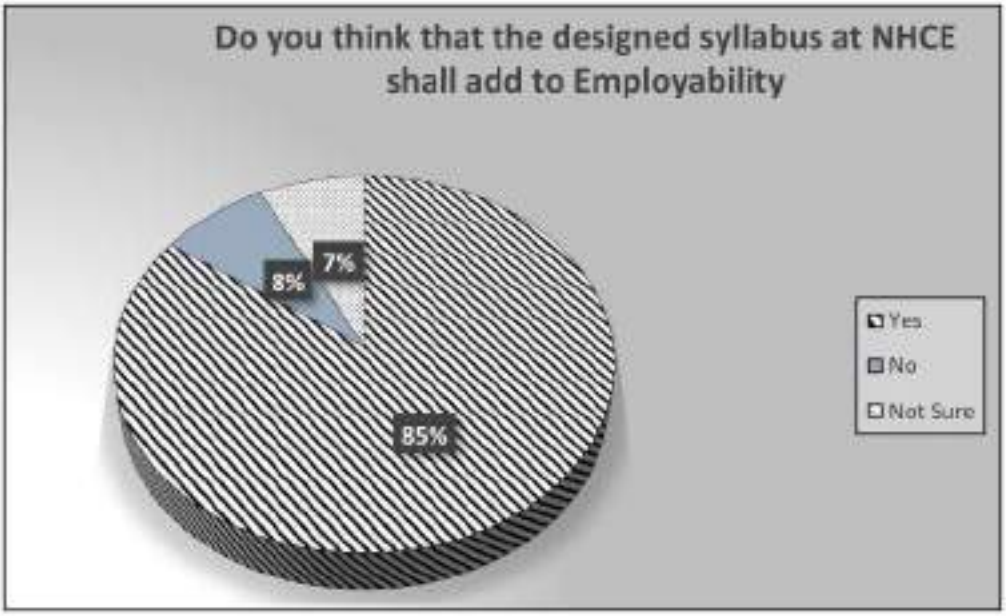
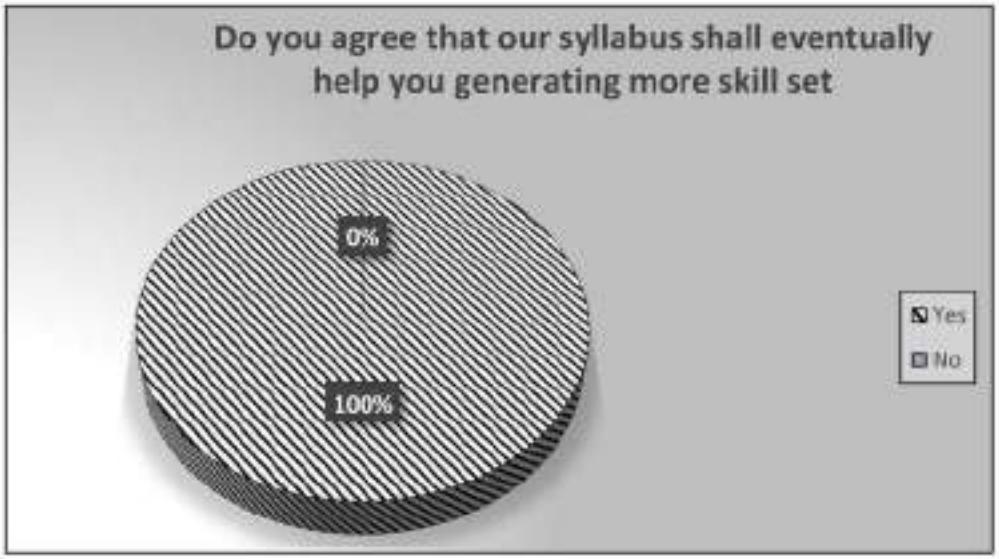


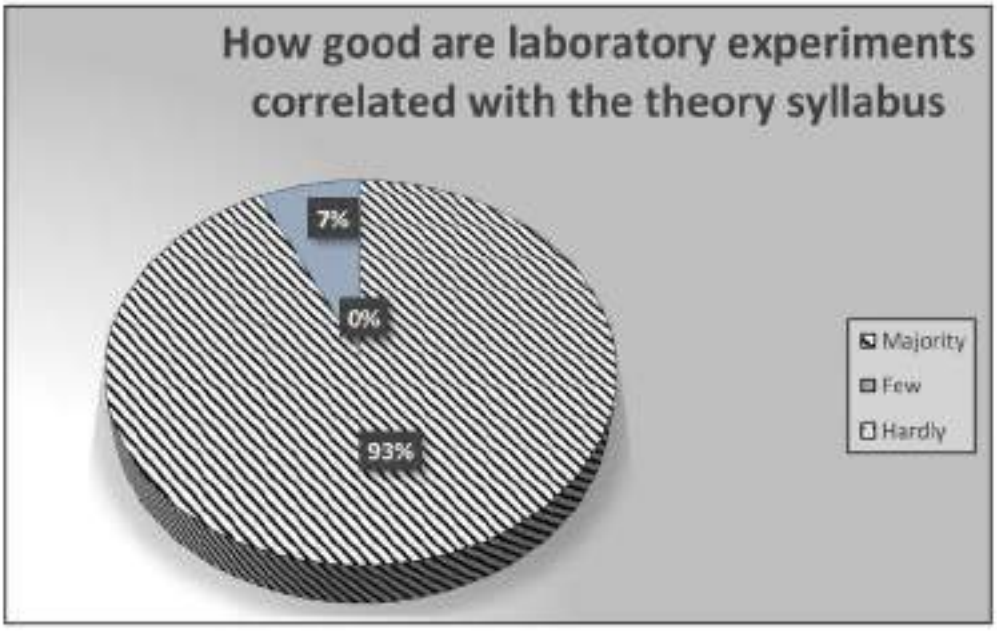
3.


Are you happy with skill development courses namely Professional communication & Essential English to groom you more for professional life
0%
100%
Yes
No

4.

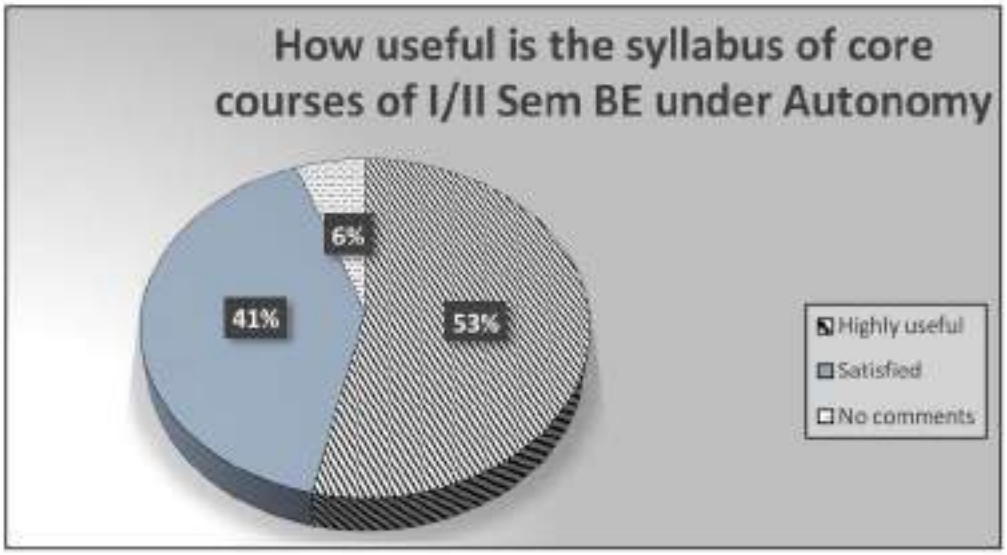

Do you agree that our syllabus shall eventually help you generating more skill set
0%
100%
Yes
No

5.

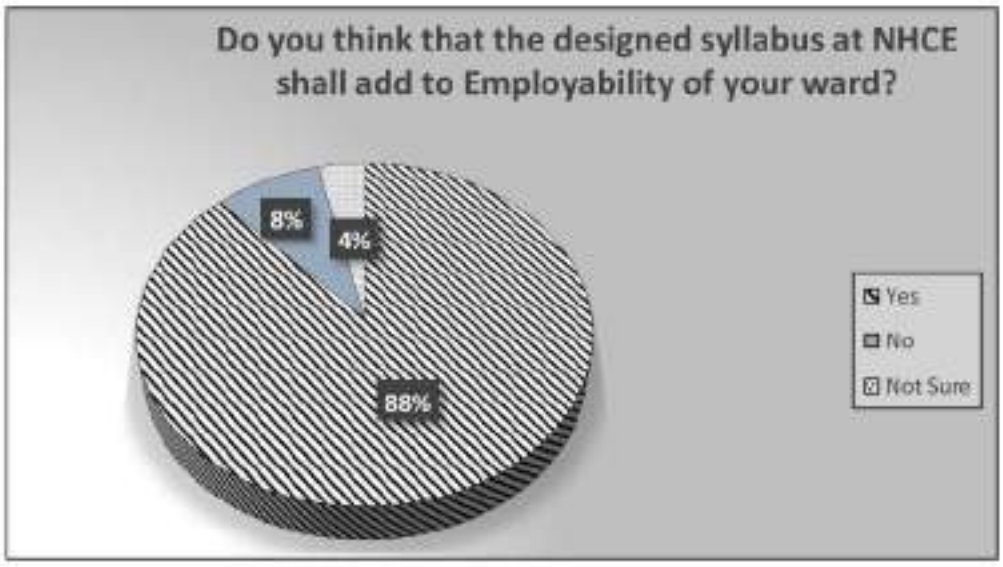

How good are laboratory experiments correlated with the theory syllabus
7%
0%
93%
Majority
Few
Hardly

FROM PARENTS, SUBJECT EXPERTS AND INDUSTRY EXPERTS

1.



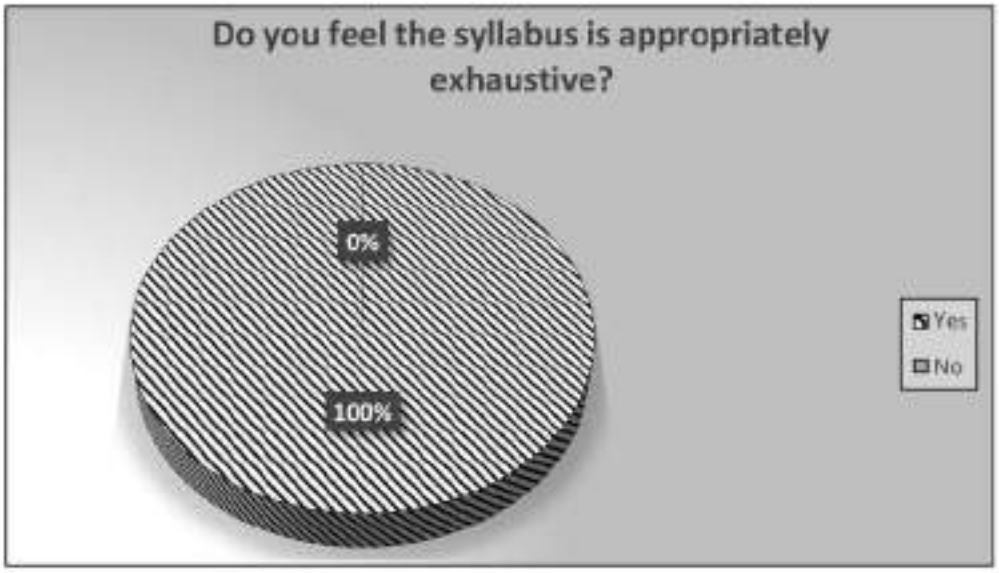
2.



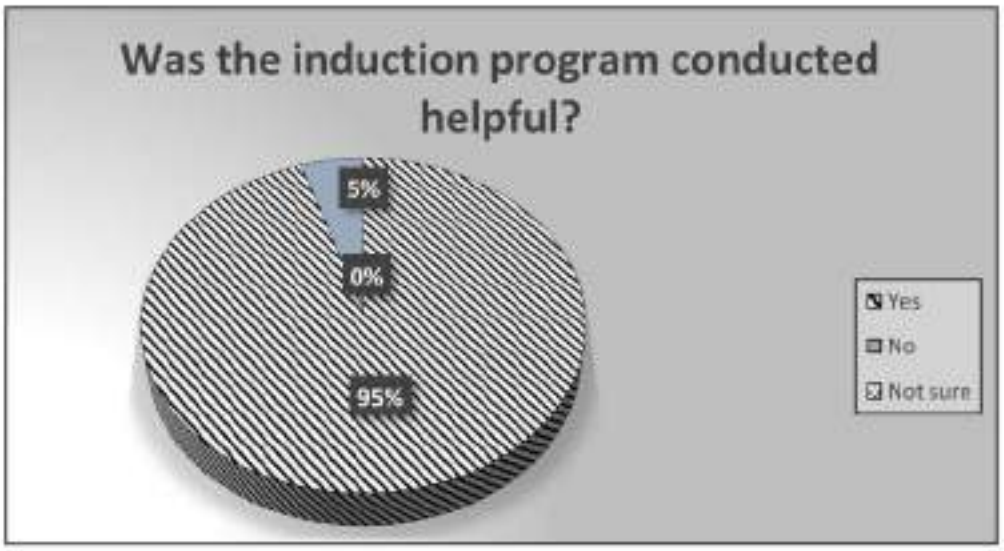
3.


Are you happy with skill development courses namely Professional communication & Essential English to groom you more for professional life
0%
100%
Yes
No

4.

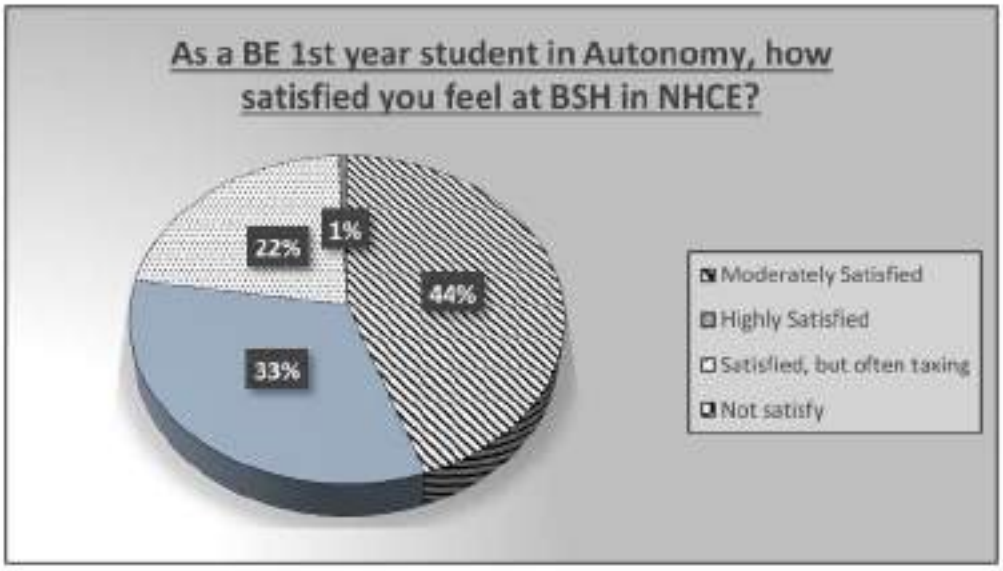

Do you feel the syllabus is appropriately exhaustive?
0%
100%
Yes
No

5.

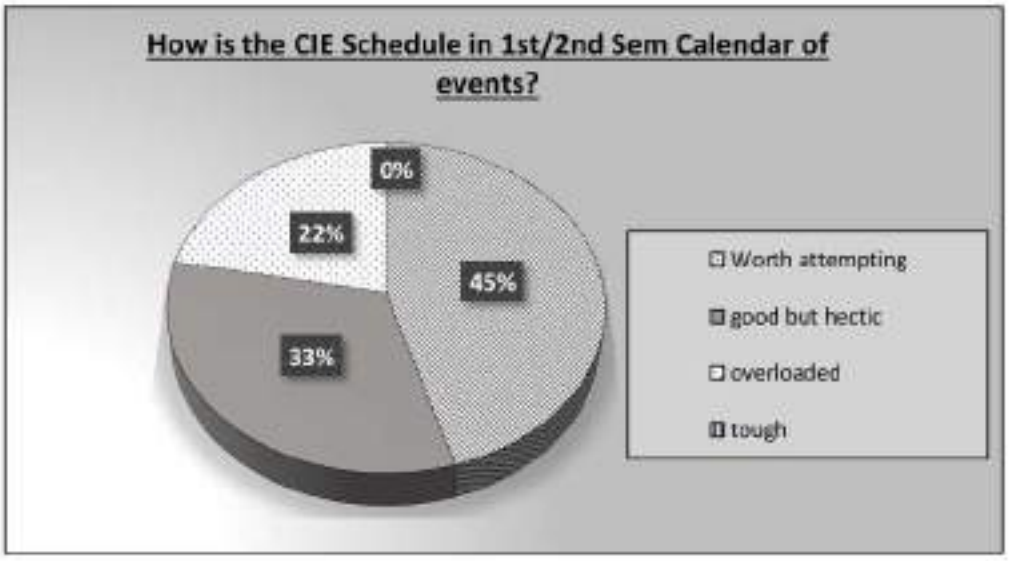

Was the induction program conducted helpful?
5%
0%
95%
Yes
No
Not sure

Feedback survey results for students overall academic satisfaction for the AY 2017-2018 - Department of BSH

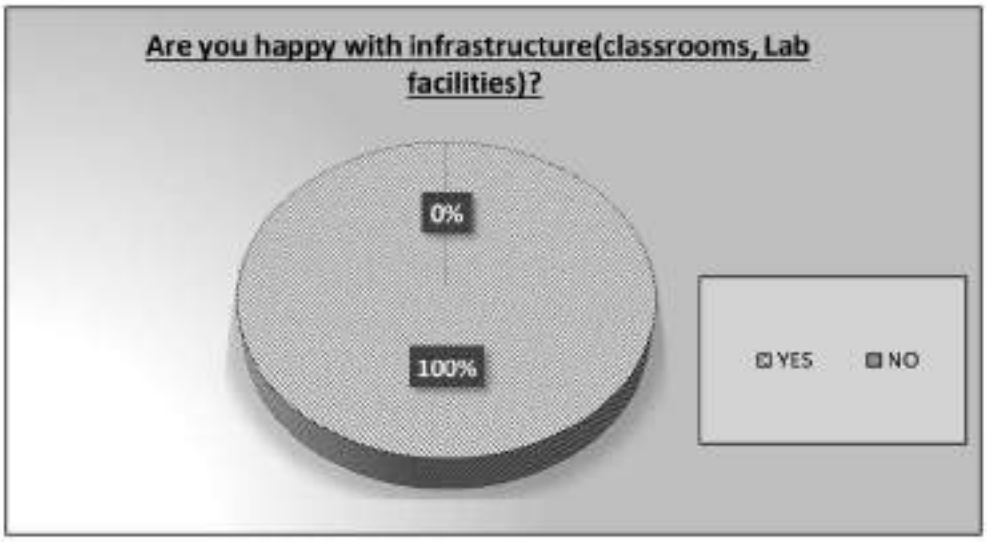
1.



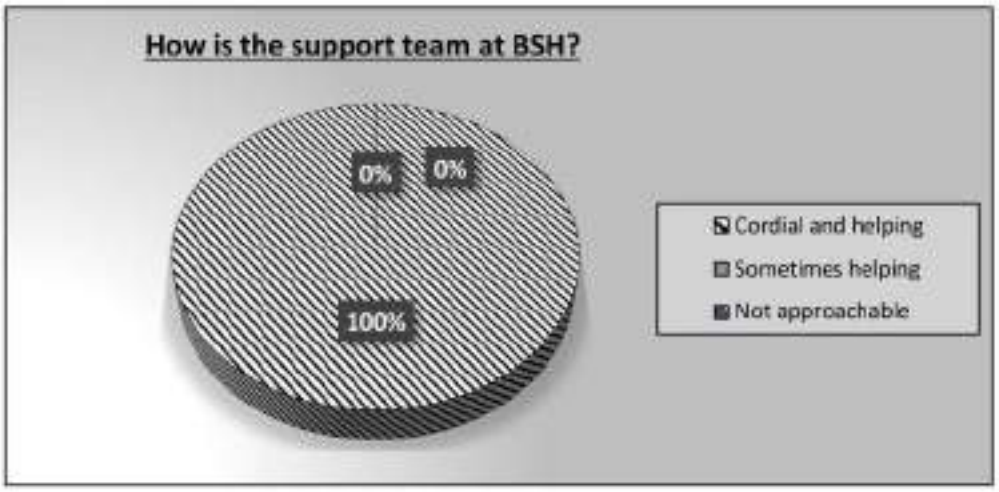
2.



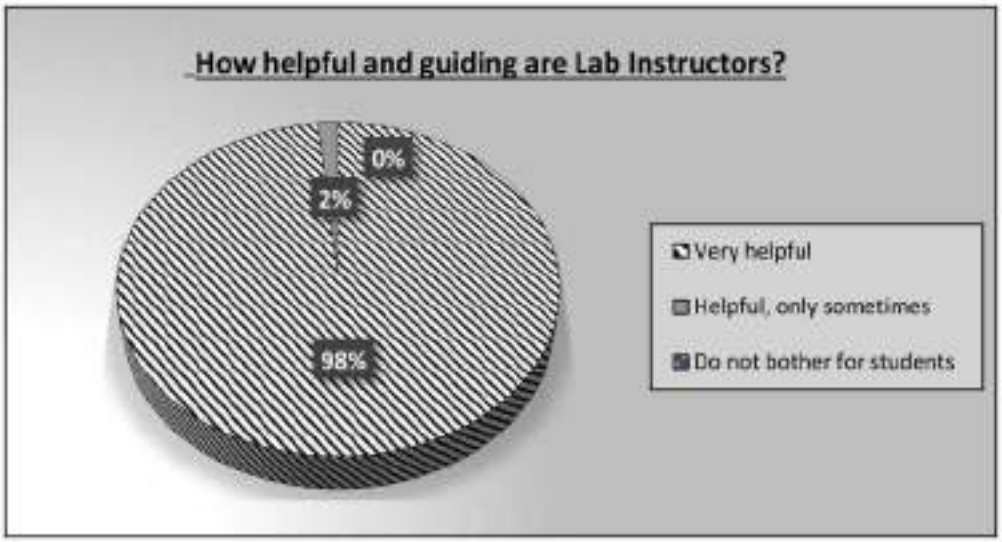
3.


Are you happy with infrastructure(classrooms, Lab facilities)?
0%
100%
YES
NO

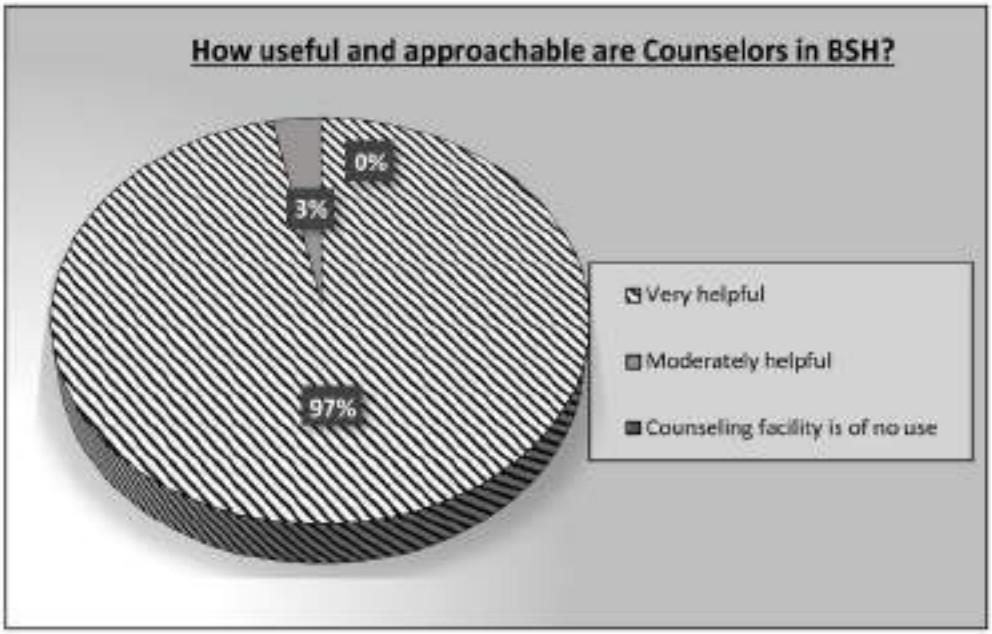
4.


How is the support team at BSH?
0%
0%
100%
Cordial and helping
Sometimes helping
Not approachable

5.


How helpful and guiding are Lab Instructors?
0%
2%
98%
Very helpful
Helpful, only sometimes
Do not bother for students

6.


How useful and approachable are Counselors in BSH?
0%
3%
97%
Very helpful
Moderately helpful
Counseling facility is of no use

HOD

New Horizon College of Engineering, Bangalore

Department of Basic Sciences and Humanities

Action taken based on stakeholders (students, alumni, parents, subject experts, industry experts) feedback on syllabus and scheme

AY 2019-20

Based on the stakeholders feedback for the A Y 2017-18 &2018-19, following decisions were taken and implemented in the revised syllabus

ENGINEERING CHEMISTRY & ENGINEERING CHEMISTRY LAB

Based on the stakeholders feedback for the AY 2017-18 & 2018-19 following decisions were taken and implemented in the current revised syllabus.

1. An advanced instrumental technique like UV- Visible spectrophotometry has been included.
2. To address the needs of industry - topics like Energy Crisis- renewable energies like, Biomass Energy and present generation solar cell like Dye-sensitized solar cell were included.
3. To create an ability to analyze social and environmental aspects of engineering activities. Environmental aspects of chemistry with respect to air, soil and water pollution and remedial methods like chemical capturing of carbon dioxide, advanced water treatment technique like, Photo catalytic dye degradation in water by TiO_2 nanoparticles and removal of heavy metals from industrial waste water by adsorption process were included.
4. To enable students to understand the applications of advanced commercial important polymers, properties and applications of shape memory polymers, biodegradable polymers, conducting polymers were introduced.
5. Preparation methods of commercially important nanomaterials like copper oxide and zinc oxide were included.
6. The theory and lab components were integrated in the previous curriculum which has been separated into two components.
7. To inculcate innovative and creative thinking in students "Innovative Experiment designed by student" has been introduced in the chemistry lab.
8. The Number of experiments has been increased to give more practical exposure to the students.

ENGINEERING PHYSICS & ENGINEERING PHYSICS LAB

1. Hall effect was course content in the module IV, to supplement the effect and to provide hands on experience Hall effect experiment was introduced in the Engineering Physics Lab from A.Y 2017 onwards
2. Engineering Physics which was an Integrated course (theory and Lab) was separated asEngineering Physics theory and Engineering Physics Lab.
3. The industry oriented module, Advanced Engineering Materials was included in the course which emphasizes on nanomaterials ,composites and biomaterials
4. The real time applications of optical fibers and LASERs in the mode of LiFi and endoscopy was included in the course content from A.Y 2019 onwards

MATHEMATICS

1. Changed the Course name as Applied Mathematics-I, II, III and IV since many Engineering applications were introduced in all the modules.
2. For III and IV semesters a cluster wise syllabus has been introduced like
   (AUT, CIV & MEE),
   (CSE & ISE) and
   (ECE & EEE)
3. Discrete Mathematics and Graph Theory has been introduced for CSE & ISE in IV semester as per the stakeholder's requirement.
4. For lateral entry students Basic Applied Mathematics-I &II has been introduced.

HUMANITIES

1) Revamping of syllabus by integrating Essential English and Professional Communication modules.

2) Setting right the mismatched anamoly of training 50% of the students in workplace communication skills during the 1st semester and then introducing them to basic grammar in the 2nd semester.

3) Shifting from MCQ based SEE to evidence based assessment of speaking competencies, on the pattern of Cambridge English Test at B1/B2 level. The students are assessed by one internal and one external examiner. Students have to complete two individual speaking tasks and one interactive conversation cum analytical task. They are assessed on the following parameters:

a)Grammar

b)Vocabulary

c)Pronunciation

d)Discourse Management

e)Interactive Communication

4) It was internally felt by the new set of faculty handling the subject that the syllabus needs to be revamped to be in tune with industry expectations with regard to language usage, both oral and written.

5) Till the AY 2018-19, Physics cycle students were taught Essential English in the 1st semester and Professional Communication in the 2nd semester. The reverse was the case with the students of Chemistry cycle, which resulted in those students being introduced to workplace requirements of LSRW in the 1st semester and then coming down to learn the basics of English grammar in the 2nd semester. In order to set right the anamoly, a major suggestion was put forth in the BOS meeting held on 10.05.2019 on the need to integrate the syllabus of Essential English and Professional Communication. After due deliberation, the BOS members from the academia and the industry, felt that the change was in the right direction and accepted the suggestion. With the BOS approval for integration of syllabus, the entire syllabus was revamped, retaining certain components and adding few skill components from Professional Communication.

5) W.e.f AY 2019-20, a uniform system was introduces where all the 1st semester students would undergo the revised syllabus under the head "Essential English" and 2nd semester students undergo 'Professional Communication'

Deletions:

Topics that are not related to workplace communication like

Essay Writing, Creative Writing. Jumbled sentences, Direct Indirect Speech.

Additions:

Speaking Skills- Social graces, meeting people for the first time, exchanging pleasantries, Talking about routines, likes and dislikes, language of comparison and contrast

Reading Skills:

Sub skills of reading, paraphrasing ideas and concepts, summarising lengthy texts.

Writing Skills:

Expansion of ideas, practising grammar structures through work sheets.

Dr. Anasuya VS **Dr.Revathi V** **Dr.Srinivasa G** **Dr.Sowmya Narayanan**

HOD – Chemistry **HOD- Physics** **HOD – Mathematics** **HOD - Humanities**

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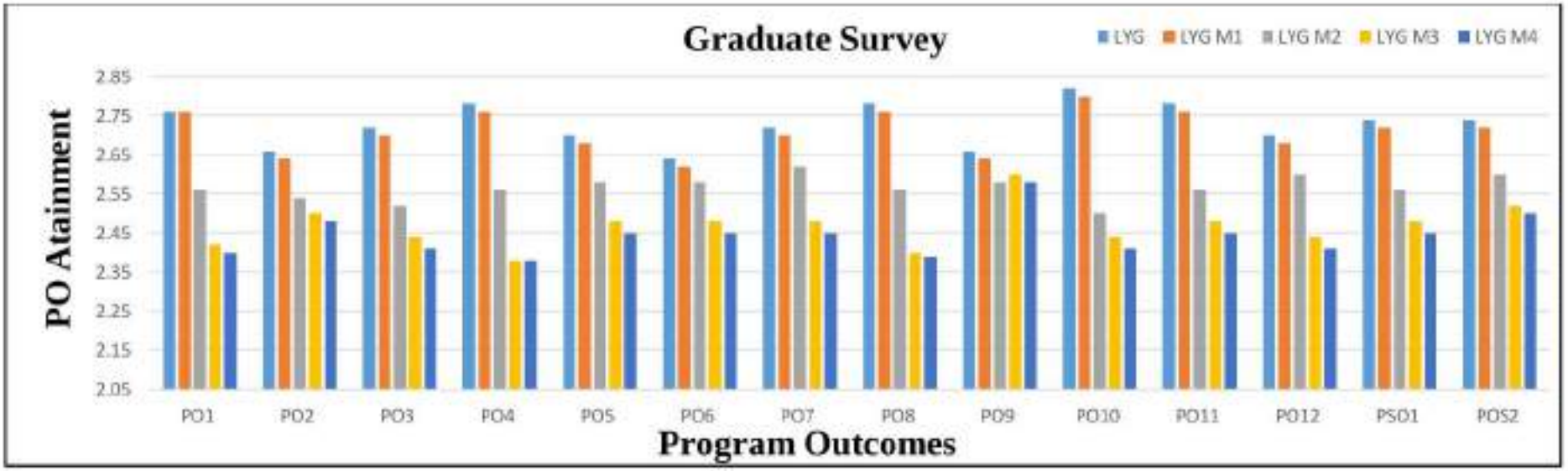
DEPARTMENT OF CIVIL ENGINEERING

Stakeholders Feedback Analysis

Student Graduate Survey

Response of Graduate students in program attainment versus program outcomes:

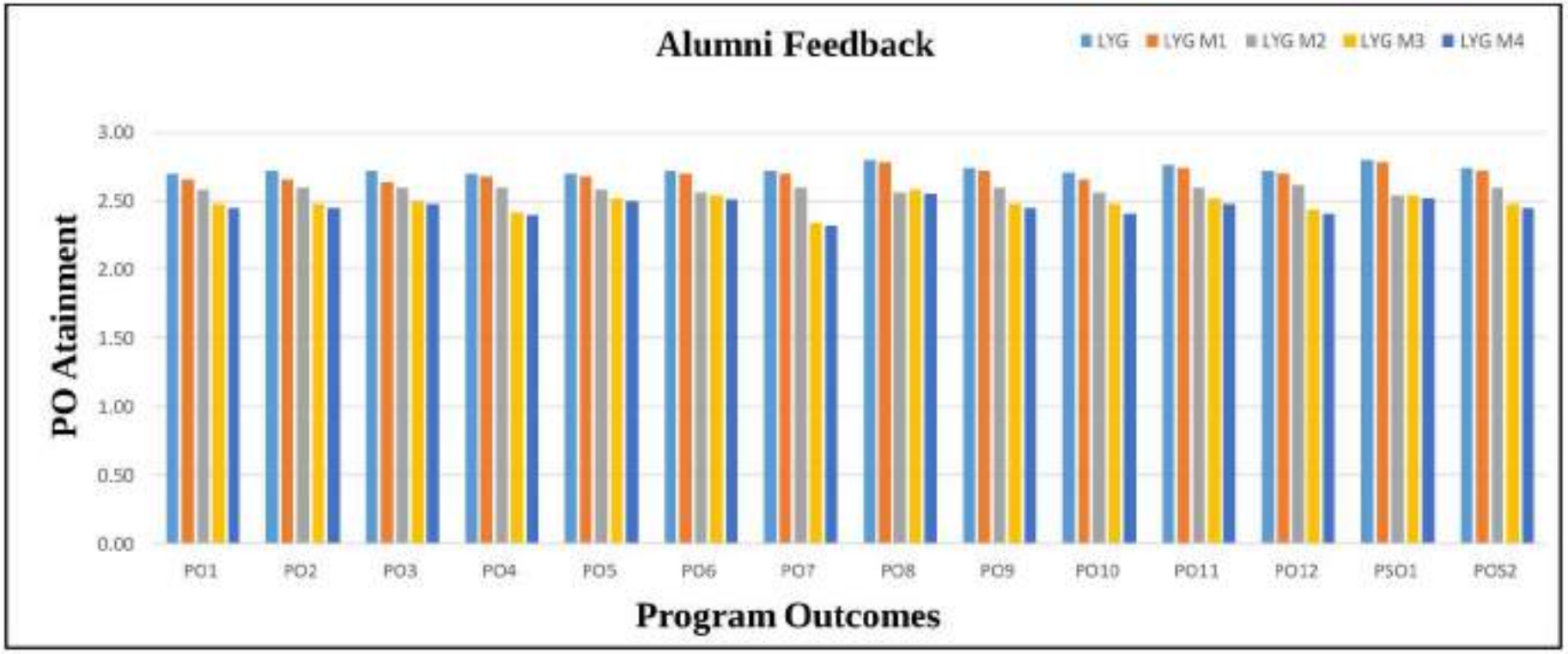
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	POS2
LYG	2.76	2.66	2.72	2.78	2.70	2.64	2.72	2.78	2.66	2.82	2.78	2.70	2.74	2.74
LYG M1	2.76	2.64	2.70	2.76	2.68	2.62	2.70	2.76	2.64	2.80	2.76	2.68	2.72	2.72
LYG M2	2.56	2.54	2.52	2.56	2.58	2.58	2.62	2.56	2.58	2.50	2.56	2.60	2.56	2.60
LYG M3	2.42	2.50	2.44	2.38	2.48	2.48	2.48	2.40	2.60	2.44	2.48	2.44	2.48	2.52
LYG M4	2.40	2.48	2.41	2.38	2.45	2.45	2.45	2.39	2.58	2.41	2.45	2.41	2.45	2.50



Alumni Survey

Response of Alumni students in program attainment versus program outcomes:

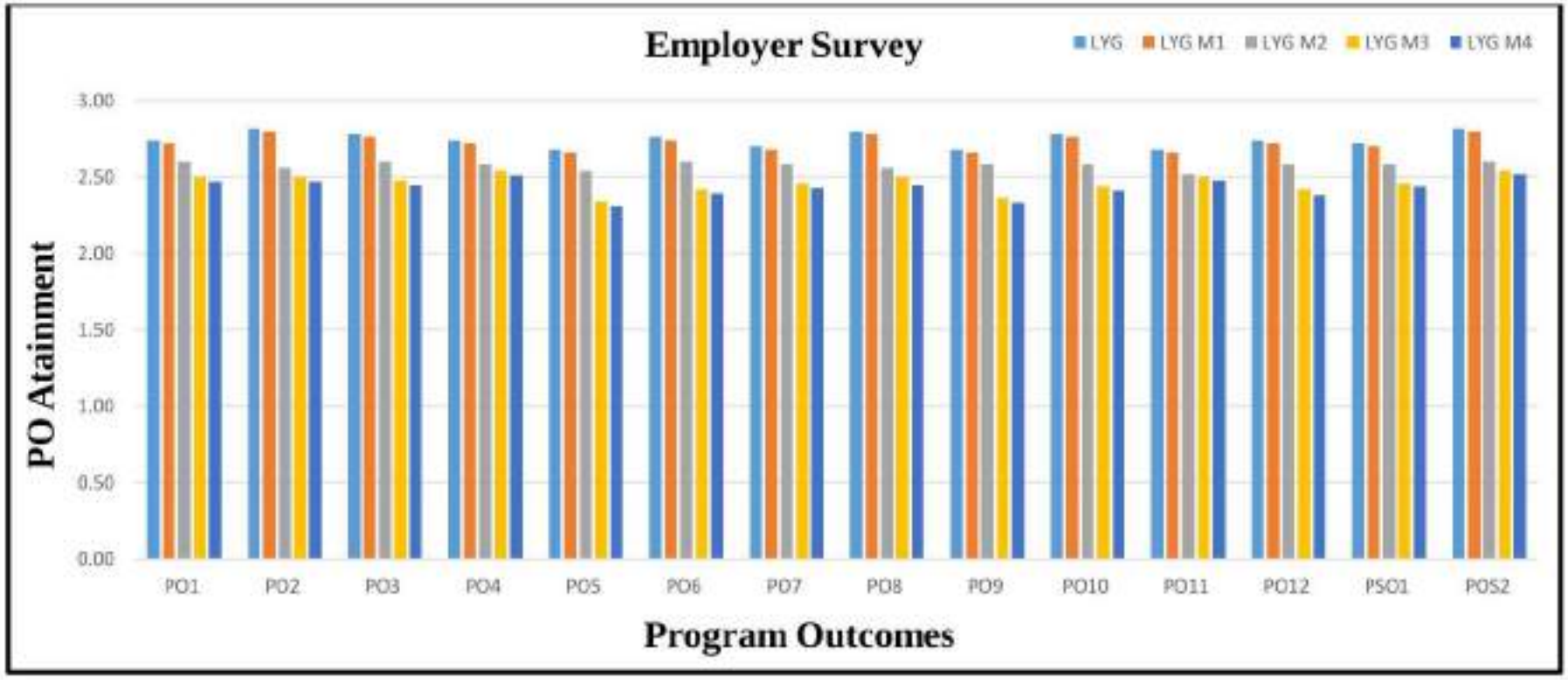
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	POS2
LYG	2.70	2.72	2.72	2.70	2.70	2.72	2.72	2.80	2.74	2.71	2.76	2.72	2.80	2.74
LYG M1	2.66	2.66	2.64	2.68	2.68	2.70	2.70	2.78	2.72	2.66	2.74	2.70	2.78	2.72
LYG M2	2.58	2.60	2.60	2.60	2.58	2.56	2.60	2.56	2.60	2.56	2.60	2.62	2.54	2.60
LYG M3	2.48	2.48	2.50	2.42	2.52	2.54	2.34	2.58	2.48	2.48	2.52	2.44	2.54	2.48
LYG M4	2.45	2.45	2.48	2.40	2.50	2.51	2.32	2.55	2.45	2.41	2.48	2.41	2.52	2.45



Employer Survey

Response of Employer's in program attainment versus program outcomes:

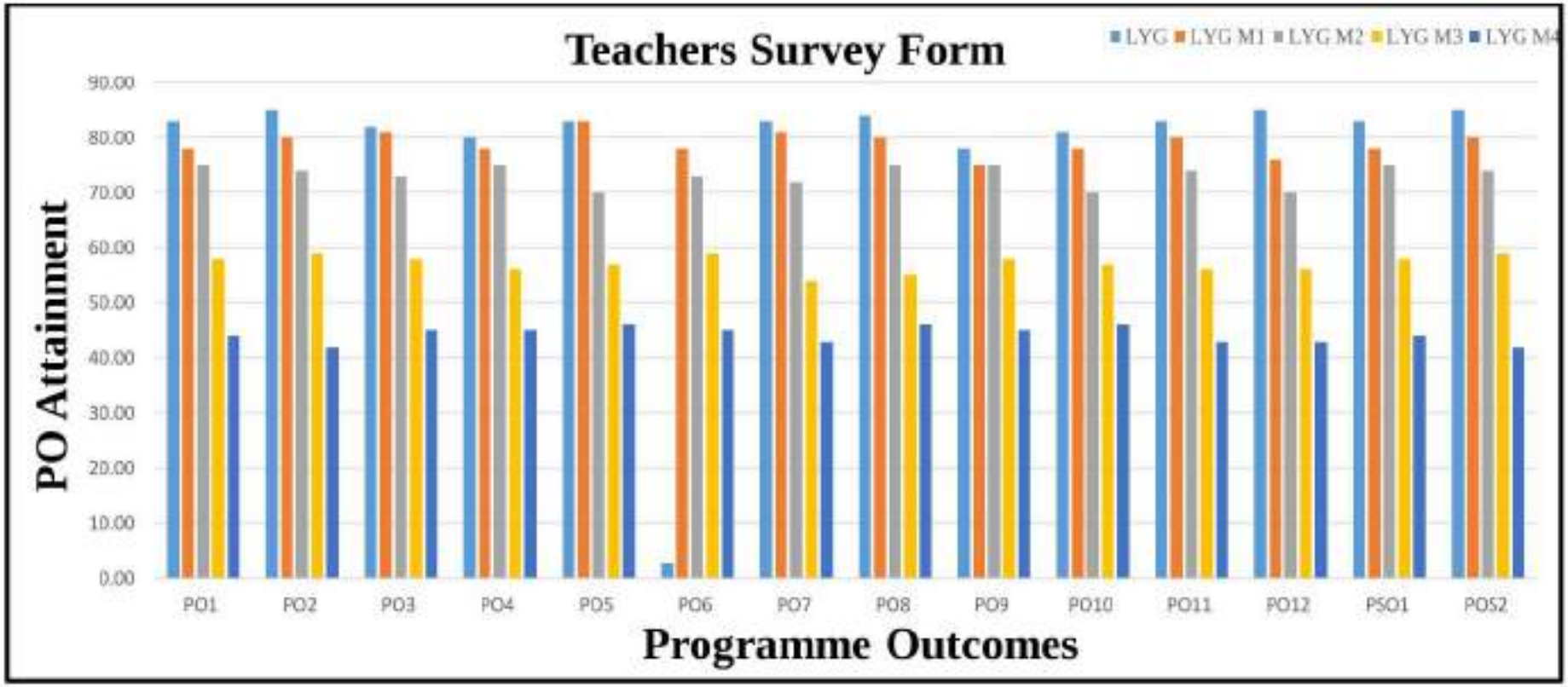
LYG	2.74	2.82	2.78	2.74	2.68	2.76	2.70	2.80	2.68	2.78	2.68	2.74	2.72	2.82
LYG M1	2.72	2.80	2.76	2.72	2.66	2.74	2.68	2.78	2.66	2.76	2.66	2.72	2.70	2.80
LYG M2	2.60	2.56	2.60	2.58	2.54	2.60	2.58	2.56	2.58	2.58	2.52	2.58	2.58	2.60
LYG M3	2.50	2.50	2.48	2.54	2.34	2.42	2.46	2.50	2.36	2.44	2.50	2.42	2.46	2.54
LYG M4	2.47	2.47	2.45	2.51	2.31	2.39	2.43	2.45	2.33	2.41	2.48	2.38	2.44	2.52



Teachers Survey

Response of Teachers' in program attainment versus program outcomes:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	POS2
LYG	83.00	85.00	82.00	80.00	83.00	2.76	83.00	84.00	78.00	81.00	83.00	85.00	83.00	85.00
LYG M1	78.00	80.00	81.00	78.00	83.00	78.00	81.00	80.00	75.00	78.00	80.00	76.00	78.00	80.00
LYG M2	75.00	74.00	73.00	75.00	70.00	73.00	72.00	75.00	75.00	70.00	74.00	70.00	75.00	74.00
LYG M3	58.00	59.00	58.00	56.00	57.00	59.00	54.00	55.00	58.00	57.00	56.00	56.00	58.00	59.00
LYG M4	44.00	42.00	45.00	45.00	46.00	45.00	43.00	46.00	45.00	46.00	43.00	43.00	44.00	42.00



Action taken Report on Stakeholder's Feedback

Institution collects stake holder's feedback for UG programs. Feedbacks from students, Alumni and employer are considered for continuous improvements in curriculum and other academic aspects. The ultimate goal of stakeholder's feedback is to get useful insights for the purpose of improvement in all aspects of teaching, learning, assessment and infrastructure facilities. Inputs collected from all the stake holders are analyzed and carried forward in Board of Studies (BOS) for approval. After getting approval in BOS, the curriculum with the incorporation of recommended changes if any is sent to Academic Council for their final endorsement. The following structure describes the significance of stakeholders for the development.

1. **Student Graduate Survey Feedback**
   - The inputs from the graduating students on design of curriculum, services extended incorporation of novel teaching technologies and their overall experience related to facilities and educational resources. However, graduating student will be submitting their overall impression related to institute and this feedback is collected.
2. **Alumni's Feedback:**
   - Alumni are considered as the ambassadors to the outside world. They are in a position to evaluate the extent to which the programme is effective in achieving the desired objective. As an alumnus they share their experience and participate in curricular updates in view of emerging technologies and tools.
   - Alumni survey is conducted, through which suggestions are provided to design syllabus which makes the students industry ready and well prepared towards competitive examinations.
3. **Employer Feedback:**

   In view of identifying the gap in the syllabus as per the requirement of various stakeholders, the Department has taken feedback on curriculum from various stakeholders. Suggestions like more smart and experiential leaning and approach to competitive exams, relevant to the framing of the syllabus of various courses were consolidated and discussed in BOS meeting. Since few courses are multidisciplinary, faculties from various departments are actively participating in the syllabus restructuring process, as being members of Board of studies. These suggestions were communicated to the chairman of the board for the proper redressal of suggestions. Following actions were prominently taken:

   1. Few emerging courses like Building Information Modelling, 3D Painting, Augmented Reality, Advanced Materials, The Intelligent Built Environment, Construction Software and Data Ecosystem, Home Analytics, Smart Buildings etc., will be introduced gradually in the curriculum.
   2. More number of site visits, state of art - industry oriented value added courses and workshops will be incorporated.
   3. Expert lectures and carrier guidance lectures will be scheduled on different topics to inculcate interest in courses.

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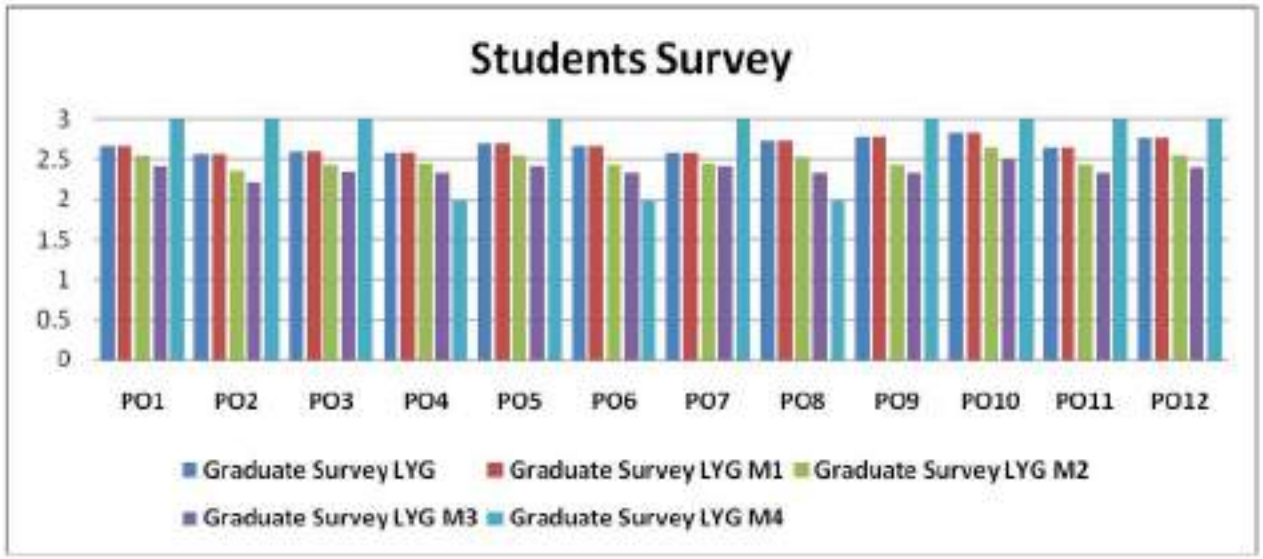
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

STUDENT SURVEY FORM

Program Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Graduate Survey LYG	2.66	2.57	2.59	2.58	2.69	2.66	2.58	2.73	2.78	2.83	2.65	2.77
Graduate Survey LYG M1	2.66	2.57	2.59	2.58	2.69	2.66	2.58	2.73	2.78	2.83	2.65	2.77
Graduate Survey LYG M2	2.55	2.35	2.43	2.45	2.55	2.44	2.45	2.53	2.44	2.65	2.43	2.55
Graduate Survey LYG M3	2.42	2.21	2.34	2.33	2.42	2.32	2.42	2.32	2.33	2.5	2.32	2.4
Graduate Survey LYG M4	3.00	3.00	3.00	2.00	3.00	2.00	3.00	2.00	3.00	3.00	3.00	3.00



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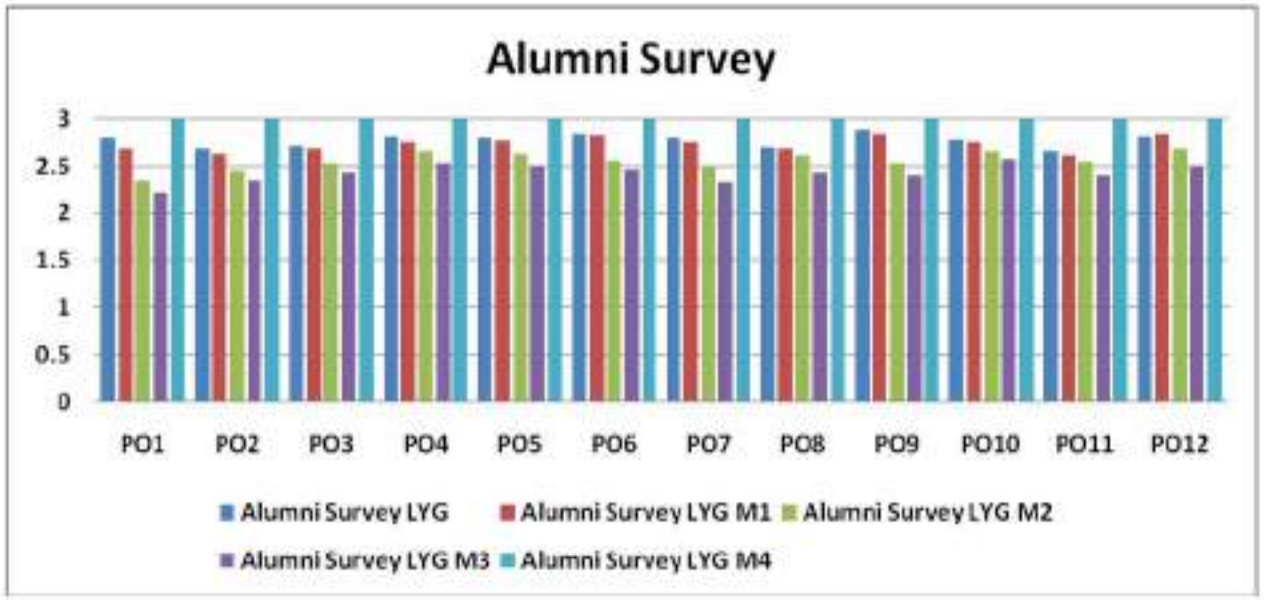
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ALUMNI SURVEY FORM

Program Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Alumni Survey LYG	2.81	2.68	2.71	2.82	2.8	2.85	2.81	2.7	2.88	2.78	2.65	2.82
Alumni Survey LYG M1	2.68	2.63	2.68	2.75	2.76	2.83	2.75	2.68	2.84	2.75	2.62	2.85
Alumni Survey LYG M2	2.35	2.45	2.53	2.65	2.63	2.56	2.5	2.62	2.53	2.66	2.55	2.68
Alumni Survey LYG M3	2.22	2.34	2.42	2.54	2.51	2.46	2.33	2.43	2.4	2.58	2.4	2.51
Alumni Survey LYG M4	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00



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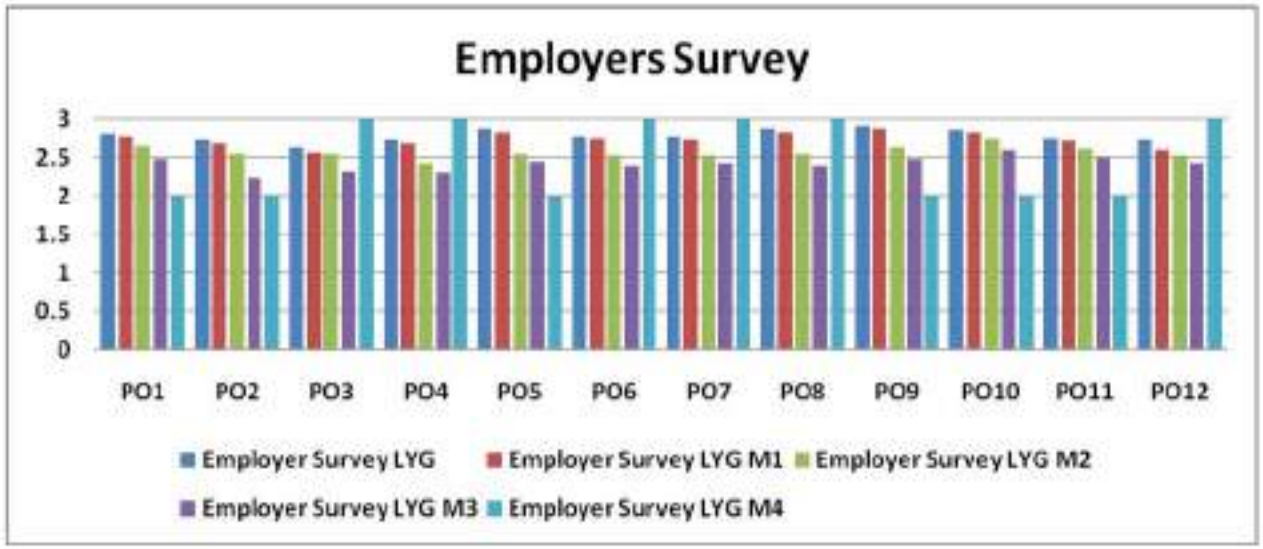
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

EMPLOYEER SURVEY FORM

Program Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Employer Survey LYG	2.81	2.72	2.62	2.72	2.88	2.78	2.78	2.88	2.91	2.86	2.75	2.72
Employer Survey LYG M1	2.78	2.68	2.56	2.68	2.82	2.75	2.73	2.83	2.88	2.82	2.71	2.6
Employer Survey LYG M2	2.65	2.55	2.55	2.43	2.55	2.53	2.52	2.54	2.62	2.75	2.61	2.52
Employer Survey LYG M3	2.47	2.23	2.31	2.3	2.44	2.4	2.42	2.4	2.48	2.6	2.5	2.43
Employer Survey LYG M4	2.00	2.00	3.00	3.00	2.00	3.00	3.00	3.00	2.00	2.00	2.00	3.00



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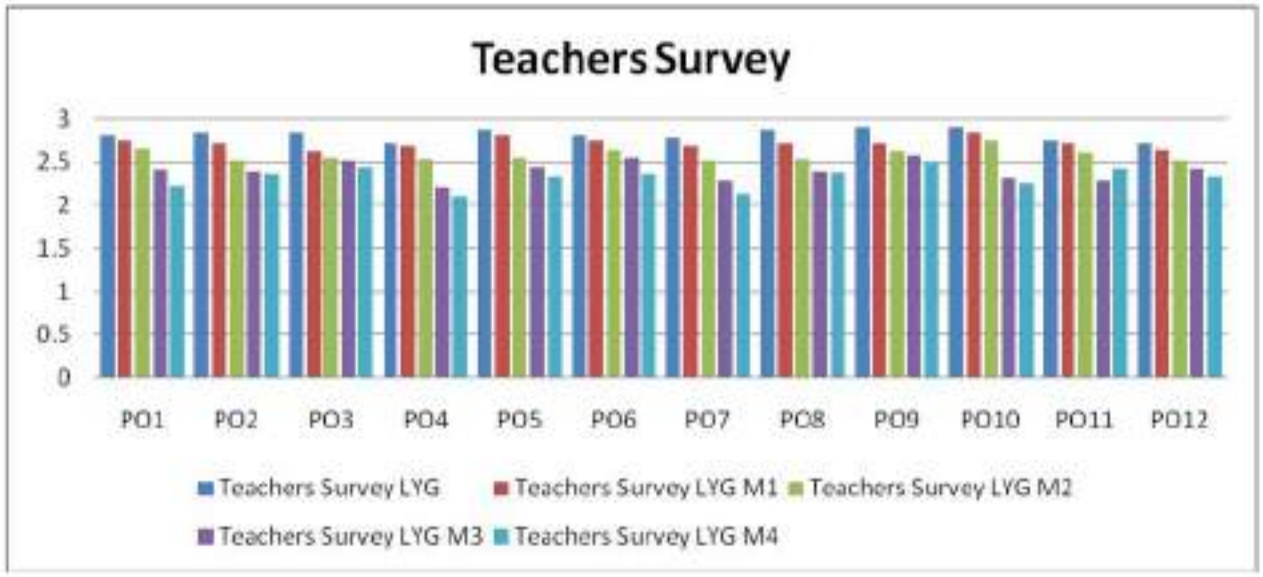
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

TEACHERS SURVEY FORM

Program Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Teachers Survey LYG	2.82	2.84	2.85	2.72	2.88	2.81	2.78	2.88	2.91	2.9	2.75	2.72
Teachers Survey LYG M1	2.75	2.72	2.62	2.68	2.82	2.75	2.68	2.72	2.72	2.85	2.71	2.64
Teachers Survey LYG M2	2.65	2.52	2.55	2.54	2.55	2.64	2.52	2.54	2.62	2.75	2.61	2.52
Teachers Survey LYG M3	2.42	2.38	2.52	2.21	2.45	2.55	2.29	2.39	2.58	2.31	2.28	2.43
Teachers Survey LYG M4	2.22	2.35	2.45	2.10	2.33	2.35	2.13	2.37	2.51	2.26	2.43	2.33



Action taken Report on Stakeholder's Feedback

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   - The inputs from the graduating students on design of curriculum, services extended incorporation of novel teaching technologies and their overall experience related to facilities and educational resources. However, graduating student will be submitting their overall impression related to institute and this feedback is collected.
2. **Alumni's Feedback:**
   - Alumni are considered as the ambassadors to the outside world. They are in a position to evaluate the extent to which the programme is effective in achieving the desired objective. As an alumnus they share their experience and participate in curricular updates in view of emerging technologies and tools.
   - Alumni survey is conducted, through which suggestions are provided to design syllabus which makes the students industry ready and well prepared towards competitive examinations.
3. **Employer Feedback:**
   - Employer feedback helps in enriching the program with industry relevant courses (Electives) which enable bridging the gap between the program curriculum and industry requirements.

4. **Faculty Feedback**
   - To promote the of the curriculum and to uplift the technical skills and potential of students to find innovative ways and to solve problems and to achieve success, the course coordinators suggested top-ups for the curriculum to boost the employability and equip the students to meet workplace challenges.

Summary of Action plan on Alumni Feedback:

- Introduced compulsory 6 week internship at reputed government agencies like DRDO, LRDE or in reputed IT companies like IBM, SAP, HCL etc for 8th semester students.
- Encouraged students at UG level to write and publish papers in national/international conferences/journals.
- Organized adequate placement and training sessions to improve placements
- To gain expertise in various domains, every semester two hand on workshops were conducted in recent technologies like Python, Data science, Cyber Security etc.
- Industrial visits were held as per the student requests to observe and learn the real-time working environment in various organizations.
- Students are encouraged to register for NPTEL courses of their choice.
- Accommodated syllabus with project based learning right from 3rd semester.

Summary of Action plan on Employer Feedback:

- The industry readiness with innovative software programs and application development skills are incorporated among students.
- Choices of electives are incorporated in the curriculum based on emerging technologies. Electives offered for students are VMware, Big Data Analytics, HP Vertica, Blockchain,Cisco Networking Academy, Schneider Electric, SAP next-Gen, Quest Global Engineer, and Automation Anywhere (IIoT). Labs associated with these electives enrich technical knowledge of the students.
- Many activities like Hackathons, KSTA project proposals, Toycathon idea submissions, External Competitions, QuBytes 20 - State Level Inter collegiate Tech Fest are structured for students to participate and stimulate their learning.
- Department - wise Resume writing sessions, mock interviews and various aptitude training were conducted.

Summary of Action plan on Student Feedback:

- Every semester five industry expert talks have been held to provide insights on recent advancements like Block-Chain, Machine learning, Data Science, Cyper Security etc. to gain more knowledge about the trending technologies.
- Student projects were sent to Git-hubs to expose their practical and technical knowledge.
- Students were made to participate in various technical symposiums and Hackathons.
- Scheduled the industrial visits with various companies like Mindtree, IBM, Wipro, Cerner, SAP and many more to know the advanced research and developments, core programming techniques, and practical working environments to meet the industrial needs .
- Many new Courses like mobile application development, Internet of Things, Data Science, ARM Processor, Computational Intelligence, Soft computing, Web of things are included in the curriculum.

Summary of Action plan on Faculty Feedback:

- Every semester five industry expert talks have been held to provide insights on recent advancements like Block-Chain, Machine learning, Data Science, Cyper Security etc. to gain more knowledge
- As suggested by the BOS members integrated courses and value added courses were included in every semester.
- Trending technologies-based courses are included in the curriculum, thereby IoT, Mobile Application Development were added. Data analytics is incorporated as a professional elective to gain problem-solving skills in a real-time environment and to understand the technological advancements in the last couple of years that transformed the process of usage of data
- Courses like essential English, life skills for engineers, introduction to economics are introduced for students.
- Career based tracks for technical creativity and analytical thinking skills are provided to students to solve various software related issues. The sequence of core subjects learnt by the students are as follows: Third semester- UNIX system programming, Data structures with C , Fourth semester- OOP with Java, ARM Processor, Computer Organization - Fifth semester-Finite Automata and Compiler Design, Analysis and Design of algorithms, Python programming lab with mini projects.
- The following Professional electives are included -Parallel Processing , Advanced Data Structures ,Digital image and video processing
- Sixth semester- Web Frameworks and Technologies, Data mining and Machine Learning. The following Professional electives are included - Social Network Analysis , Soft computing ,Cloud Computing ,Agile Methodologies and Web of Things and Quantum cryptography

NEW HORIZON COLLEGE OF ENGINEERING

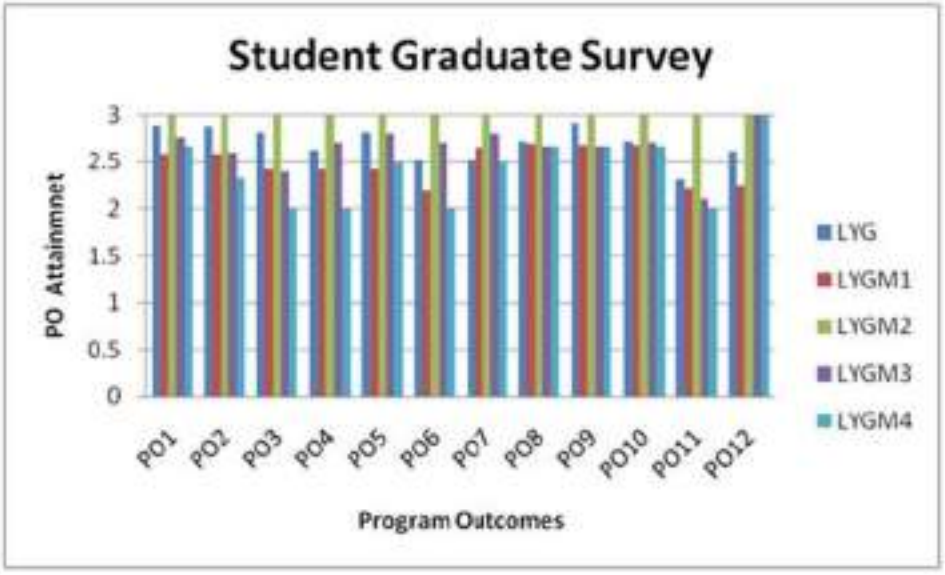
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Stakeholders' Feedback Analysis

Student Graduate Survey

Response of Graduate students in program attainment versus program outcomes:

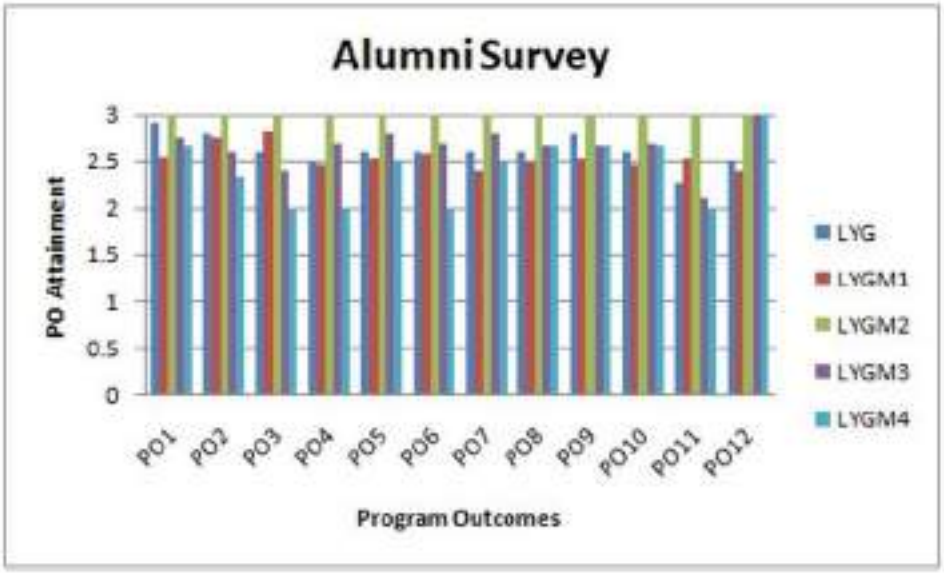
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Student Graduate Survey	LYG	2.89	2.87	2.81	2.62	2.81	2.52	2.52	2.72	2.91	2.72	2.32	2.61
	LYGM1	2.58	2.58	2.42	2.42	2.42	2.20	2.65	2.69	2.67	2.68	2.22	2.25
	LYGM2	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
	LYGM3	2.76	2.60	2.40	2.70	2.80	2.70	2.80	2.66	2.66	2.70	2.10	3.00
	LYGM4	2.66	2.33	2	2	2.5	2	2.5	2.66	2.66	2.66	2	3



Alumni Survey

Response of Alumni students in program attainment versus program outcomes:

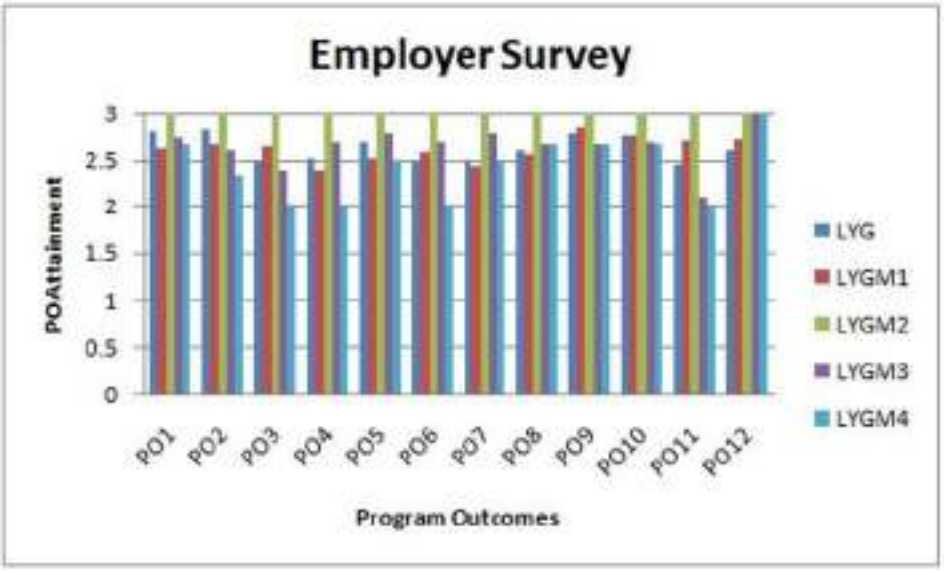
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Alumni Survey	LYG	2.91	2.8	2.6	2.48	2.6	2.6	2.6	2.6	2.8	2.6	2.28	2.5
	LYGM1	2.54	2.76	2.82	2.46	2.52	2.58	2.4	2.48	2.52	2.46	2.52	2.4
	LYGM2	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
	LYGM3	2.76	2.60	2.40	2.70	2.80	2.70	2.80	2.66	2.66	2.70	2.10	3.00
	LYGM4	2.66	2.33	2	2	2.5	2	2.5	2.66	2.66	2.66	2	3



Employer Survey

Response of Employers in program attainment versus program outcomes:

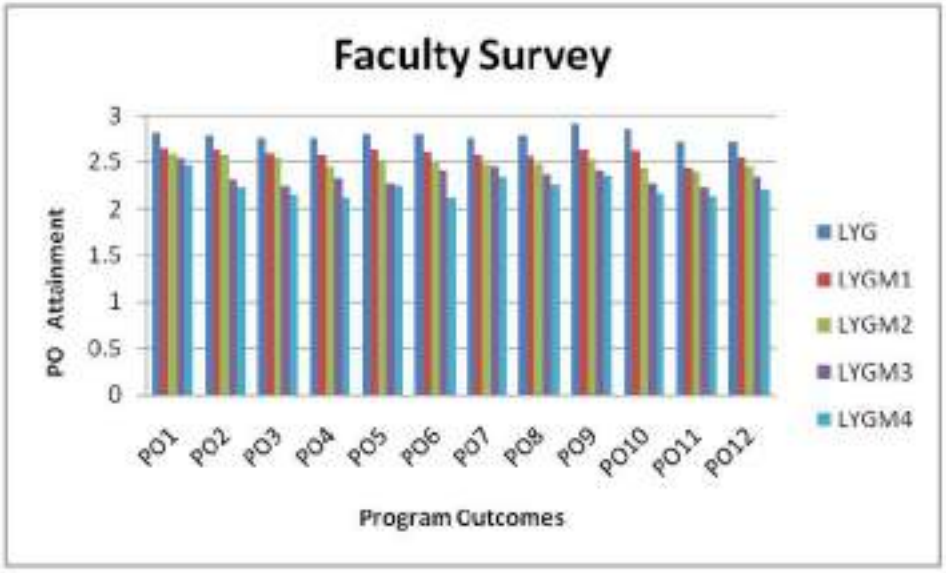
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Employer Survey	LYG	2.81	2.83	2.5	2.52	2.7	2.5	2.5	2.6	2.8	2.78	2.46	2.6
	LYGM1	2.62	2.68	2.64	2.4	2.52	2.58	2.44	2.56	2.86	2.78	2.72	2.74
	LYGM2	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
	LYGM3	2.76	2.60	2.40	2.70	2.80	2.70	2.80	2.66	2.66	2.70	2.10	3.00
	LYGM4	2.66	2.33	2	2	2.5	2	2.5	2.66	2.66	2.66	2	3



Faculty Survey

Response of Faculty members in program attainment versus program outcomes:

		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Faculty Survey	LYG	2.81	2.78	2.76	2.75	2.80	2.79	2.75	2.78	2.91	2.85	2.71	2.72
	LYGM1	2.65	2.64	2.59	2.58	2.63	2.61	2.58	2.57	2.64	2.62	2.43	2.56
	LYGM2	2.60	2.58	2.56	2.45	2.51	2.49	2.47	2.48	2.53	2.44	2.39	2.45
	LYGM3	2.54	2.31	2.25	2.33	2.28	2.41	2.45	2.37	2.41	2.28	2.23	2.34
	LYGM4	2.46	2.23	2.14	2.11	2.25	2.12	2.34	2.26	2.36	2.16	2.13	2.21



Action taken Report on Stakeholders' Feedback

Institution collects feedback on curriculum and other academic aspects from different stake holders such as Students, Parents, Alumni and Employers for UG programs. Feedback collected from stakeholders are considered with special care and attention. The decisive goal of stakeholder's feedback is to get useful insights for the purpose of improvement in all aspects of teaching, learning, assessment and infrastructure facilities. The suggestions received through the stakeholder's feedback are put forth in Board of Studies (BoS). In BoS, the suggestions are discussed and few are recommended after feasibility study. The recommended changes are submitted to Academic Council for final endorsement.

The following structure describes the significance of stakeholders for the development.

1. **Students' Feedback:**
   - The inputs from the graduating students on design of curriculum, services extended incorporation of novel teaching technologies and their overall experience related to facilities and educational resources. However, graduating student will be submitting their overall impression related to institute and this feedback is collected.

2. **Alumni's Feedback:**
   - Alumni are considered as the ambassadors to the outside world. They are in a position to evaluate the extent to which the programme is effective in achieving the desired objective. As an alumnus they share their experience and participate in curricular updates in view of emerging technologies and tools.
   - Alumni survey is conducted, through which suggestions are provided to design syllabus which makes the students industry ready and well prepared towards competitive examinations.

3. **Employers' Feedback:**
   - Employer feedback helps in enriching the program with industry relevant courses (Electives) which enable bridging the gap between the program curriculum and industry requirements.

4. **Faculty's Feedback:**
   - Feedback is collected from the faculty members, for the courses they have taught and same is considered when redesigning POs, PSOs and curriculum to identify the gaps in terms of missing topics, inclusion of new technology development in the Electronics and Communication Engineering.

Feedback on Curriculum:

The Department collects feedback/suggestions on curriculum from various stakeholders to improve the students' learning outcomes. The feedback/suggestions include like experimental learning, new technologies which are predominant in outside world, industry seminars & workshops, approach to competitive exams and all other relevant points are summarized. The consolidated points which attributed in framing of the syllabus of various courses are discussed in BOS meeting. Since few courses are multidisciplinary, faculty members from various departments are actively participating in the syllabus restructuring process, as being members of Board of studies. These suggestions were communicated to the chairman of the board for the proper redressal of suggestions.

Following actions were taken:

1. Multidisciplinary courses such as "Programming with data structures", "Python and R programming", have been introduced.
2. Industry sponsored laboratories are established, and courses like "Routing and Switching", "Industrial automation", "IIOT", are offered.
3. Syllabus of selected core courses is revised to improve the attainment of POs.
4. More number of Industrial visits, Invited Talks/Guest lectures, Value added courses and Workshops are conducted.
5. Expert guidance lectures and career guidance lectures are conducted on different topics, to inculcate interest in subjects.
6. A vast set of electives are offered to improve the employability skills.
7. Courses on Communication Skills, Professional Ethics, and Environmental Science are included, to improve non-technical POs.
8. External training programs are conducted to cover some of the practical course topics from industry point of view.

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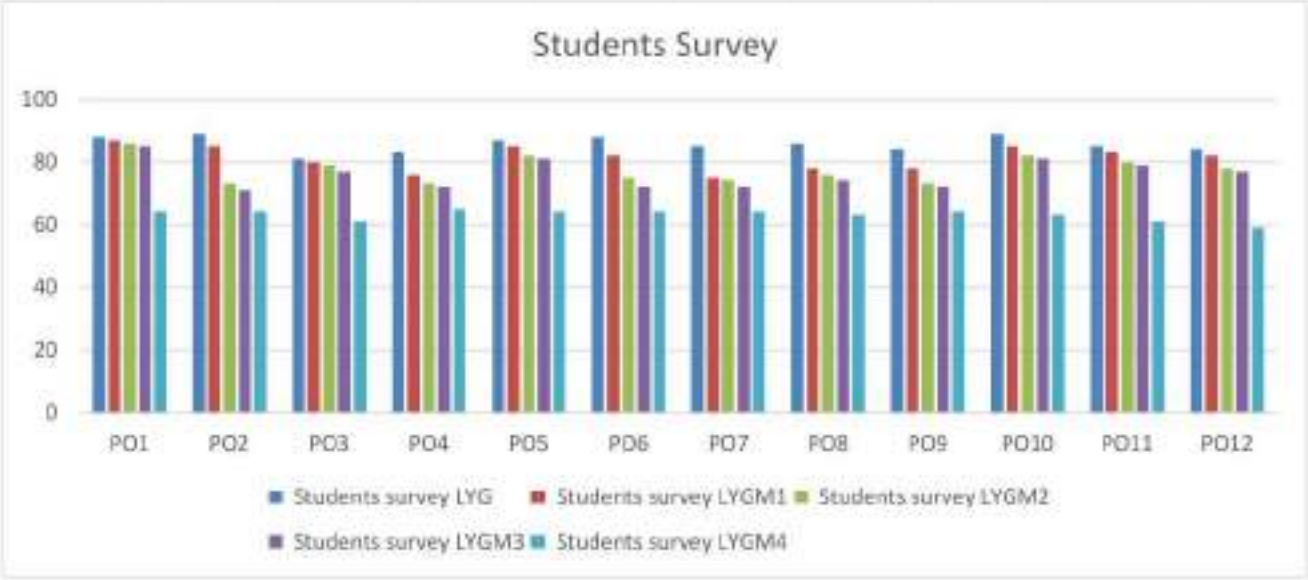
DEPARTMENT OF EEE

STUDENTS SURVEY FORM

Program Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Students survey LYG	88	89	81	83	87	88	85	86	84	89	85	84
Students survey LYGM1	87	85	80	76	85	82	75	78	78	85	83	82
Students survey LYGM2	86	73	79	73	82	75	74	76	73	82	80	78
Students survey LYGM3	85	71	77	72	81	72	72	74	72	81	79	77
Students survey LYGM4	64	64	61	65	64	64	64	63	64	63	61	59



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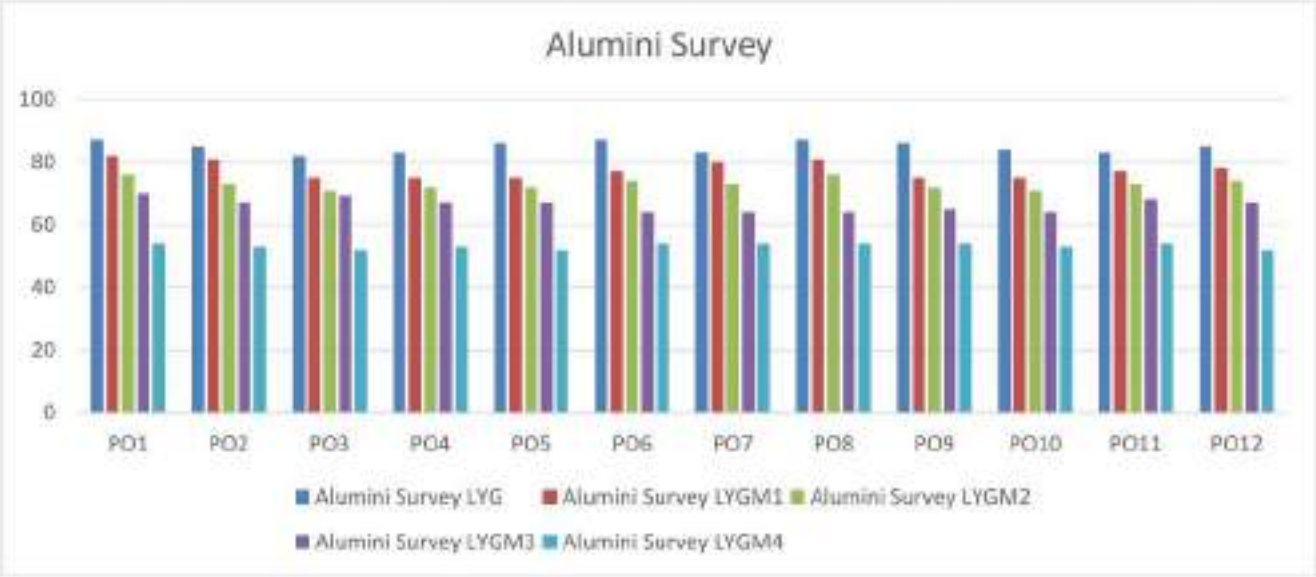
DEPARTMENT OF EEE

ALUMINIS SURVEY FORM

Program Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Alumini Survey LYG	87	85	82	83	86	87	83	87	86	84	83	85
Alumini Survey LYGM1	82	81	75	75	75	77	80	81	75	75	77	78
Alumini Survey LYGM2	76	73	71	72	72	74	73	76	72	71	73	74
Alumini Survey LYGM3	70	67	69	67	67	64	64	64	65	64	68	67
Alumini Survey LYGM4	54	53	52	53	52	54	54	54	54	53	54	52



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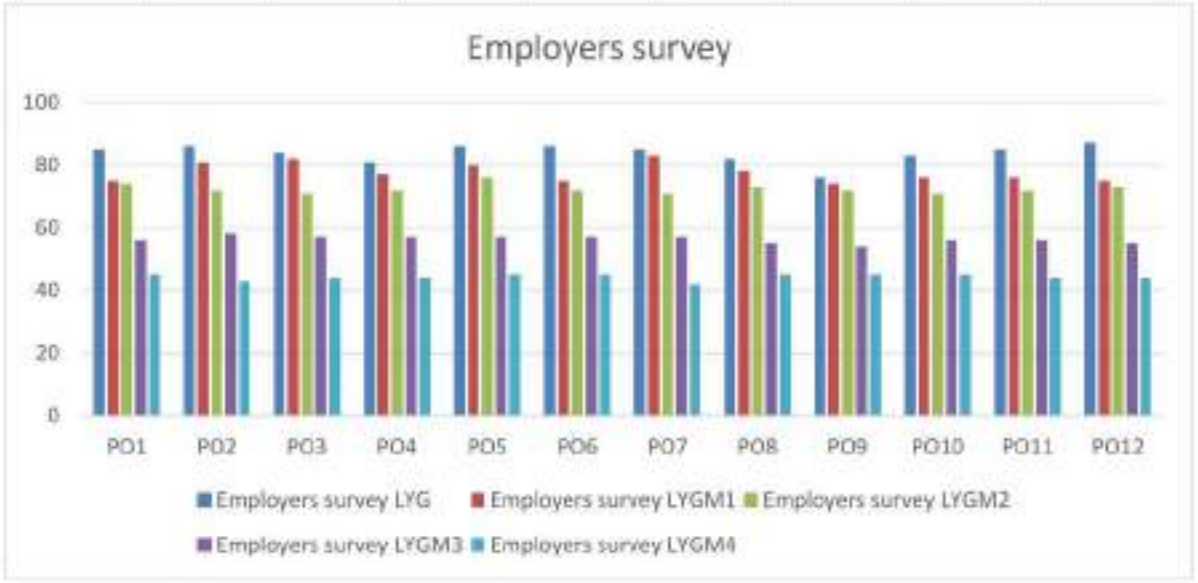
DEPARTMENT OF EEE

EMPLOYERS SURVEY FORM

Program Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Employers survey LYG	85	86	84	81	86	86	85	82	76	83	85	87
Employers survey LYGM1	75	81	82	77	80	75	83	78	74	76	76	75
Employers survey LYGM2	74	72	71	72	76	72	71	73	72	71	72	73
Employers survey LYGM3	56	58	57	57	57	57	57	55	54	56	56	55
Employers survey LYGM4	45	43	44	44	45	45	42	45	45	45	44	44



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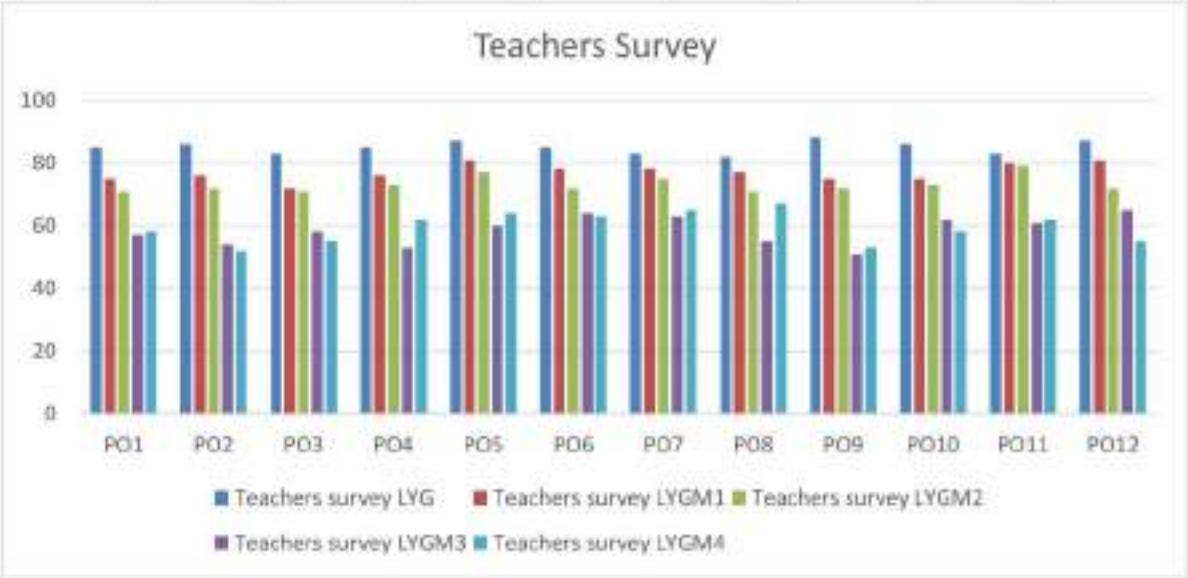
DEPARTMENT OF EEE

TEACHERS SURVEY FORM

Program Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Teachers survey LYG	85	86	83	85	87	85	83	82	88	86	83	87
Teachers survey LYGM1	75	76	72	76	81	78	78	77	75	75	80	81
Teachers survey LYGM2	71	72	71	73	77	72	75	71	72	73	79	72
Teachers survey LYGM3	57	54	58	53	60	64	63	55	51	62	61	65
Teachers survey LYGM4	58	52	55	62	64	63	65	67	53	58	62	55



Analysis on stakeholder's feedback forms

The feedback from students, teachers, alumini and employers were collected and analysed. The course faculty reviews on syllabus formation, pedagogy approaches, course content, required modifications and recent advancement in the specific courses were collected at the end of each semester.

The student's feedback includes the survey on syllabus content corresponding to program outcomes. The alumini feedback includes syllabus content related to their job, required modifications in the syllabus, college infrastructure and lab facilities, training and placement, library, and canteen facilities. The employer feedback gives the information about the syllabus relevant to industry, the strength of our students in various domain, technical skills, moral and ethical values, communication and learning skill.

The suggestions were discussed in the Program Assessment Committee (PAC) and Department Advisory Board (DAB). The possible and required modifications has been carryout in the curriculum. The discussions and suggestions given by PAC and DAB were further scrutinized in the Board of Studies meeting (BoS).

Action Taken on Feedback from the stack holders

Based on the feedback form analysis of various stake holders the consolidated data were discussed in different forums. The feedback on curriculum aspects and valuable suggestions on curriculum were incorporated in the subsequent BoS meeting.

The college established New Horizon Quality Assessment and Skill Development Center (NHQADC) to improve the quality of education, competency level of faculty and to improve the technical and co -curricular skills of students. The objectives of NHQADC are as follows:

- To assess the quality of all the members in the institutions.
- To provide competence in skills and techniques for qualitative transactions
- To build the required competent capabilities in each member
- To nurture the potential in each member to invent and innovate.
- To identify the specific areas of interest for capacity building.
- To organize faculty development programs like refresher and orientation courses for professional development.

The college encourages the faculty to pursue higher education, authorizing books, and publishing papers in journals and filing patents in various domains. The department conducts seminars/symposia and workshops in every academic year. The department supports student involvement through seminars, student's innovations for the further development of curriculum.

The College follows a continuous review system of the curriculum. The functioning of various committees of the College strengthens the quality of curriculum and enhancement measures to ensure the effective development of curricula. The college makes efforts to integrate socially relevant issues into the curriculum with the help of different cells functioning in the college like Placement Cell, Anti-Ragging Cell, Institute interaction cell, Alumini cell, Life skills department, Entrepreneurship development and professional counselling cell.

Curriculum is enriched through mini projects/ student conferences/symposiums and innovative club in the college. Students are also introduced to engineering as a profession that requires not only technological skills but also an ethical orientation, of the need for lifelong learning, and of the importance of Basic Sciences and Humanities courses.

There are different industry sponsored labs such as Schneider Electric, CISCO, vmware, SAP, QUEST, VERTICA etc., with international collaboration facilities are provided to improve the technical skills of students which provides knowledge on the recent development of specific domains. The professional elective and open elective courses are introduced as per the recent development and industry requirement. The implemented curriculum aspects which enrich the curriculum are:

1. Flexible and Choice Based Credit System to learn soft core elective courses, professional elective courses and open elective courses offered across the departments.
2. Value added courses.
3. Courses on communication skills / Professional ethics / Environmental Engineering, and Employability Skills.
4. Design experiments in many laboratory courses thereby stimulating creativity and innovation in students.

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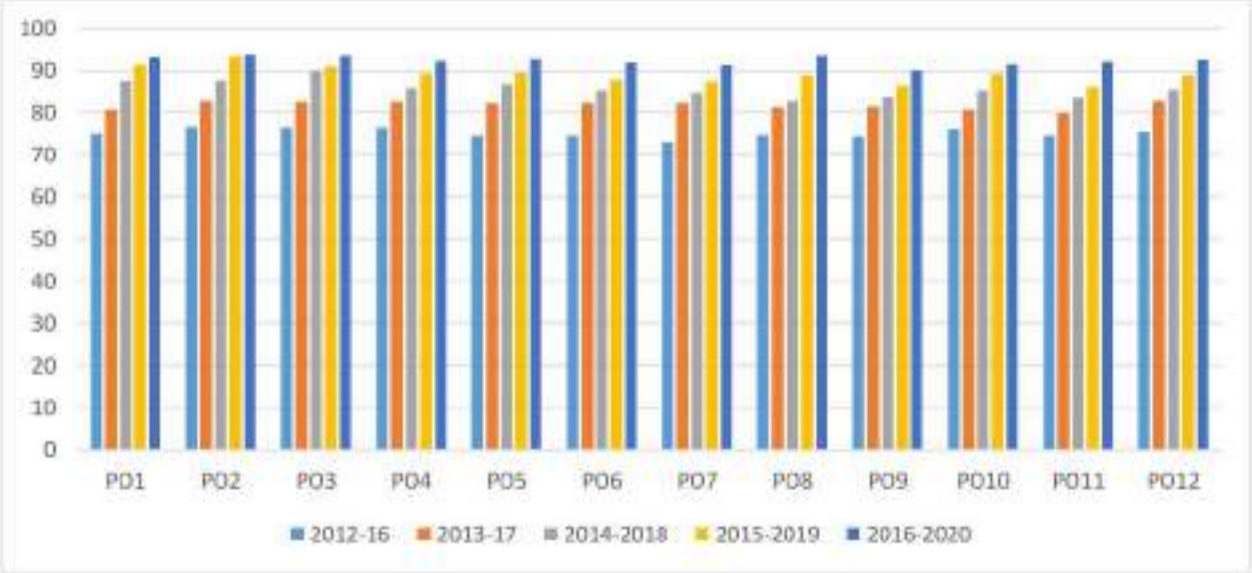
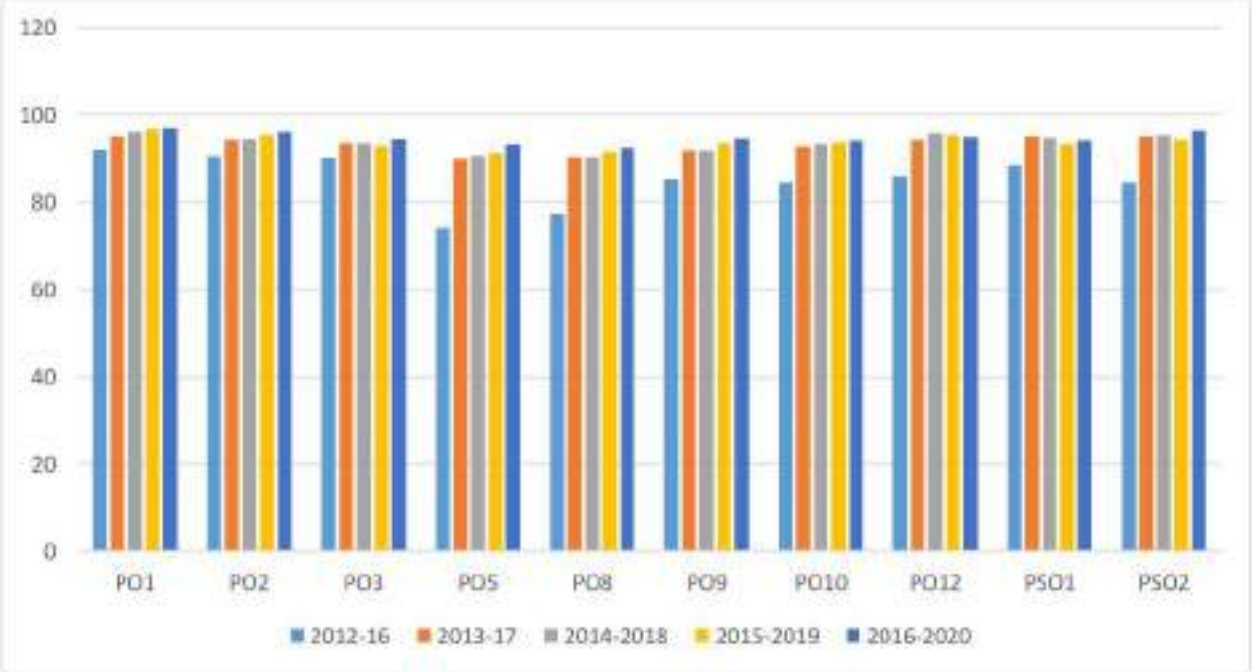
DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

Stakeholders Feedback Analysis

EMPLOYER FEEDBACK



ALUMNI FEEDBACK



GRADUATE FEEDBACK

Alumni feedback: 2016-2017 AY

Based on the alumni feedback taken during the alumni meet and also whenever they visit the college, the following are the key takeaways consolidated

- More industrial visits can be conducted, which helps in the development of student's awareness on job functions in the industries, attitude to adapt industrial environment, proper practical and relevant knowledge, skills and competencies etc.
- To accommodate syllabus with project based learning.
- To conduct expert talk on latest updates in cloud computing, Software development skills, Basic vSPhere Networking based.
- To motivation the students to work more on lab experimentations, innovation and research, concept of paper writing and patenting.
- To enhance students' technical expertise in phase with the curriculum.

Employer feedback: 2016-2017 AY

- Seminars are the most proficient method to get ready for placements, personality development, investigating abilities, employability skills, technical skills to be coordinated for students to improve the degree of performance
- The curriculum can bridge the gap between industry and academic
- The Syllabus can include courses on Project based learning
- Students can be more exposure to open source tools
- More opportunity should be given to students to active participation in technical events and expose the student ability to industry experts.
- The curriculum can help in building entrepreneurial motives, which helps the students for starting their ventures
- Buddies from college can provide inputs to current students on recent advances in research, Industry needs and area of expertise on courses like Data Structures, Algorithms, programming paradigm, useful resources in the web for self-learning in coding, Tips for cracking the technical / coding round test and many more.

Course Coordinators (Faculty) Feedback: 2016-2017 AY

To enhance the curriculum and edify knowledge of the students on current modern prerequisites, the course coordinators proposed to fuse the gaps identified in the syllabus endorsed for the third, fourth, fifth, and sixth semester

- The COs and POs should be mapped accordingly and also included in the syllabus and lesson plan for the better understanding
- A uniform format to represent the name of the textbook and reference books and also changed it as per IEEE standard format.
- The contents should maintain Career based tracks, the student must be empowered with basic knowledge by including the very in-depth fundamental knowledge into the syllabus of respective subjects

Student Feedback: 2016-2017 AY

- After receiving feedback from students, various expert talks can be provided insights on the recent advancements Data Science and Machine Learning , IoT, and Transactions Management in Database, etc. to gain more knowledge about the trending technologies
- As per the recommendations of the students, guest talk on entrepreneur can be conducted.

- Selection of electives by students based on their career path.
- Students was given good opportunities, awareness about best practices and practical working environment through frequent industrial visits.
- Increase in the number of industrial visits can help students to identify their prospective area of work like software development, testing, design and automation and many more.
- For Gate and competitive exams, students suggested courses like FAFL to be included in the curriculum during their initial $5^{th}/6^{th}$ semesters.
- Self study topics beyond syllabus can be listed and circulated with students.

Action plan 2017-2018 based on 2016-2017 Feedback summary:

Based on the Alumni feedback:

- To improve students' learning in a more interactive, topic-specific way, workshops on the latest updates in Data Science & Machine Learning and IoT can be conducted.
- The industry readiness with recent software projects and application advancement is required to students to expertise in different programming like C, C++, C#, JavaScript, VB, NET, R, PHP, Java, and python.
- To accommodate syllabus with project based learning.
- Expert talk on the latest updates in cloud computing, Software development skills, Basic vSPhere Networking based on alumni suggestions.
- Many seminars and symposium with technical and non-technical student engagement activities were conducted to enhance students' technical expertise.

Based on the Employer feedback:

- In all courses, the fifth chapter – 20% of syllabus every semester is handled by Industry experts. All labs have minimum 3 experiments beyond syllabus to incorporate more curiosity and hands-on with the subject.
- Very good exposure to open source tools.
- Buddy talks were organized to help current students on recent advances in research, Industry needs and area of expertise on courses like Data Structures, Algorithms, programming paradigm, useful resources in the web for self-learning in coding, Tips for cracking the technical / coding round test and many more.

Based on the Student Feedback:

- Mini project contact hours were increased as per the requirement of the semester.
- Various technical event were organized to help current students to increase the problem solving ability and which indeed reframed and refined the Lab program questionnaires statements
- As we maintain Career based tracks, the student were empowered with basic knowledge by including the very in-depth fundamental knowledge into the syllabus of respective subjects

Based on the Course Coordinator (Faculty) Feedback:

- As per the need of the Coordinator, the COs and POs is mapped accordingly and also included in the syllabus and lesson plan for the better understanding
- To have a uniform format to represent the name of the textbook and reference books and also changed it as per IEEE standard format.
- Advanced concepts relevant to industry readiness and expectations are incorporated in the syllabus. Thereby Finite Automate and Formal Language course with JFLAP were included.
- Mapping of PO-12 also addressed in the syllabus as per the needs
- The syllabus should contain an integrated course were included in every semester.
- To have a balance with the Theory and Lab courses per semester, accordingly the subject were swapped from and to as needed, here in specific Computer network from 5^{th} semester was pushed to sixth and JAVA and J2EE was moved to early semester.
- They should be consistence with name of the subject and the syllabus in it.
- Lastly , also recommended to refined and reframe few of the syllabus in the curriculum:
    - Software Engineering and Best Practices
    - Database Management Systems
    - Operating Systems
    - Design and Analysis of Algorithm
    - Computer networks
    - Web and internet programming
    - JAVA and J2EE
    - Dataware Housing and Data Mining
    - File Structures
    - Cryptography and Network Security
    - Software Testing and Automation

Alumni feedback: 2017-18 AY

Based on the alumni feedback taken during the alumni meet and also whenever they visit the college, the following are the key take away consolidated

- To include trending subjects like Machine learning, Data Science, Mobile application development to be included in early semesters to provide the fundamentals of statistical knowledge, practical applications and related components.
- To provide useful resources from the web for self learning in coding, tips for cracking the technical / coding round test, programming paradigm and many more.
- To increase the number of workshops that can provide knowledge beyond syllabus. Hands-on workshops on recent trends like cyber security and block chain, Internet of Things, Machine Learning, Cloud computing, Mobile application development, Devops, data analytics and many more can collaborate their ideas, deliver, share recent trends, advancements and research in an open forum.
- To accommodate syllabus with project based learning.
- To insist on self study component that can help students to improve their communication skills as well as they can stimulate lifelong learning activities.
- To offer MOOC Courses, NPTEL, Coursera, Harappa, along with Open Source courses to students for self learning the content beyond syllabus.
- To focus more on lab experimentations, innovation and research, concept of paper writing and patenting.
- To include mainly open source tools usage in labs like VMware, NS2, Anaconda, Java etc to help students come out of proprietary software's. Open source tools are widely used in core companies.
- To invite guest lectures on latest updates in the fields of Data Science & Machine Learning, cloud computing, Software development skills, block chain, Software Testing Tools and Applications.

Employer feedback: 2017-18 AY

- Career based tracks for technical creativity and analytical thinking skills can be provided to students to solve various software related issues.
- Wide choice of electives can be incorporated in the curriculum based on emerging technologies. Labs associated with these electives can enrich technical knowledge of the students.
- The industry readiness with innovative software programs and application development are required, hence students must specialize in multiple programming languages like C, C++, C#, java, python etc.

- Introduce domain specific teaching, learning curriculum from 3rd semester onwards for technical excellence in trending technologies
- Domain specific industrial visits can help students to create curiosity and exposure for industry readiness.
- Project based learning
- Exposure to open source tools
- Active participation in technical events and expose the student ability to industry experts.
- Courses like Computer organization and operating systems can be included in third and fourth semesters respectively to provide the fundamental knowledge regarding the architectures and related components.
- Buddies from college can provide inputs to current students on recent advances in research, Industry needs and area of expertise on courses like Data Structures, Algorithms, programming paradigm, useful resources in the web for self learning in coding, Tips for cracking the technical / coding round test and many more.
- Recommendations to include subjects like Essential English, Ethics and life skills for students.
- Seminars/ workshops on "How to prepare for placements, coding tips, debugging skills, technical concepts on programming" can be organised for students for smart performance.
- Students must be focused on projects/technical seminars on recent emerging trends to adhere to industry standards rather than reading core subjects during their 8th semesters.

Student Feedback: 2017-18 AY

- Selection of electives by students based on their career path.
- Frequent industrial visits can help students with good opportunities, awareness about best practices and practical working environment.
- Increase in the number of industrial visits can help students to identify their prospective area of work like software development, testing, design and automation and many more.
- For Gate and competitive exams, students suggested courses like FAFL to be included in the curriculum during their initial 5th/6th semesters.
- Students requested to organize industrial visits with core companies like VMware, SAP, IBM, Wipro, Werner, and many more to know the advanced research and developments, core programming techniques and practical working environments to meet the needs.
- Self study topics beyond syllabus can be listed and circulated with students.

- Motivational talks on Stress management, Conflict handling, Team work, Team building and Study skills on research and developments, patenting, Entrepreneurship can strengthen ideas and provide initiative paths to students.
- With increase in number of workshops on "trending technologies and technical jobs for the next 5 years" may help students to downstream their career paths
- Quiz based on aptitude, pattern matching, hackathon can be conducted to improvise student's attention.

Course Coordinators (Faculty) Feedback: 2017-2018 AY

To enrich the curriculum and expose the students to the current industrial requirements, the course coordinators suggested incorporating the following in the syllabus prescribed for forth coming semesters.

- Track wise curriculum with various courses must be framed from the initial semesters.
- Computer organization and operating systems must be included in third and fourth semesters respectively to provide the fundamental knowledge regarding the architectures and related components.
- Course contents of subjects like data structures with C, object oriented programming, machine learning, advanced java, design and analysis of algorithms, software engineering and project management must be revised for contents and reframed.
- Appropriate mathematical/statistical concepts must to be included in the syllabus for Machine Learning.
- Recommendations to introduce discrete mathematics and graph theory and Java & J2EE in the 4^{th} semester to build strong analytical background.
- No programming language to be enforced on students.
- Software testing subject can have lab associated for better understanding.
- Courses like mobile application development, NoSQL, Internet of Things, UNIX system programming, automata theory and formal languages, file structures, User interface design, virtual reality, C# and .net, computer graphics with OpenGL and soft computing can be included as new courses in the curriculum.
- Advanced concepts in C# & .net can to be included in the syllabus.
- The courses like machine learning and data science has overlapping content, recommendation to give more importance to statistics in data science.
- The reference books of latest edition can be recommended as text books.
- Mini project component and technical seminars can be incorporated in the syllabus.

Action Plan for 2018-19 based on 2017-18 feedback summary

Based on the Alumni feedback:

- Students study subjects like Computer organization, Operating systems, Mobile application development, python, data Science, Machine Learning at their initial semesters to strengthen their technical skills.
- Buddy talks were organized to help current students on recent advances in research, Industry needs and area of expertise on courses like Data Structures, Algorithms, programming paradigm, useful resources in the web for self learning in coding, Tips for cracking the technical / coding round test and many more.
- Seminars/ workshops on How to prepare for placements, Data Structures and its Applications, Object Oriented Programming, Design Patterns, Python Programming, Mobile application development, IoT Challenge 2019, Devops and many more are organized.
- 8th semester curriculum are reframed with project based learning and no core subjects. This would enable students to concentrate better and excel in exhibiting their skills according to industry standards.
- Self study Report is a continuous internal evaluation (CIE) component for one subject at least every semester. This evaluates them to do extra referencing based on their area of interest. Students will also give a presentation for evaluation purpose. This improves their presentation skills there by stimulates lifelong learning as a team. Self study topics beyond syllabus are encouraged. Self study topics beyond syllabus are listed in the lesson plan and circulated with students.
- Many MOOC Courses, NPTEL, Coursera, Harappa, Open Source courses are complied for students to deliver content beyond syllabus. MOOC/NPTEL courses are made mandatory for 5th semester students and 3rd semester students are also motivated to actively participate.
- Much innovative teaching pedagogy is incorporated to improve the capability of the students. Few initiatives are
    - Originality and Creativity
    - The change is brought by using various innovations
    - Constancy in their work
    - Knowledge used and developed in academics, research and patenting
- Open sources workshop are organized to enable students to come out of proprietary software's. Open source tools used in lab like VMWare, NS2, Anaconda, Java etc

Based on the Employer feedback:

- Courses like essential English, life skills for engineers, introduction to economics are introduced for students in the syllabus.

- Wide choices of electives are incorporated in the curriculum based on emerging technologies. Electives offered for students are VMware, Big Data Analytics, HP Vertica, Cisco Networking Academy, Schneider Electric, SAP next-Gen, Quest Global Engineer, and Automation Anywhere (IIoT). Labs associated with these electives enrich technical knowledge of the students.

- The industry readiness with innovative software programs and application development skills are incorporated among students. Hence students are specialized in multiple programming languages like C, C++, C#, java, python etc.

- Students have the choice to program in any programming language. No restrictions enforced on students.

- Advanced concepts relevant to industry readiness and expectations are incorporated in the syllabus. Courses like mobile application development, NoSQL, Internet of Things, UNIX system programming, automata theory and formal languages, file structures, User interface design, virtual reality, C# and dot net, computer graphics with OpenGL and soft computing

- Domain specific teaching - learning curriculum is introduced from 3rd semester onwards for technical excellence in trending technologies

- Very good exposure to open source tools.

- Active participation in technical events and expose the student ability to industry experts. Many activities like Hackathons, KSCST and KSTA project proposals, Toycathon idea submissions, External Competitions, QuBytes 19 - State Level Inter collegiate Tech Fest are structured for students to participate and stimulate their learning.

- In all courses, the fifth chapter – 20% of syllabus every semester is handled by Industry experts. All labs have minimum 3 experiments beyond syllabus to incorporate more curiosity and hands-on with the subject.

- Many technical events/hackatons were organized like T-ZEST, Cryptoathon, Koders and many more for students to actively participate and exhibit their talents.

Based on the Student Feedback:

- Frequent industrial visits are organized with core companies like VMware, SAP, IBM, Wipro, Werner, and many more to provide good opportunities and understand the advanced research and development activities, core programming techniques, awareness about best practices and practical working environment. Domain specific industrial visits help students to create curiosity and exposure for industry readiness.

- Quiz based on aptitude, pattern matching, hackathon, Brain Teaser is conducted to improvise student attention.

- For Gate and competitive exams, students suggested courses like FAFL are included in the curriculum during their initial $5^{th}/6^{th}$ semesters.

- Self study topics beyond syllabus are listed and circulated with students.

- Students can selection their electives based on their career path.

Based on the Course Coordinator (Faculty) Feedback:

- Career based tracks for technical creativity and analytical thinking skills are provided to students to solve various software related issues. The sequence of core subjects learnt by the students are as follows
    - Third semester- Python, Data structures with C, Computer Organization
    - Fourth semester- OOP with Java, DBMS, Operating systems
    - Fifth semester- Data Science, Web internet programming, Design and analysis of algorithms, Mobile Application Development
    - Sixth semester- Advanced Java, Machine learning
- Project Quality is improved and indicated by following metrics
    - Regular Internal Assessments
    - External Examiner Evaluation
    - Plagiarism check
    - Student publications
    - Patents
    - VTU awards
    - Vishwakarma Award
    - Techorizon
- Motivational talks on Stress management, Conflict handling, Team work, Team building and Study skills on research and developments, Patenting, Entrepreneurship and Management are organized for students to strengthen their ideas and provide initiative paths.
- Workshops on trending technologies and technical jobs for the next 5 years according to industry requirements are delivered to students to downstream their career paths
- The reference books of latest edition as text books are included in the syllabus.
- Computer organization and operating systems are included in third and fourth semesters respectively to provide the fundamental knowledge regarding the architectures and related components.
- Course contents of subjects like data structures with C, object oriented programming, machine learning, advanced java, design and analysis of algorithms, software engineering and project management are revised for contents and reframed.
- Appropriate mathematical/statistical concepts are included in the syllabus for Machine Learning.
- Discrete mathematics and graph theory and Java & J2EE are introduced in the 4th semester to build strong analytical background.
- Software testing subject is associated with lab for better understanding.
- Courses like mobile application development, NoSQL, Internet of Things, UNIX system programming, automata theory and formal languages, file structures, User interface design, virtual reality, C# and .net, computer graphics with OpenGL and soft computing are included as new courses in the curriculum.

- Advanced concepts in C# & .net are included in the syllabus.
- Mini project component and technical seminar components are incorporated in the syllabus.
- Mandatory to all the students to undergo at least 6 week of internship in their curriculum. Many final year projects are done in government agencies like DRDO, LRDE, HAL etc or in reputed IT companies like IBM, SAP, HCL etc.

Alumni feedback: 2018-19 AY

Based on the alumni feedback taken during the alumni meet and also whenever they visit the college, the following are the key take away consolidated

- Placement buddy talk can be conducted, which helps the students get the placement related information directly from the experienced seniors, placement buddies, and they can interact and discuss the transformational event's placement readiness strategies.
- The industry readiness with recent software projects and application advancement is required to students to expertise in different programming like C, C++, C#, JavaScript, VB, NET, R, PHP, Java, and python.
- To learn new information or new skills in various domains, online courses like NPTEL, Coursera, and open source courses can be offered to students for self-learning. These courses will assist students in delivering content beyond the syllabus.
- To explore new technical advancements and enhance students' technical prowess, seminars, events, or symposium with technical and non-technical student engagement activities can be conducted.
- To improve students' learning in a more interactive, topic-specific way, guest lectures on the latest updates in Data Science & Machine Learning, cloud computing, Software development skills, blockchain, and Web-based applications can be conducted.
- To focus more on innovation and research, students should improve their paper writing skills and patenting, which helps them have a detailed analysis.
- To learn more about the latest technologies, recent software and tools like blockchain, distributed cloud, VMware, network simulators, IoT, Anaconda, etc. can be included in the curriculum.

Employer feedback: 2018-19 AY

- To gain expertise in various domains, employers suggested conducting workshops/seminars on the various domains like Data Science, Cyber Security, Global Education, etc.
- To provide students with an insight into the corporate sector, domain-specific industrial visits are recommended. These visits can help students to know things practically through

interaction, working methods, and employment practices.

- seminars are the most proficient method to get ready for placements, personality development, investigating abilities, employability skills, technical skills to be coordinated for students to improve the degree of performance
- The curriculum can bridge the gap between industry and academic
- The curriculum can help in building entrepreneurial motives, which helps the students for starting their ventures

Course Coordinators (Faculty) Feedback: 2018-19 AY

To enhance the curriculum and edify knowledge of the students on current modern prerequisites, the course coordinators proposed to fuse the gaps identified in the syllabus endorsed for the third, fourth, fifth, and sixth semester

- The syllabus of the data structures with C can be refined as per the student placement's basic requirement.
- Trending technologies-based courses are included in the curriculum, thereby OOPS with C++ and replaced with OOPS with Java, and it can be moved from the fourth semester to the third semester.
- The new edition of textbooks can be introduced to the students as suggested by the BoS members to absorb more knowledge.
- Data analytics can be included as a professional elective to understand the technological advancements in the last couple of years that transformed the process of usage of data
- Self-study and technical reports can be incorporated into the syllabus
- Courses like essential English, life skills for engineers, introduction to economics can be introduced for students in the syllabus.

Student Feedback: 2018-19 AY

- After receiving feedback from students, various expert talks can be provided insights on the recent advancements like blockchain, Redundant Robot arms, Machine learning, Transactions Management in Database, etc. to gain more knowledge about the trending technologies
- To expose their practical and technical knowledge, student projects can be sent to Git-hubs
- As per the recommendations of the students, guest talk on entrepreneur can be conducted.
- To participate actively and exhibit their talents, many technical events/hackathons, cryptoathons can be organized.
- Students requested to schedule industrial visits with various companies to know the advanced research and developments, core programming techniques, and practical working environments to meet the industrial needs

- To broaden the students' thinking level, self-study report preparation, seminars on the topics beyond the syllabus can be encouraged.

Action Plan 2019-20 based on 2018-19 feedback summary:

Based on the Alumni feedback:

- Placement buddy talk was conducted, which helps the students get the placement-related information directly from the experienced seniors, placement buddies and interact and discuss the transformational event's placement readiness strategies.
- Many technical events/hackathons were organized like T-ZEST, Cryptoathon, Koders, and many more for students to participate and exhibit their talents actively.
- To learn new information or new skills in various domains, online courses like NPTEL, Coursera, open Source courses were offered to students for self-learning. These courses will assist students in delivering content beyond the syllabus.
- Training on recent software projects, basic programming languages, and application advancement was provided to illuminate the student's industry readiness
- Fest **QUBYTES** with technical and non-technical student engagement activities was conducted in 2019 on the Alumni recommendations. This fest was aimed at exploring new technical advancements to enhance students' technical prowess
- Guest lectures on the latest updates in cloud computing, Software development skills, blockchain, and web-based applications based on alumni suggestions.
- Sessions on paper writing skills were conducted to focus more on innovation and research and develop a student's comprehensive analysis.

Based on Employer feedback:

- To gain expertise in various domains, various workshops conducted Below are a few of the workshops conducted "workshop on Data Science with Python", "workshop on Cyber Security and Consumer Awareness", "Workshop on Global Education Programme", "T-ZEST Technical event", "Koder's contest".
- Industrial visits were held as per the student requests to observe and learn the real-time working environment in various organizations like Mindtree, Wipro, etc.
- Seminars on personality development, investigating abilities, employability skills, technical skills were conducted to improve the degree of performance in placements.

- As NHCE engineering college already has an industrial collaboration with Wipro, the students can interact with Wipro experts to edify their technical knowledge.
- The syllabus of the data structures with C was discussed with the course coordinator and the other faculties handling the subject to refine the syllabus as per the basic requirement of the student placement.
- A guest lecture talk on "Entrepreneurship Motivation" was conducted by NHCE alumni Mr. Nirmal, as per the entrepreneur's recommendations.

Based on Course Coordinator (Faculty) feedback:

- The syllabus of the data structures with C was discussed with the course coordinator and the other faculties handling the subject to refine the syllabus as per the basic requirement of the student placement.
- Trending technologies-based courses are included in the curriculum, thereby OOPS with C++ and replaced with OOPS with Java, which has been moved from the fourth semester to the third semester.
- Data analytics is incorporated as a professional elective to gain problem-solving skills in a real-time environment and to understand the technological advancements in the last couple of years that transformed the process of usage of data
- A New edition of textbooks has been introduced to the students to absorb more knowledge of the subject
- Courses like essential English, life skills for engineers, introduction to economics are introduced for students.

Based on Student feedback:

- Various expert talks have been held to provide insights on recent advancements like blockchain, Redundant Robot arms, Machine learning, Transactions Management in databases, Data Structures, and Applications. Technology Trends, and Industry in Future, object-oriented programming, etc. to gain more knowledge about the trending technologies
- Student projects were sent to Git-hubs to expose their practical and technical knowledge.
- Students have participated in various technical symposiums like National level SAP Semicolon Hackathon, BITSMUN 2020, InQuizitive, Semicolon Hackathon 2019 on alumni recommendation
- Scheduled the industrial visits with various companies like Mindtree, IBM, Wipro, Werner, SAP and many more to know the advanced research and developments, core programming techniques, and practical working environments to meet the industrial

needs

- Seminars on the self-study report were scheduled to develop a good work ethic and broaden the thinking level of the students

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Alumni feedback: 2019-20 AY

Based on the alumni feedback taken during the alumni meet and also whenever they visit the college, the following are the key take away consolidated

- To provide useful resources from the web for self learning in coding, tips for cracking the technical / coding round test, programming paradigm and many more.
- To recommend project based learning is each semesters based on emerging technologies are beneficial to students while attending placements.
- To increase the number of workshops that can provide content beyond syllabus. Workshops on recent trends like cyber security and block chain, Internet of Things, Machine Learning, Cloud computing, Mobile application development, Devops, data analytics and many more can collaborate their ideas, deliver, share recent trends, advancements and research in an open forum.
- To insist self study component that can help students to improve their communication skills as well as they can stimulate lifelong learning activities.
- To offer MOOC Courses, NPTEL, Coursera, Harappa, along with Open Source courses to students for self learning content beyond syllabus.
- To focus more on lab experimentations, innovation and research, concept of paper writing and patenting.
- To include mainly open source tools usage in labs like VMware, NS2, Anaconda, Java etc can help students come out of proprietary software's. Open source tools are widely used in core companies.
- To invite guest lectures on latest updates in the field of Data Science & Machine Learning, cloud computing, Software development skills, block chain and Wed based applications.

Employer feedback: 2019-20 AY

- Suggest encouraging students to take-up emerging technologies oriented mini projects every semester.
- Career based tracks for technical creativity and analytical thinking skills are to be provided to students to solve various software related issues.
- Wide choice of electives can be incorporated in the curriculum based on emerging technologies. Labs associated with these electives can enrich technical knowledge of the students.

- Encourage the students to participate in various Hackathon, Project exhibitions, Technical contests and other academic related events and the same can be considered during assessment.
- The industry readiness with innovative software programs and application development are required, hence students must specialize in multiple programming languages like C, C++, C#, java, python etc.
- Introduce domain specific teaching, learning curriculum from 4rd semester onwards for technical excellence in trending technologies.
- Domain specific industrial visits help students to create curiosity and exposure for industry readiness.
- Project based learning
- Exposure to open source tools
- Active participation in technical events and expose the student ability to industry experts.
- Courses like Mobile Application Development can to be considered as core subject to meet the industry requirements for placement activities.
- Buddies from college can provide inputs to current students on recent advances in research, Industry needs and area of expertise on courses like Data Structures, Algorithms, programming paradigm, useful resources in the web for self learning in coding, Tips for cracking the technical / coding round test and many more.
- Recommendations to include subjects like Essential English, Ethics and life skills for students.
- Seminars/ workshops on "How to prepare for placements, coding tips, debugging skills, technical concepts on programming" can be organised for students for smart performance.
- Latest/essential programming languages can be incorporated and better choice of programming languages for subjects like AI (R tool/Python).
- Core subjects must be opted during the initial semesters to have strong background knowledge.

Course Coordinators (Faculty) Feedback: 2019-2020 AY

To enrich the curriculum and expose the students to the current industrial requirements, the course coordinators suggested incorporating the following in the syllabus prescribed for forth coming semesters.

- Track wise curriculum with various courses must be framed from the initial semesters.

- Placement department suggested the course 'Internet of Things' to be made as Professional Elective and 'Mobile Application Development' must be considered as core subject to meet the industry requirements for placement activities.
- Course contents of subjects like Machine Learning and Data Science are overlapping. The contents must be revised and reframed. 'Diversion and Reduction' topics can be included in Data Science. Deep Learning concepts like CNN can be included in Machine Learning subject.
- Recommendations to use 'Jupiter' notebooks and Lab for Data Science/Machine learning hands-on sessions. Recommendation to give more importance to statistics in data science and machine learning.
- Recommendations to have hands-on sessions/mini project with subject 'Mobile Application Development' than theory concept explanation. This will encourage students to develop applications based on their ideas and exhibit their innovations during placement activities.
- No programming language to be enforced on students.
- The courses like Environmental science and awareness, Aadalitha/vyavaharika kannada can be included in the curriculum.
- The reference books of latest edition can be recommended as text books.
- Mini project component, Self study component and technical seminars must be incorporated in the syllabus.
- Student projects can be uploaded to Git-hubs to exhibit their technical knowledge.
- Course contents of subjects like Software Engineering and Project Management, User interface design must be revised and re-framed.

Student Feedback: 2019-2020 AY

- Selection of electives by students based on their career path.
- Frequent industrial visits can provide good opportunities, awareness about best practices and practical working environment.
- Increase in the number of industrial visits can help students to identify their prospective area of work like software development, testing, design and automation and many more.
- Students requested to organize industrial visits with core companies like VMware, SAP, IBM, Wipro, Werner, and many more to know the advanced research and developments, core programming techniques and practical working environments to meet the needs.

- Self study topics beyond syllabus can be listed and circulated with students.
- Motivational talks on stress management, Conflict handling, team work, team building and study skills on research and developments, patenting, Entrepreneurship can strengthen ideas and provide initiative paths to students.
- With increase in number of workshops on "trending technologies and technical jobs for the next 5 years" may help students to downstream their career paths
- Quiz based on aptitude, pattern matching, hackathon can be conducted to improvise student's attention.

Action Plan for 2020-21 based on 2019-20 feedback summary

Based on the Alumni feedback:

- Domain specific training, learning curriculum are introduced from 4rd semester onwards for technical excellence in trending technologies. Value-added courses like GP training are provided for students to excel in industry requirements.
- Project based learning – Every semester students undergo mini projects based on their areas of interest. Final year students are insisted to full fledge focus on projects with trending topics of research meeting industry standards.
- Workshops on "Crossing barriers in research, Internet of Things (IoT) A and its Applications, Cyber security and digital forensics" are delivered to students to downstream their career paths
- Expert talks on 'Latest updates in the field of Data Science & Machine Learning, Cloud Computing, Digital signature in web application, Supply Chain Digital Transformation Trends are organized for students.
- Self study Report is a continuous internal evaluation (CIE) component for one subject at least every semester. This evaluates them to do extra referencing based on their area of interest. Students will also give a presentation for evaluation purpose. This improves their presentation skills there by stimulates lifelong learning as a team. Self study topics beyond syllabus are encouraged. Self study topics beyond syllabus are listed in the lesson plan and circulated with students.
- Buddy talks were organized to help current students on recent advances in research, Industry needs and area of expertise on courses like Data Structures, Algorithms, programming paradigm, useful resources in the web for self learning in coding, Tips for cracking the technical / coding round test and many more.
- Open sources workshop are organized to enable students to come out of proprietary software's. Open source tools used in lab like VMWare, NS2, Anaconda, Java etc
- Many MOOC Courses, NPTEL, Coursera, Harappa, Open Source courses are complied for students to deliver content beyond syllabus. MOOC/NPTEL courses are made mandatory for 5th semester students and 3rd semester students are also motivated to actively

participate.

- Much innovative teaching pedagogy is incorporated to improve the capability of the students. Few initiatives are
    - Originality and Creativity
    - The change is brought by using various innovations
    - Constancy in their work
    - Knowledge used and developed in academics, research and patenting

Based on the Employer feedback:

- Wide choices of electives are incorporated in the curriculum based on emerging technologies. Electives offered for students are VMware, Big Data Analytics, HP Vertica, Cisco Networking Academy, Schneider Electric, SAP next-Gen, Quest Global Engineer, and Automation Anywhere (IIoT). Labs associated with these electives enrich technical knowledge of the students.

- The industry readiness with innovative software programs and application development skills are incorporated among students. Hence students are specialized in multiple programming languages like C, C++, C#, java, python etc.

- Courses like essential English, life skills for engineers, introduction to economics are introduced for students in the syllabus.

- Students have the choice to program in any programming language. No restrictions enforced on students.

- Students study subjects like Computer organization, Operating systems, Mobile application development, python, data Science, Machine Learning at their initial semesters to strengthen their technical skills.

- Advanced concepts relevant to industry readiness and expectations are incorporated in the syllabus. Courses like mobile application development are included as core courses in the curriculum.

- Active participation in technical events and expose the student ability to industry experts. Many activities like Hackathons, KSCST and KSTA project proposals, Toycathon idea submissions, External Competitions, QuBytes 20 - State Level Inter collegiate Tech Fest are structured for students to participate and stimulate their learning.

- In all courses, the fifth chapter – 20% of syllabus every semester is handled by Industry experts. All labs have minimum 3 experiments beyond syllabus to incorporate more curiosity and hands-on with the subject.

- Many technical events/hackatons were organised like QUBYTES-2K20, VITA DAY 2020, Design Overflow, TECHNOWHIZZ, VZards 2020, KNOWBE4 and many more for students to actively participate and exhibit their talents.

- Very good exposure to open source tools.

Based on the Course Coordinator (Faculty) Feedback:

- Career based tracks for technical creativity and analytical thinking skills are provided to students to solve various software related issues. The sequence of core subjects learnt by the students are as follows
    - Third semester- Python, Data structures with C, Computer Organization
    - Fourth semester- OOP with Java, DBMS, Operating systems
    - Fifth semester- Data Science, Web internet programming, Design and analysis of algorithms, Mobile Application Development
    - Sixth semester- Advanced Java, Machine learning
- Mandatory to all the students to undergo at least 6 weeks of internship in their curriculum. Many final year projects are done in government agencies like DRDO, LRDE, HAL etc or in reputed IT companies like IBM, SAP, HCL etc.
- Project Quality is improved and indicated by following metrics
    - Regular Internal Assessments
    - External Examiner Evaluation
    - Plagiarism check
    - Student publications
    - Patents
- The course 'Internet of Things' is made as Professional Elective and 'Mobile Application Development' is considered as core subject to meet the industry requirements for placement activities.
- Course contents of subjects like Machine Learning and Data Science were overlapping. The contents are revised and reframed. 'Diversion and Reduction' topics are included in Data Science. Deep Learning concepts like CNN are included in Machine Learning subject.
- 'Jupiter' notebooks are used in Labs for Data Science/Machine learning hands-on sessions. More importance is given to statistics in data science and machine learning.
- Hands-on sessions/mini project are included for 'Mobile Application Development' than theory concept explanation. This will encourage students to develop applications based on their ideas and exhibit their innovations during placement activities.
- Student projects are uploaded to Git-hubs to exhibit their technical knowledge.
- Course contents of subjects like Software Engineering and Project Management, User interface design are revised and re-framed.
- Mini project component and technical seminar components are incorporated in the syllabus.

Based on the Student Feedback:

- Frequent industrial visits were organized with core companies like VMware, SAP, IBM, Wipro, Werner, and many more to provide good opportunities and understand the

advanced research and development activities, core programming techniques, awareness about best practices and practical working environment. Domain specific industrial visits help students to create curiosity and exposure for industry readiness.

- Motivational talks on "Evolving as a healthy Engineer During Covid-19, Entrepreneurship and Management, How to Make your Career and Not Break it "are organized for students to strengthen their ideas and provide initiative paths.
- Seminars/ workshops on "How to prepare for placements, Crypto currencies and Smart contracts, VMware IT Forum 2019, Artificial Intelligence and Machine Learning Applications Using Python" and many more are organized.
- Quiz based on aptitude, pattern matching, hackathon, Brain Teaser is conducted to improvise student attention.

NEW HORIZON COLLEGE OF ENGINEERING

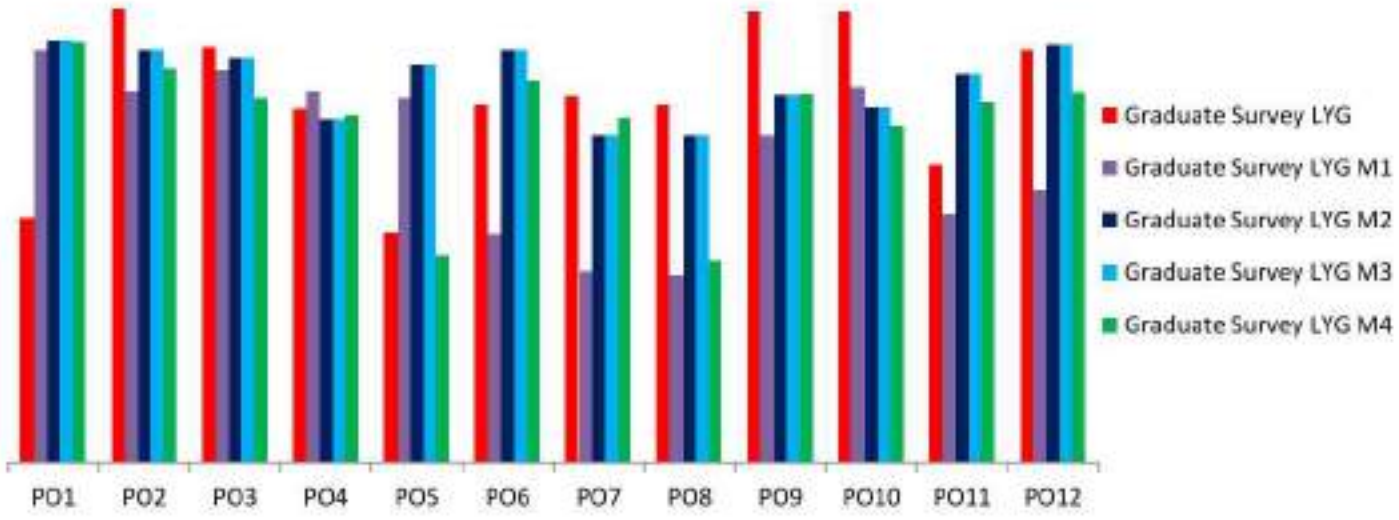
DEPARTMENT OF MECHANICAL ENGINEERING

Stakeholders Feedback Analysis

Graduate Survey

Responses of Graduate students in program attainment versus program outcomes:

		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Graduate Survey	LYG	2.723	2.999	2.948	2.867	2.703	2.873	2.884	2.872	2.995	2.995	2.793	2.945
	LYG M1	2.946	2.891	2.918	2.891	2.880	2.701	2.652	2.647	2.832	2.897	2.728	2.761
	LYG M2	2.957	2.946	2.935	2.853	2.924	2.946	2.832	2.832	2.886	2.870	2.913	2.951
	LYG M3	2.957	2.946	2.935	2.853	2.924	2.946	2.832	2.832	2.886	2.870	2.913	2.951
	LYG M4	2.955	2.920	2.880	2.858	2.675	2.905	2.855	2.666	2.888	2.845	2.875	2.890



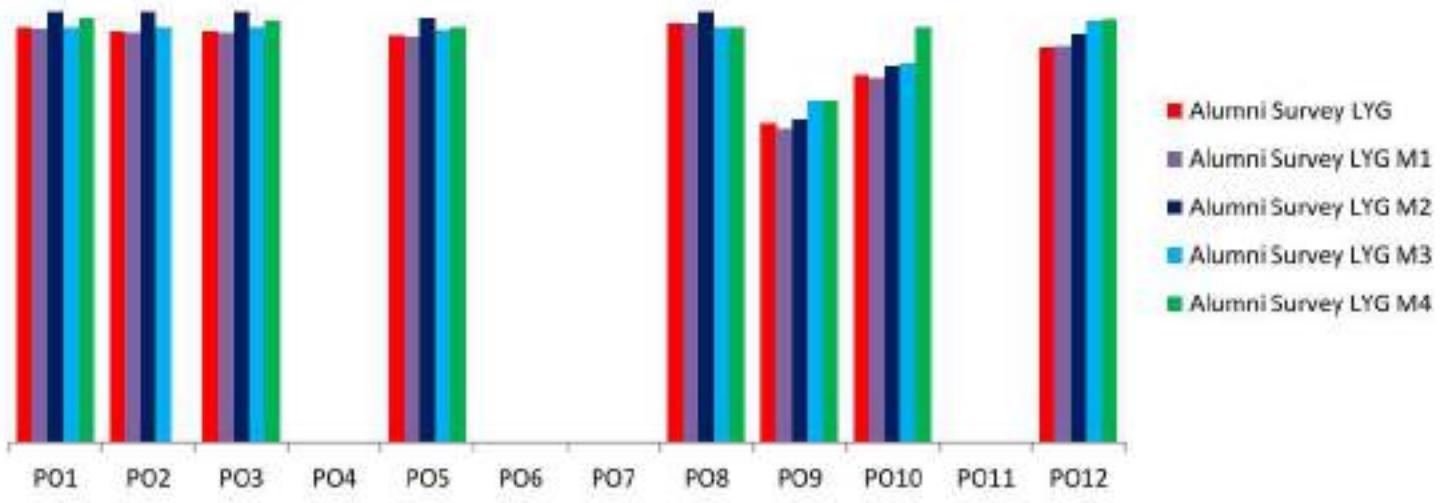
NEW HORIZON COLLEGE OF ENGINEERING

DEPARTMENT OF MECHANICAL ENGINEERING

Alumni Survey

Responses of Alumni students in program attainment versus program outcomes:

		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Alumni Survey	LYG	2.856	2.828	2.828		2.798			2.883	2.189	2.527		2.714
	LYG M1	2.847	2.818	2.818		2.790			2.875	2.158	2.507		2.717
	LYG M2	2.960	2.958	2.958		2.913			2.962	2.222	2.591		2.812
	LYG M3	2.856	2.858	2.858		2.839			2.853	2.355	2.604		2.894
	LYG M4	2.912		2.898		2.855			2.855	2.355	2.855		2.905



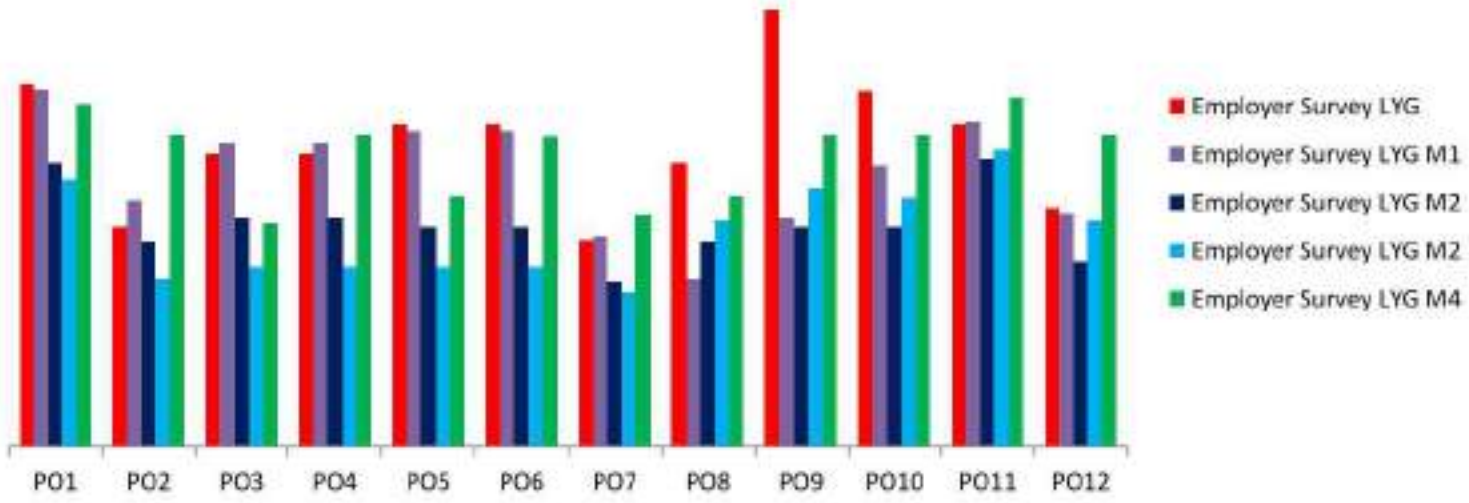
NEW HORIZON COLLEGE OF ENGINEERING

DEPARTMENT OF MECHANICAL ENGINEERING

Employer Survey

Responses of Employers in program attainment versus program outcomes:

		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Employer Survey	LYG	2.912	2.751	2.834	2.834	2.868	2.868	2.735	2.824	2.999	2.905	2.868	2.772
	LYGM1	2.907	2.780	2.847	2.847	2.860	2.860	2.740	2.690	2.760	2.820	2.870	2.765
	LYG M2	2.823	2.734	2.760	2.760	2.750	2.750	2.688	2.734	2.750	2.750	2.828	2.711
	LYG M2	2.804	2.691	2.706	2.706	2.706	2.706	2.676	2.757	2.794	2.784	2.838	2.757
	LYG M4	2.890	2.855	2.755	2.855	2.786	2.854	2.764	2.785	2.855	2.855	2.898	2.855



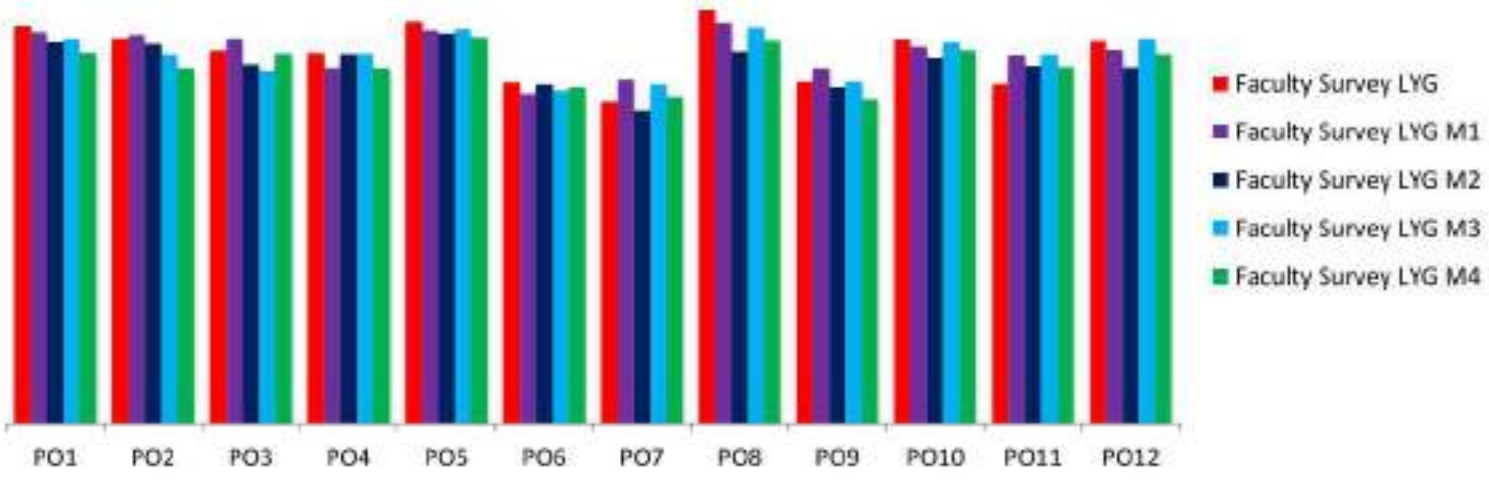
NEW HORIZON COLLEGE OF ENGINEERING

DEPARTMENT OF MECHANICAL ENGINEERING

Faculty Survey

Responses of Graduate students in program attainment versus program outcomes:

		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Faculty Survey	LYG	2.865	2.767	2.685	2.667	2.896	2.457	2.313	2.975	2.462	2.764	2.445	2.752
	LYG M1	2.822	2.798	2.765	2.556	2.834	2.376	2.476	2.885	2.553	2.713	2.652	2.690
	LYG M2	2.744	2.734	2.587	2.659	2.811	2.442	2.252	2.678	2.422	2.634	2.577	2.561
	LYG M3	2.765	2.658	2.534	2.662	2.843	2.398	2.443	2.853	2.463	2.743	2.657	2.765
	LYG M4	2.668	2.553	2.661	2.553	2.774	2.421	2.355	2.753	2.335	2.686	2.564	2.659



Action taken Report on Stakeholder's Feedback

Feedback from Stake holder's such as Students, Alumni, Employer and faculty taken by Institution/Department were considered for continuous improvements in curriculum and other academic aspects. The ultimate goal of stakeholder's feedback / survey is to get useful insights for the purpose of improvement in all aspects of teaching, learning, assessment and infrastructure facilities. For instance, Inputs collected from all the stake holder's are analyzed and carried forward in Board of Studies (BoS) for approval. After getting approval in BoS, the curriculum with the incorporation of recommended changes if any is sent to Academic Council for the final endorsement. The following structure describes the significance of stake holders for the development.

1. **Graduate Feedback:**
   - ☑ The inputs from the graduating students on design of curriculum, services rendered, use of novel teaching technologies and their overall experience related to facilities and educational resources. However, graduating student will be submitting their overall impression related to institute along with this feedback.
2. **Alumni's Feedback:**
   - ☑ Alumni are considered as the ambassadors of the institution to the outside world. They are in a position to evaluate the extent to which the programme is effective in achieving the desired objective. As an alumnus they share their experience and participate in curricular updates in view of emerging technologies and tools.
   - ☑ Alumni survey is conducted, through which suggestions are provided to design syllabus as per the expectations of current trend which makes the students industry ready and which in turn helps to prepare for competitive examinations.
3. **Employer Feedback:**
   - ☑ Employer feedback helps in enriching the program with industry relevant courses (Electives) which enable bridging the gap between the program curriculum and industry requirements.
4. **Faculty Feedback:**
   - ☑ Faculty feedback helps in understanding the curriculum with the syllabus and contents thereby enabling the introduction of new courses and contents based on the industry requirements.

Along with the above surveys, Department has taken feedback specifically on curriculum from various stakeholders in view of identifying the gap in the syllabus as per the requirement of current trend. Suggestions like more smart and experiential leaning and approach to competitive exams, while framing the syllabus of various courses were consolidated and discussed in BOS meeting.

Since few courses are multidisciplinary, faculties from various departments are actively participating in the syllabus restructuring process, as being members of Board of Studies. These suggestions were communicated to the chairman of the board for the proper redressal of suggestions. Following actions were prominently taken after analyzing the feedback from Stake holders.

- Few emerging courses like Automation Engineering, Product Life Cycle Management, Machine Learning (ML), Internet of Things (IoT) and SAP have been introduced.
- More industrial, value added courses and workshops are conducted.
- Expert lectures on relevant subjects / areas were conducted.
- Carrier guidance lectures were also conducted on different topics to inculcate interest in subjects.
- Industrial visits were organized for connecting the students with practical exposure.

NEW HORIZON COLLEGE OF ENGINEERING

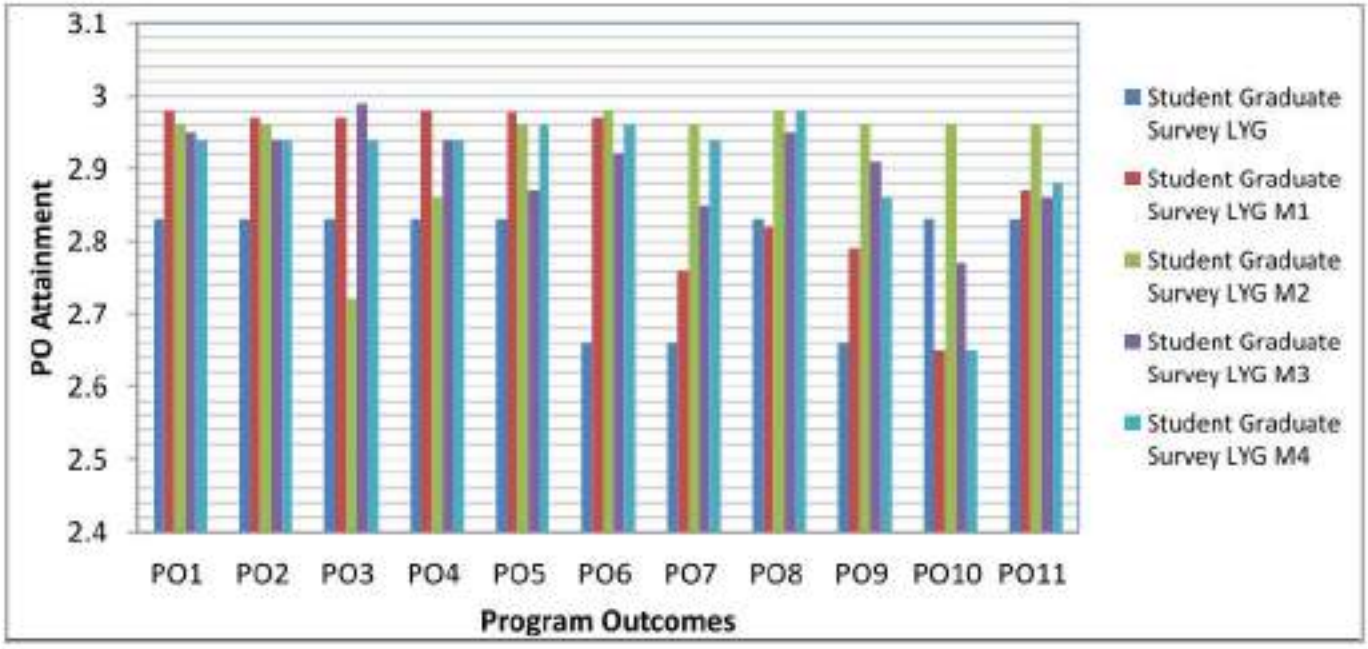
DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS

STAKEHOLDERS FEEDBACK ANALYSIS

Student Graduate Survey

Response of Graduate students in program attainment versus program outcomes:

		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
Student Graduate Survey	LYG	2.83	2.83	2.83	2.83	2.83	2.66	2.66	2.83	2.66	2.83	2.83
	LYG M1	2.98	2.97	2.97	2.98	2.978	2.97	2.76	2.82	2.79	2.65	2.87
	LYG M2	2.96	2.96	2.72	2.86	2.96	2.98	2.96	2.98	2.96	2.96	2.96
	LYG M3	2.95	2.94	2.99	2.94	2.87	2.92	2.85	2.95	2.91	2.77	2.86
	LYG M4	2.94	2.94	2.94	2.94	2.96	2.96	2.94	2.98	2.86	2.65	2.88

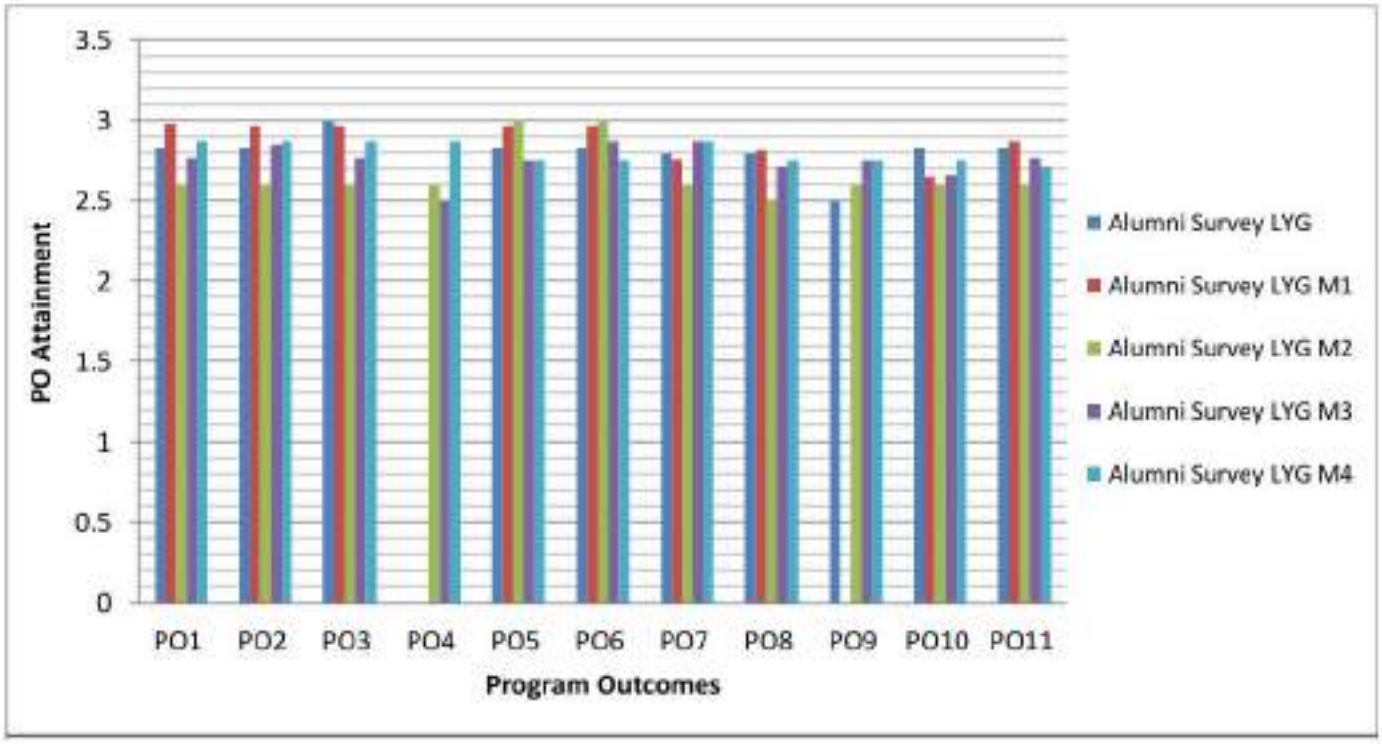


HOD-MCA

Alumni Survey

Response of Alumni students in program attainment versus program outcomes:

		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
Alumni Survey	LYG	2.83	2.83	3	-	2.83	2.83	2.8	2.8	2.5	2.83	2.83
	LYG M1	2.98	2.97	2.97	-	2.97	2.97	2.76	2.82	-	2.65	2.87
	LYG M2	2.6	2.6	2.6	2.6	3	3	2.6	2.5	2.6	2.6	2.6
	LYG M3	2.77	2.85	2.77	2.5	2.75	2.87	2.87	2.71	2.75	2.66	2.77
	LYG M4	2.87	2.87	2.87	2.87	2.75	2.75	2.87	2.75	2.75	2.75	2.71

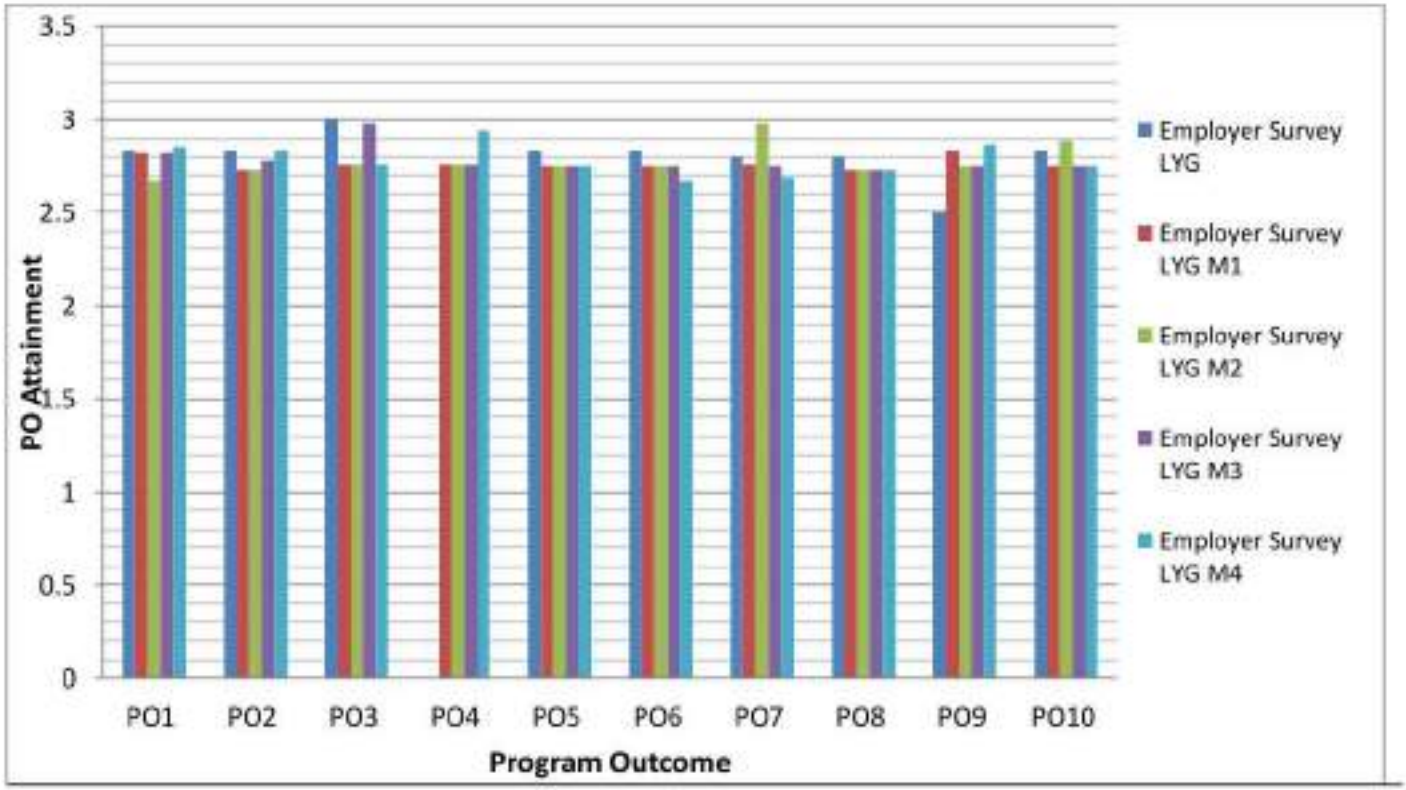


HOD-MCA

Employer Survey

Response of Employer's in program attainment versus program outcomes:

		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
Employer Survey	LYG	2.83	2.83	3	-	2.83	2.83	2.8	2.8	2.5	2.83	2.83
	LYG M1	2.82	2.73	2.76	2.76	2.75	2.75	2.76	2.73	2.83	2.75	2.83
	LYG M2	2.67	2.73	2.76	2.76	2.75	2.75	2.98	2.73	2.75	2.89	2.83
	LYG M3	2.82	2.78	2.98	2.76	2.75	2.75	2.75	2.73	2.75	2.75	2.83
	LYG M4	2.85	2.83	2.76	2.94	2.75	2.67	2.69	2.73	2.87	2.75	2.9

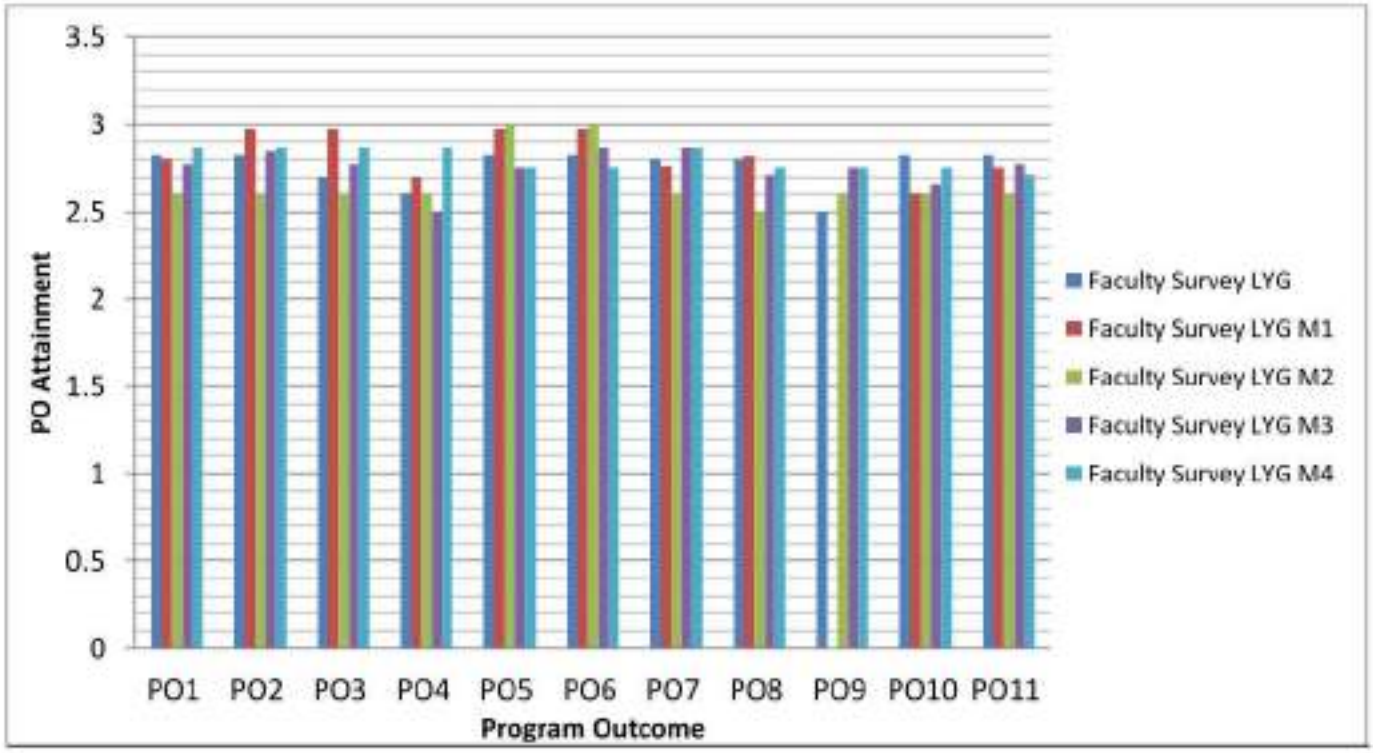


HOD-MCA

Faculty Survey

Response of Faculty's in program attainment versus program outcomes:

		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
Faculty Survey	LYG	2.83	2.83	2.7	2.6	2.83	2.83	2.8	2.8	2.5	2.83	2.83
	LYG M1	2.8	2.97	2.97	2.7	2.97	2.97	2.76	2.82	-	2.6	2.75
	LYG M2	2.6	2.6	2.6	2.6	3	3	2.6	2.5	2.6	2.6	2.6
	LYG M3	2.77	2.85	2.77	2.5	2.75	2.87	2.87	2.71	2.75	2.66	2.77
	LYG M4	2.87	2.87	2.87	2.87	2.75	2.75	2.87	2.75	2.75	2.75	2.71



HOD-MCA

Action taken Report on Stakeholder's Feedback

Institution collects stake holder's feedback for PG programs. Feedbacks from students, Alumni and employer are considered for continuous improvements in curriculum and other academic aspects. The ultimate goal of stakeholder's feedback is to get useful insights for the purpose of improvement in all aspects of teaching, learning, assessment and infrastructure facilities. Inputs collected from all the stake holders are analyzed and carried forward in Board of Studies (BoS) for approval. After getting approval in BoS, the curriculum with the incorporation of recommended changes if any is sent to Academic Council for their final endorsement. The following structure describes the significance of stakeholders for the development.

1. Student Graduate Survey Feedback:

- The inputs from the graduating students on enhancement on curriculum, services extended incorporation of novel commuting technologies and their overall experience related to infrastructure. However, graduating student will be submitting their overall impression related to institute and their feedbacks are also collected.

2. Alumni's Feedback:

- Alumni are considered as the ambassadors to the outside world. They are in a position to evaluate the extent to which the program is effective in achieving the desired objective. As an alumnus they share their experience and participate in curricular updates in view of emerging technologies and industry demands.
- Alumni survey is conducted, through which suggestions are provided to design syllabus which makes the students industry ready and well prepared towards upcoming IT domain demands.

3. Employer Feedback:

- Employer feedback helps in enriching the program with industry relevant courses (Electives) which enable bridging the gap between the program curriculum and industry requirements.

4. Faculty Feedback

- Faculties play a very important role in the development and enhancement of the quality of the learning experience. Faculty feedback is to evaluate the service provision and thus cater to providing excellent service towards the students.

In view of identifying the gap in the syllabus as per the requirement of various stakeholders, the Department has taken feedback on curriculum from various stakeholders. Suggestions like more smart and experiential learning and employer requirement, relevant to the framing of the syllabus of various courses were consolidated and discussed in BOS meeting.

Following actions were prominently taken

1. Few emerging courses like Internet of Things, Mobile Application Development, Python, Machine Learning Techniques, Data Science, Cyber security and cyber law has been introduced.

2. More industrial, value added course and workshops are conducted.

3. Expert guidance lecture and carrier guidance lecture are conducted on different topics to inculcate interest in subjects.

4. Industrial visits to R&D divisions of central government organization like CDAC are done to explore the advanced computing facilities.

5. Technical research seminar based on broad literature survey is introduced to inculcate the research ideas for innovations

6. Life skill courses are included in the curriculum to improve the communication skill and interpersonal skill of students.

7. The theoretical courses include labs to strengthen the curriculum in both theoretical and practical aspects.

8. Compulsory mini project is included from second semester onwards to get full-stack developer skills.

9. Latest textbooks and reference books were included while framing the syllabus.

10. Rubrics were framed for lab courses, mini projects, self-study and sixth semester main project.

HOD-MCA

NEW HORIZON COLLEGE OF ENGINEERING

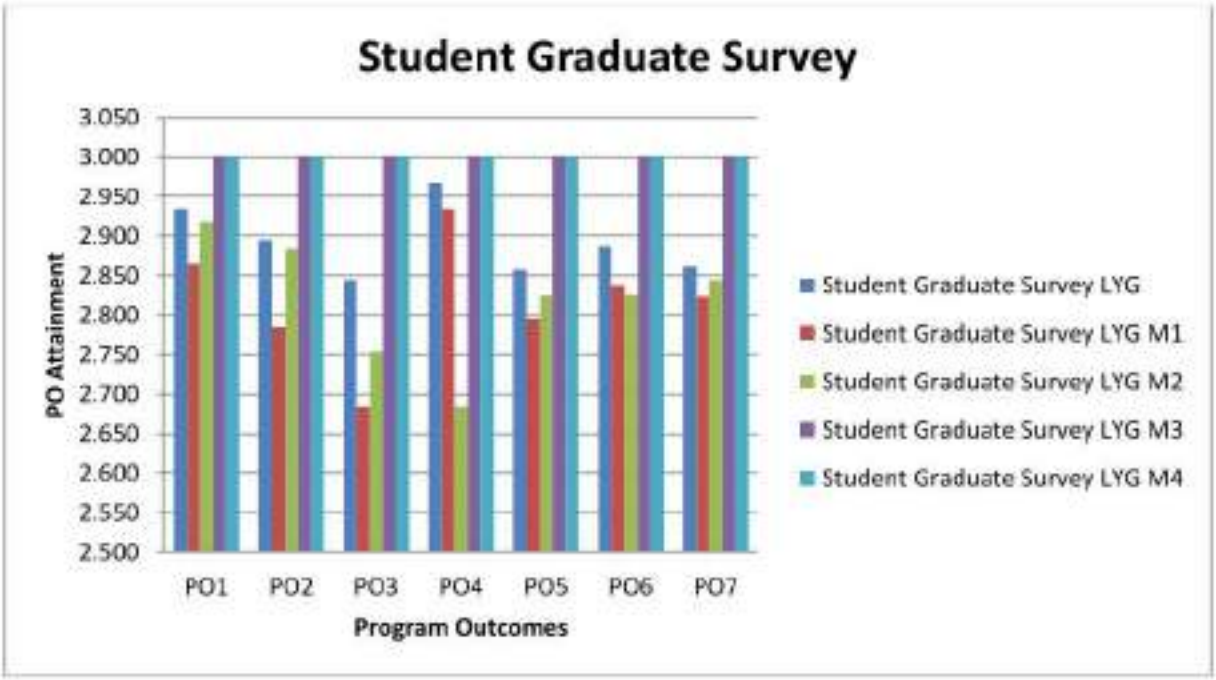
Department of Management Studies

Stake Holders Feedback Analysis

Student Graduate Survey

Responses of graduate students in program attainment versus program outcomes

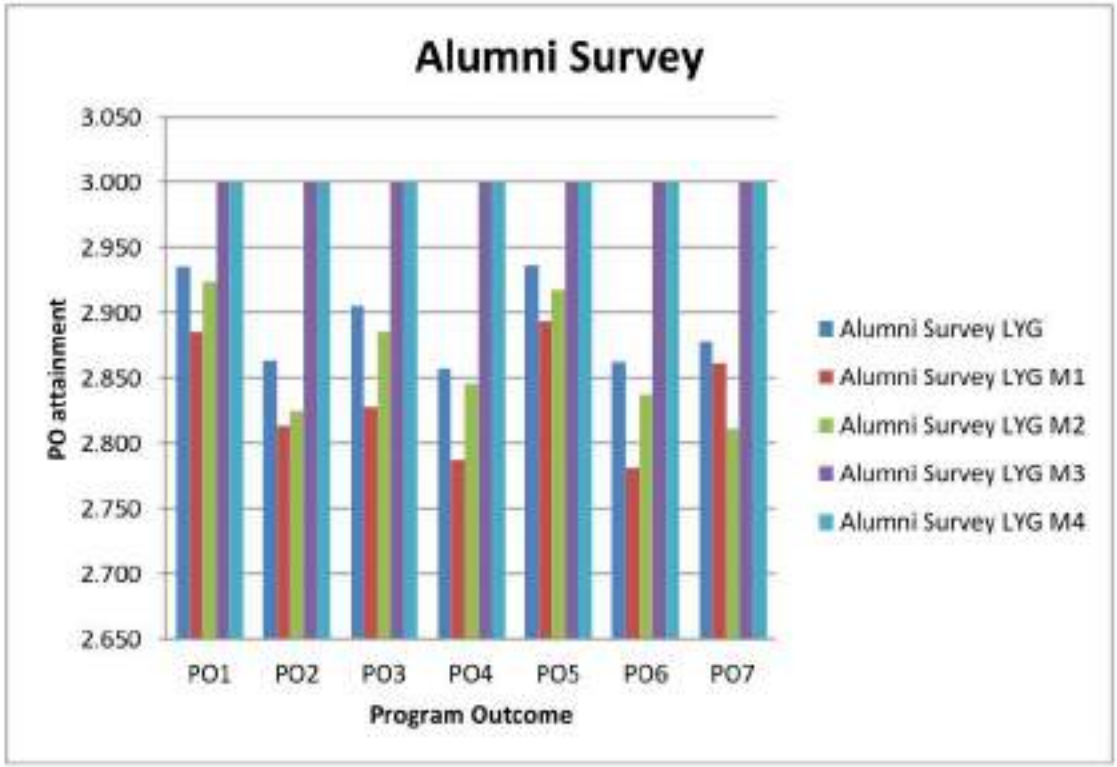
		PO1	PO2	PO3	PO4	PO5	PO6	PO7
Student Graduate Survey	LYG	2.935	2.895	2.845	2.968	2.858	2.888	2.862
	LYG M1	2.865	2.785	2.685	2.935	2.795	2.838	2.824
	LYG M2	2.918	2.885	2.755	2.685	2.825	2.826	2.845
	LYG M3	3.000	3.000	3.000	3.000	3.000	3.000	3.000
	LYG M4	3.000	3.000	3.000	3.000	3.000	3.000	3.000



Alumni Survey

Responses of graduate students in program attainment versus program outcomes

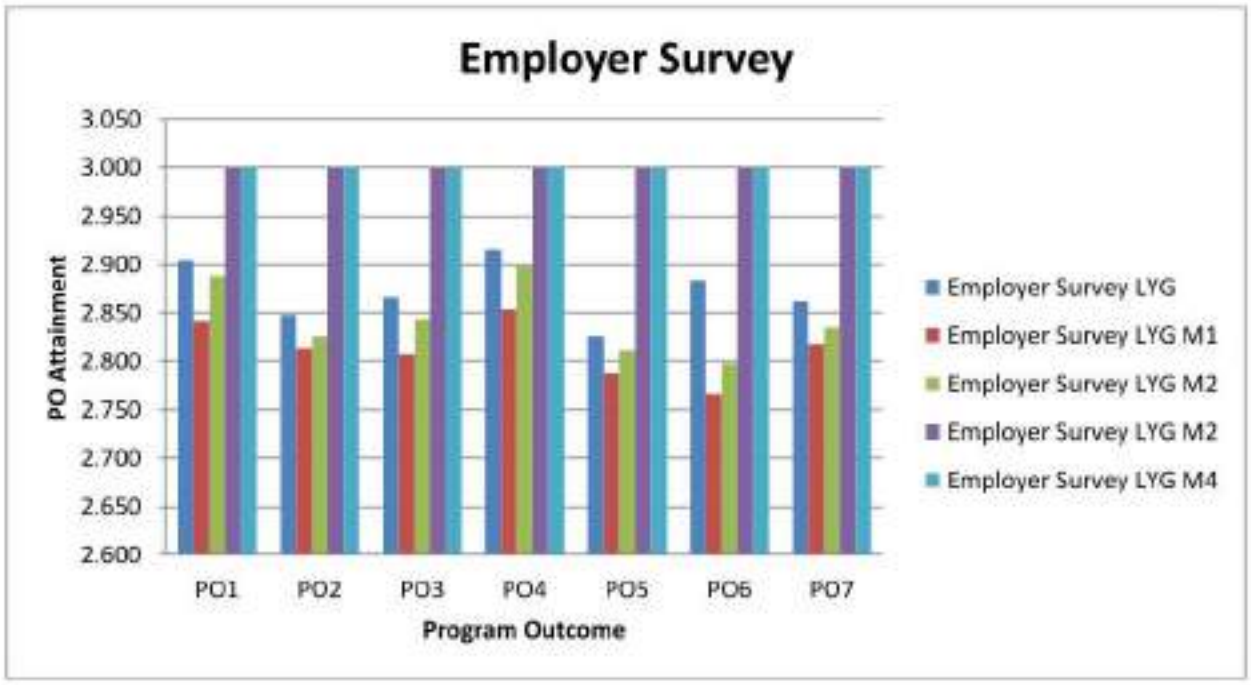
		PO1	PO2	PO3	PO4	PO5	PO6	PO7
Alumni Survey	LYG	2.936	2.864	2.906	2.858	2.937	2.863	2.878
	LYG M1	2.886	2.814	2.828	2.788	2.894	2.782	2.862
	LYG M2	2.924	2.825	2.886	2.846	2.918	2.838	2.812
	LYG M3	3.000	3.000	3.000	3.000	3.000	3.000	3.000
	LYG M4	3.000	3.000	3.000	3.000	3.000	3.000	3.000



Employer Survey

Response of Employer's in program attainment versus program outcomes

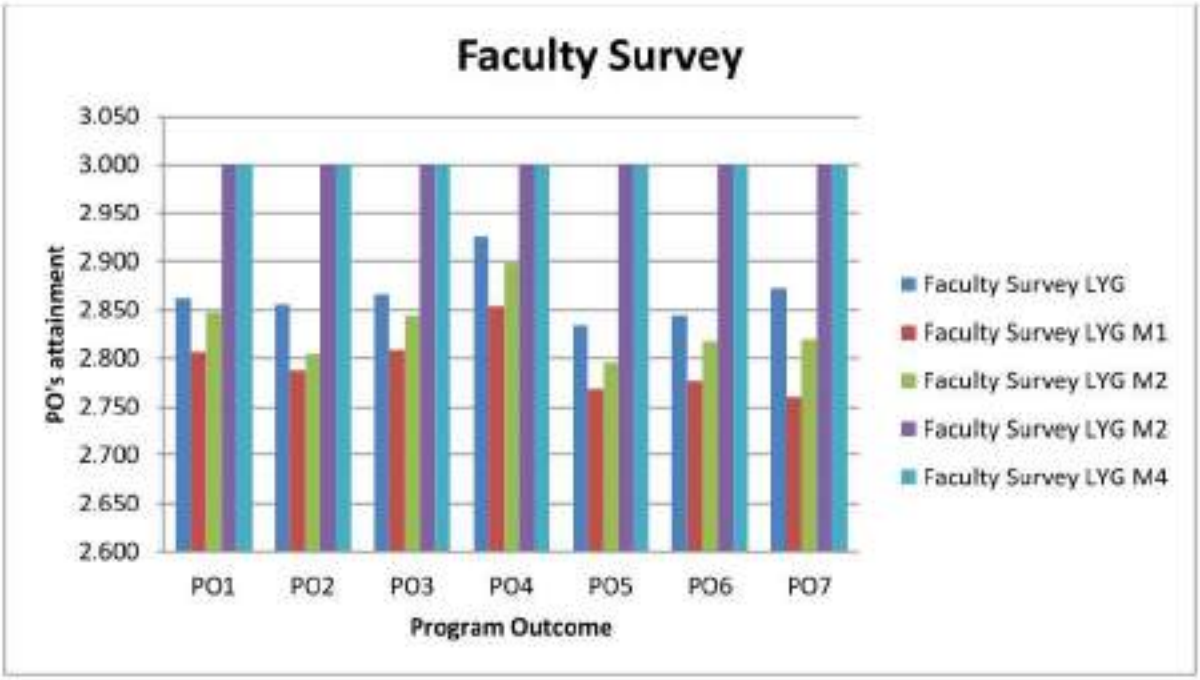
		PO1	PO2	PO3	PO4	PO5	PO6	PO7
Employer Survey	LYG	2.904	2.848	2.866	2.916	2.826	2.884	2.862
	LYG M1	2.842	2.814	2.808	2.854	2.788	2.766	2.818
	LYG M2	2.888	2.826	2.844	2.898	2.812	2.798	2.835
	LYG M2	3.000	3.000	3.000	3.000	3.000	3.000	3.000
	LYG M4	3.000	3.000	3.000	3.000	3.000	3.000	3.000



Employee Survey

Response of Employee's in program attainment versus program outcomes

Faculty Survey								
		PO1	PO2	PO3	PO4	PO5	PO6	PO7
Faculty Survey	LYG	2.862	2.856	2.866	2.926	2.834	2.844	2.872
	LYG M1	2.806	2.788	2.808	2.854	2.768	2.776	2.760
	LYG M2	2.848	2.804	2.844	2.898	2.796	2.818	2.820
	LYG M2	3.000	3.000	3.000	3.000	3.000	3.000	3.000
	LYG M4	3.000	3.000	3.000	3.000	3.000	3.000	3.000



Action taken Report on Stakeholder's Feedback

Institution collects stake holder's feedback for PG programs. The educational process culminating in a degree of the student is dynamic and constantly evolving between stakeholders. It is therefore, Feedbacks from students, faculty, alumni and employer are considered for continuous improvements in curriculum and other academic aspects. The ultimate goal of stakeholder's feedback is to get useful insights for the purpose of improvement in all aspects of teaching, learning, assessment and infrastructure facilities. Inputs collected from all the stake holders are analyzed and carried forward in Board of Studies (BoS) for approval. After getting approval in BoS, the curriculum with the incorporation of recommended changes if any is sent to Academic Council for their final endorsement. The following structure describes the significance of stakeholders for the development.

1. **Student Graduate Survey Feedback:**

   ➢ Inputs from the graduating students on design of curriculum, services extended incorporation of novel teaching technologies and their overall experience related to facilities and educational resources. However, graduating student will be submitting their overall impression related to institute and this feedback is collected.

2. **Alumni's Feedback:**

   ➢ Alumni are considered as the ambassadors to the outside world. They are in a position to evaluate the extent to which the programme is effective in achieving the desired objective. As an alumnus they share their experience and participate in curricular updates in view of emerging technologies and tools.

   ➢ Alumni survey is conducted, through which suggestions are provided to design syllabus which makes the students industry ready and well prepared towards competitive examinations.

3. **Employer Feedback:**

   ➢ Employer feedback helps in enriching the program with industry relevant courses (Electives) which enable bridging the gap between the program curriculum and industry requirements.

4. **Faculty Feedback:**

   ➢ The analysis of the faculty feedback reflects the adequacy and availability of teaching-learning facilities. Faculty play a pivotal role, their feedback was taken into consideration for enriching and modifying the curriculum. Faculty continuously monitor the updations required in the syllabus and once the syllabus is finalized and approved , through the required innovative pedagogical techniques, focus on the delivery, learning by the students and outcomes of the course. Faculty feedback supports in bridging the feedback from the other stakeholders.

In view of identifying the gap in the syllabus as per the requirement of various stakeholders, the Department has taken feedback on curriculum from various stakeholders. Suggestions like more smart and experiential leaning and approach to competitive exams, relevant to the framing of the syllabus of various courses were consolidated and discussed in BOS meeting. Since few courses are multidisciplinary, faculties from various departments are actively participating in the syllabus restructuring process, as being members of Board of studies. These suggestions were communicated to the chairman of the board for the proper redressal of suggestions.

Following actions were prominently taken,

1. Few emerging specializations like Business Analytics and Operations have been introduced.
2. More Outbound industrial trainings, value added course and workshops are been conducted.

3. Expert guidance lecture, Soft skill training, Aptitude training and carrier guidance lecture are conducted on different topics to inculcate interest in subjects.
4. Board of Studies meeting will be conducted designing and implementing the curriculum.
5. FDP and MDP will be conducted in order to enrich their knowledge on recent trends and innovative ideas

Principal

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