

Manav Rachna University, Faridabad
(formerly Manav Rachna College of Engineering)

**MINUTES OF THE
FOURTH MEETING OF THE
ACADEMIC COUNCIL**

Dated: April 12, 2017



MINUTES OF THE FOURTH MEETING OF THE ACADEMIC COUNCIL OF MANAV RACHNA UNIVERSITY HELD ON WEDNESDAY, DATED 12.04.2017 AT 11:00 A.M. IN THE BOARD ROOM, A BLOCK, MRIU CAMPUS, FARIDABAD.

A meeting of the Academic Council was held on 12.04.2017 in the Board Room, A- Block, MRIU Campus, Faridabad.

The following were present:

1. Prof.(Dr.) Sanjay Srivastava, Vice Chancellor;
2. Prof.(Dr) V.K. Mahna, Pro Vice Chancellor;
3. Prof.(Dr.) P. K. Bhatnagar, Professor, Dept. of Elecs, D.U;
4. Prof.(Dr.) R. K. Singh, Professor, Delhi School of Economics, D.U;
5. Prof.(Dr.) M. S. Khurana, Dean (Academics)& HoD (Mech. Engg.);
6. Prof.(Dr.) B.M. Bahal, Dean (Applied Sciences & Research);
7. Prof.(Dr.) M.R. Tyagi, Dean (Engineering);
8. Prof.(Dr.) Rajat Gera, HoD (Management & Commerce);
9. Prof.(Dr) Rajeev N. Rai, HoD, (Mech. Engg.)
10. Dr. Y.K. Awasthi, HoD (E & C Engg.);
11. Ms. Hanu Bhardwaj, HoD (Computer Science &Tech).;
12. Dr. Haider Abbas, HoD, (Physics);
13. Dr. Megha Mittal, HoD, (Chemistry);
14. Dr.A.K. Awasthi for, HoD, (Mathematics);
15. Mr. Jaideep Singh, HoD, (Humanities)
16. Dr. Babita Parashar, HoD (Education);
17. Prof.(Dr.) A. K. Gupta, Professor, (Chemistry);
18. Prof.(Dr.) B.D. Pathak, Professor /(Mech. Engg.);
19. Prof.(Dr).Jai R. Bhatnagar, Professor (CST);
20. Prof.(Dr.) D.K. Sharma, Professor (Physics);
21. Dr. Sangeeta Banga, Associate Professor (Mech. Engg.);
22. Ms. Meena Kapahi, Associate Professor (Mech. Engg.);
23. Dr. S.K. Shukla, Associate Professor;
24. Dr. Varsha Vahini, Associate Professor;
25. Dr. Kameshwar Singh, Registrar / Member Secretary;

Prof.(Dr.) S. K. Garg, Pro Vice Chancellor, Delhi Technological Univ., Delhi & Dr. S.K. Goel, Executive Director, Star wires(India) Ltd. Faridabad and Dr. Vandana Singh, Associate Professor, Dept. of Education, IGNOU, New Delhi could not



attend the meeting due to their pre-occupation in other professional engagements. They were granted leave of absence by the Chair.

The following are the minutes of the meeting:

4.1 Opening remarks by the Chairman:

The Chairman welcomed the Members present in the meeting and introduced the new members of the Academic Council. He extended a special welcome to all the new members of the Council and said the council shall be benefitted from the wisdom of new members. He further mentioned that the last semester has gone well in all respects whether it is academics or examination and declaration of the results. It was concluded in a time- bound manner for which all, especially Prof. Mahana, Prof. Meenakshi and the examination team deserve huge accolade. He also mentioned about the new admissions under Ph.D. Program and apprised the members that this time, the university has been little choosy as it was not getting the Supervisors to supervise and guide the scholars and therefore, took 29 candidates, out of which 26 have joined the program which is a sizable number for a new University.

The Chairman further mentioned that Manav Rachna University is becoming cashless and thrust is on to become completely cashless campus from December, 2017. The MR organized a national Conference on "Autonomy of Education" in association with Shiksha Sanskrit Uthan Trust on April 01-02, 2017. A large number of participants attended this conference. Hon'ble Governor of Haryana was the Chief Guest in its valedictory session. Manav Rachna Excellent Award ceremony was also organized on the day and awards were given to five eminent personalities for their significant role in the area of their work on the recommendation of a Jury headed by Padma Shri Prof. Pitam Singh.

Shri Rajan Nanda, President & MD, Escorts Group was honored with life time achievement award , Shri. R. C. Bhargava, President, Maruti Suzuki Group for nation building, Shri. Dinesh Kumar Sharaf, President & MD ONGC, for Corporate & Industries, Ms. Shradha Suri, MD, Subros Group, as Youth Eyes and Ms. P.V. Sindhu, Badminton Champion as sports icon.

The Hon'ble Governor also launched a book titled "The Timeless wisdom from Gita and the Art of Leadership authored by Prof. Sanjay Srivastva. The Hon'ble Governor lauded the efforts put forth by Prof. Srivastva to educate the masses with the messages emanating from Shrimad Bhagvat Gita.

The ceremony was followed by another event called INNOSKILL-I 2017, an annual technical event which was participated by large number of students of the University. The inaugural function was held on 03.04.2016. MD, Minda Group and MD & CEO Manish Kumar, NSDC was guest of Honour in the valedictory function held on 4th April,2017. He put on record his appreciation to the outgoing



members, namely, Ms. Sanjana Malhotra & Dr. Deepa Arora for their contribution in deliberations of the Council. With these words, he concluded his remarks and requested the Registrar to carry out the proceedings of the Council. The Registrar then took up the agenda of the meeting one by one as follows;

4.2 Confirmation of the Minutes of the last meeting of the Academic Council held on 20.10.2016.

The Academic Council is informed that Minutes of the last meeting held on 20.10.2016 were circulated to all the members vide letter no. MRU/AC (A&M)/2015-16, dated 16.12. 2016, no comments were received from any one of the members. The Council was requested to approve the Minutes.

Decision: Academic Council approved the Minutes of the last meeting.

4.3 Action Taken Report on the decisions taken in the Third meeting of the Academic Council.

| Sl. No. | Agenda | Decisions | Action Taken thereon |
|---------|---|---|---|
| 1. | Opening remarks by the Chairman | - | - |
| 2 | Confirmation of the Minutes of the last meeting of the Academic Council. | The Academic Council confirmed the minutes of the last meeting. | Action were taken as approved |
| 3 | Action Taken Report on the decisions taken in the First meeting of the Academic Council. | Academic Council took the "Action Taken Report "on record | .- |
| 4 | Matters for Information | Academic Council took all the above information on record. | No action required. |
| 5 | Approval of Research Supervisors | Academic Council approved the allocation of Research Supervisors | Allocation of supervisors made accordingly. |
| 6 | Approval of Admissions made to the UG/PG Programs for the Academic Session, 2016-17. | Academic Council approved the admissions made in all the UG & PG programs for the Academic Session, 2016-17 | No further action required. |
| 7 | Admission policy for ongoing B.Tech. B.Tech (Lateral), M.Tech., B.Sc. (H), BBA and M.Sc. programs for the Academic Session, 2017-18 | Academic Council approved the proposal | Admission policy was incorporated in the Admission Brochure 2017-18 |
| 8 | Policy for admission to B.Ed. & Integrated B.Ed. programs. | Academic Council approved the proposal,. | Admission policy was incorporated in |



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| | | | the Admission Brochure 2017-18 |
| 9 | Introduction of a new PG Program Master of Arts in Education M.A.(Education) | Academic Council approved the same. | The Programs will be offered from 2017-18 and accordingly it is mentioned in the admission brochure 2017-18. |
| 10 | Introduction of LLB (3 years), B.A.L.L.B (5yrs), BBALLB (5yrs) and B.Com. LLB (5 yrs) Programs from the Academic session,2017-18. | Academic Council approved the proposal. | Program is inducted in the Admission Brochure 2017-18 subject to Approval from the BCI. The visit of the Committee of the BCI is awaited. |
| 11 | Approval of Regulation on Unfair means in the Examination | Academic Council approved Regulation with modification that "Unfair Means Committee" should be substituted with the "Committee for prevention of unfair means" at all the places in the Regulation | Approved regulation is circulated among the Faculties/Departments for information and concurrence. |
| 12 | Approval of Regulation on prevention of Plagiarism in Research Work | Academic Council approved the Regulation on prevention of Plagiarism in Research Work | Approved regulation is circulated among the Faculties/Departments for information and concurrence. |
| 13 | Reorganization of Master in Business Administration (MBA) Programs | Academic Council approved the proposal | No action required. |
| 14 | Approval of Program Structure & Syllabus for B. Tech. Computer Science & Engineering and Information Technology. | Academic Council approved the syllabus and program structure of B. Tech. Computer Science & Engineering and Information Technology with the stipulation that henceforth, such documents be submitted for perusal of the Members of the Council well in advance of the date of scheduled | Approved syllabus is being followed by the Department in practice. No further, action required. |



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| | | Meeting. | |
| SA-1 | Admission Brochure for the Academic Year 2017-18 | Academic Council approved the same. | Admission Brochure published accordingly.(Ar range copies for circulation) |
| SA-2 | Introduction of New B. Tech. Program, Industrial Engineering & Management from 2017-18 | Academic Council approved the same | A presentation was made by the University before the Govt., as desired by the DHE. Formal approval is awaited. |
| SA-3 | Approval of Program Structure & Syllabus for First year of the BBA and MBA Programs | Academic Council approved the syllabus and program structure of MBA & BBA 1 st semester with stipulation that henceforth, such documents be submitted for perusal of the Members of the Council at least seven days in advance of the date of scheduled Meeting. | Approved program structure & syllabus is being followed by the Department in practice. No further, action required. |
| SA-4 | Approval of Program Structure & Syllabus for B. Sc. (Hons.) & M. Sc. Programs - Physics, Chemistry and Mathematics. | Academic Council approved the syllabus and program structure of B.Sc (Hons.) and M.Sc. with the stipulation that henceforth, such documents be submitted for perusal of the Members of the Council at least seven days in advance of the date of scheduled Meeting. | Approved program structure & syllabus is being followed by the Department in practice. No further, action required. |

The Academic Council was requested to take the Action Taken Report on record.

Decision: Academic Council took the Action Taken Report on record.

4.4 Matter for information

A). Constitution of Board of Studies and Board of Faculties for the Department of Education

Academic Council is informed that ,as per the clause 20 & 21 in the First Statutes of the University, Board of Studies and Board of Faculty of Department of Education have been constituted by the University with the approval of the Competent authority and office order thereof issued under intimation to all the concerned .



B). Students Achievements

It was submitted for information of the Hon'ble members that students of the University participated in various events organized by other institutions/organizations from time to time during the last seven months and achieved distinction in many activities/events. The highlights of the same are mentioned hereunder for information and record.

- Team **“TECHSPIRITS”** comprising of Vansh Mudgil, Tarun & Abhijeet (ME 8th sem) participated in **Valeo Innovation Challenge 2017 organised by Valeo Ltd Paris** and have been shortlisted as semifinalists. **Total of 1628 teams participated across the globe and out of these only 24 made it through the semifinals.** All the selected teams will be provided with the grant of **€5,000 to develop the prototype.** Team submitted the concept under the mentor ship of Dr. Y.K Awasthi (Associate Prof. ECE Department-MRU) and Final round of the competition will take place at Paris in October.
- **In September, 2016,** Neeraj Saini of ECE was invited by **University of Pennsylvania** to participate in **Fall's Penn Apps event.** He attended the same followed by another event **HackMIT organized at Massachusetts Institute of Technology.** He received funding of **USD 500 from University of Pennsylvania** to attend the event.
- **In September, 2016,** Neeraj Saini of ECE was invited to showcase his R&D work at the **HUB week. Founded by The Boston Globe, Harvard University, MIT** and Mass General Hospital, HUBweek is a first-of-its-kind civic collaboration that brings together the most creative and inventive minds making an impact in Boston and around the world.
- **Neeraj Saini of ECE has been recognized as one of the world finalists for the Tomorrow challenge 2016,** a global event for most promising Science Technology projects and Startups. The event was held at **Paris in the month of October.**
- **Team Grivaditi, Eye Luminatae from MRU got the Jurry's choice award in Yahoo Accenture innovation Jockey's Season 5 held in October,2016 at Bangalore.**
- Three teams from MRU, **Team Path Finders (Alpana (ECE) & Nidhi Goel (CSE)), Team E2 (Vikrant Prashar (ME)) & Team MANAS (Kapil Tewatia (ME))** got shortlisted for the finals under different categories of Yahoo Accenture innovation Jockey's Season 5 and represented Manav Rachna University.
- **Team CHAIN RXN from MRU (ME Department)** Participated in competition **Efficycle 7** held at Lovely Professional University and was ranked under **top 20 out of 138 total teams** that participated from various institutes of the country.



- Aman Bhardwaj of B.Tech. CSE 2nd year and Yuvan Saluja of B.Tech. CSE 1st year participated in the Extempore held in Students' Pulse session during the 30th TIFAC Foundation Day organized at IIT, Delhi Yuvan Saluja got the 3rd position and received certificate from Dr. Prabhat Ranjan, ED, TIFAC.
- Students of Manav Rachna University participated in a **State Level Event, 'IGNIDEA 2017'** organized by the English Literary Society, the Environment Club and the Planning Forum of DAV Centenary College, Faridabad on 22nd March 2017. Alpana Bhanot (ECE 3rd year) bagged second prize in English Debate Competition. Shailaish Raathi and Shubham Aggarwal (ME 3rd year) won second prize in Quiz Competition.

Decision: Academic Council took all the information on record.

4.5 Matter of Ratification

(a) Admissions of Mr. Mudit Bhandari and Ms. Perna Sharma through Migration in B.Tech, CSE, 2nd Semester

Hon'ble Members of the Council were informed that the clause 3.1 of the First Ordinance of the University has the provision for the admission in 2nd and subsequent semesters through migration under UG program. Accordingly, request of two candidates Mr. Mudit Bhandari of MIT Manipal and Ms. Perna Sharma from SRM University, Modi Nagar were considered for admission in B.Tech, CSE, IInd semester and B.Tech, CSE IIIrd semester respectively by the committee headed by the Dean Academics of the University. The Committee after going through past academics performance of both the candidates and carrying out a mapping of the course studied by the candidates in the previous semesters and the one offered by the University in the semester, admissions are requested by the candidates, has recommended them for admission in B.Tech CSE 2nd semester subject to satisfying certain other requirements as minuted in the Minutes of the Committee. Both the candidates, namely, Mr. Mudit Bhandari & Ms. Perna Sharma were, accordingly, granted admissions provisionally in the B.Tech, CSE 2nd Semester after acceptance of the recommendation by the Vice Chancellor. The Council was requested to ratify the admissions made by the University.

Decision: Academic Council ratified the above admissions.

4.6 Approval of Panel of Experts for the Department of Education.

It was submitted for information of the Council that as per the provisions envisaged in sub clause x (n) of the clause 8 of the First Statutes, panel of experts has to be drawn by the Academic Council for constituting the Board of Studies, Faculty and the Selection Committees. Accordingly, HoD was requested to suggest the names of the eminent experts from the field of education for constitution of panel of expert for the Department of Education. Based on the suggestion received from the HoD, **a list containing the names of experts** is prepared by the University and tabled in the meeting for consideration of the Academic Council.



One of the Hon'ble member suggested that it be taken on record that as per the UGC mandate, only Professors would be called as an Expert for selection of the faculty members for all the three cadres i.e. Assistant Professor, Associate Professor and Professor. Also the name of Prof. Arvind Kumar Jha, Professor and Dean, Education, Mahatma Gandhi International Hindi University, Wardha, Maharashtra was included in the panel of proposed experts. With this , the Council approved the Panel of Experts for the Dept. of Education.

Decision: Academic Council approved the panel of experts for the Department of Education. A copy of the same is annexed as Annexure –I.

4.7 Approval of admissions made under Ph.D. Programs

Academic Council was informed that the University in year 2015 had decided to enroll 105 Research Scholars under the Ph. D programs in three faculties i.e. Faculty of Engineering (35), Faculty of Applied Sciences (40) and Faculty of Management & Humanities (30) and admitted 47 Research Scholars against these seats in 2016 for the above three faculties. Currently 43 research scholars are on the roll of the University.

The available 62 seats were further notified for admission in leading newspapers and on the University website in December 2016 for admission to Ph.D programs. In response to that 58 candidates applied for admission on different dates. The Departmental Research Committee of the Departments scrutinizes the applications to see the eligibility of the candidates and thus, shortlisted 39 Candidates for the written test which were conducted on three different dates. Four candidates were exempted from appearing in the Test as per the provisions in the Ordinance/Regulation and the remaining 35 appeared in the Test.

The candidates were further, interviewed by the DRC and the Selection Committee constituted for the purpose. Based on the marks scored by the candidates in the written test, presentation made before the DRC and performance in the interview, the Selection Committee recommended 29 candidates for admission to Ph.D. programs. All the selected candidates were issued the provisional admission letters with the approval of the Vice Chancellor, however, 26 candidates have joined the program. The classes for their course were started from 04.02.2017.

The Council was requested to approve the admissions under Ph.D. programs.

Decision: Academic Council approved the admissions of 26 candidates under the Ph.D. programs. List annexed as Annexure no. II

4.8 Approval of Program Structure and Syllabus for the B.Ed. & Integrated B.Ed. programs

Hon'ble members of the Academic Council were informed that the University shall start offering the B. Ed & Integrated B. Ed Programs under the Department of Education from session 2017-18. A Committee comprising of the HoD and



other faculty members had deliberated at length on the issue and also made consultation with the eminent educationist in the field and based on outcome of the discussion, it has come out with the detailed program structure and syllabus for all the three programs which B. Ed (2 Years), B.A B. Ed (4Years) & B. Sc B. Ed (4 Years). The Copies of the program structure and syllabus for all the three programs were tabled in the meeting. The Council after deliberation approved the Program structure and syllabus for the B.Ed. n Integrated B.Ed. Programs.

Decision: Academic council approved the program structure and syllabus for the B.Ed. & B.A./B.Sc. B.Ed. programs.

4.9 Approval of Massive Online Courses to be offered by the University as per the MHRD guidelines on the subject matter

Academic Council was informed that this office has received a DO letter dated 30.01.2017 (received on 17.02.2017) addressed to the Vice Chancellor from the Secretary, UGC for submission of MOOCs courses approved by the University and the academic session from which the courses are going to be recognized. In the matter two communications referred therein were not received by the University. As per the contents of the communication, the University Grants Commission was asked by the Ministry of Human Resource Development, Government of India vide its letter No. F.8-2612014-TEL dated 21st July, 2016 to upload the List of MOOCs Courses which are proposed to be launched in August, 2016.

It is pertinent to mention here that the University Grants Commission has notified UGC (Credit Framework for Online Learning Courses through SWAYAM) Regulation, 2016 in the Gazette of India on 19th July, 2016 wherein credit transfer for online courses under SWAYAM platform of Government of India has been defined. The Regulations are also available on UGC website.

The Commission has asked the Universities to go through the List of MOOCs Courses and UGC Regulations available on UGC website and take appropriate action for introduction of MOOCs courses through SWAYAM platform of Government of India for the benefit of the students of the University after approval from the various academic bodies of the University.

To identify the courses a Committee comprising the Dean Academics (Chairperson), Deans & HoDs was constituted vide order dated 04.03.2017 the committee has now suggested that the following MOOCs courses may be offered by the University.



| S. No. | Program/ Semester | Subject/ | MOOC's Course Name | Department |
|--------|---|----------|---|--|
| 1 | M.A. (Education) Fourth Semester | | Quantitative Methods | Education |
| 2 | Elective subject, Fifth Semester | | Basic of Finite Element Analysis-1 | Mech. Engineering |
| 3 | Elective subject, Seventh Semester | | Food Law and Standards | Law * subject to approval of the Program by BCI. |
| 4 | Elective subject, Seventh Semester | | Technology Transfer through Joint Venture | |
| 5 | B.Sc. (H) Mathematics, Fifth Semester | | Probability and Stochastic for Finance | Applied Sciences |
| 6 | B.Sc. (H) Physics Elective subject -Fifth or Sixth Semester | | Physics of Materials | |

The Council was requested to approve the proposed MOOCs Courses proposed to be offered from the session 2017-18.

Decision: Academic council approved the same.

4.10 Approval of format of Degree Certificate for UG/PG Programs

It is submitted for information of the Hon'ble Members that a team comprising of the Pro VC, Dean Examination, Dean Academic and DR Academic & Examination after detailed deliberation on the issue, have finalized the draft format of the Degree Certificate meant for UG/PG Programs. The degree format contains six security features viz. Barcode, CR Code, Foote (student Name & Roll No.), Watermark, Students name in zero size & Logo Stamp. The sample of the Degree Certificate shall be tabled in the meeting. The Council after deliberation made a suggestion that name of the University should also be written in Hindi along with English. With this suggestion, the Degree format was approved by the AC.

Decision: Academic council approved the format of the Degree Certificate. Approved format of Degree annexed as Annexure No. III.

4.11 Consideration and approval of Guidelines for implementation of Teaching, Learning and Assessment Process

It is submitted that the University has prepared Guidelines for the Effective Implementation of Teaching, Learning and Assessment Process. The aim of



these guidelines and standard operating procedures is to provide an effective framework for the delivery of high quality teaching and learning. This relates to all university faculties engaged in facilitating, supporting and managing learning. It provides detailed about the Planning of Teaching Learning Process, Best classroom practices/ Teaching methodologies for Student Centric Learning, Integration of ICT Tools, Student Mentoring, Assessments, Evaluation, Feedback & Review Mechanism and Manual for CO-PO/PSOs Assessment & Attainment for the effective implementation of Outcome Based Education. Guidelines & procedures are designed in line with University draft ordinances submitted with government for the approval.

These detailed guidelines and manual for CO-PO attainment are submitted for consideration and approval of Academic Council. Honorable members of the council deliberated on the subject matter and approved the same unanimously.

Decision : Academic Council approved the guidelines and manual for its effective implementation. A copy approved guidelines and manual is annexed as Annexure No. IV

4.12 Any other matter with the permission of chair.

a) The Hon'ble members were further apprised with the Placement Details (July, 2016 – March 2017) as under:

- i) No. of Companies visited for campus placement - 28
- ii) No. of Students eligible for placement - 233
- iii) No of Students placed - 137
- iv) % Placed till March 2017 - 58.08%
- v) Highest package offered – Rs. 6.80 lacs per annum
- vi) Average package offered- Rs. 3.2 Lacs per annum

b) Hon'ble Chairman, at last, requested some of the senior faculty members to apprise the Council about the activities undertaken by the Depts. and developments made so far.

Pro. Jai R. Bhatnagar mentioned that the computing cluster has now research lab in the development with the support of hon'ble. Management, we have student winners at Microsoft imagine and Ericsson awards, copyrighting of work to commence. We also have planned summer internships 2017



Prof. Rajiv Nandan Rai, HoD, Mech. Engg. explained about the activities being under taken by the mechanical cluster. He stated that the cluster has been, presently, working for upcoming competition called SUPRA SAE (Formula car prototype). This event is likely to be held in September 2017. we have manufactured two electric bikes and one dragger at MRIIC Hangar. We won the first prize in ANVESHAN-2017 held at Chennai for our work on Air filters to be mounted on vehicles to remove pollution. On 24 march 17 three teams of ME MRU students participated in VALEO Innovation Challenge and one of our teams qualified in top 24 from all over the world.

Prof. B.M. Bahal, Dean, Research mentioned that on the initiative of management and senior functionaries of MRU, it was decided that research activities should start at Undergraduate Level also. ACCENDERE team from CL Educate along with the Faculty of Manav Rachna University jointly started the research program in II year B. Tech. in all branches (CSE, ME and ECE) as a regular course of one credit per semester. This initiative taken up from July 2016 onwards has already started giving encouraging results as research papers in Journals and conferences. Progress report of Atmospheric and Environment cluster from MRU was also shared with Council members. In total six conference papers were presented at YMCA University of Science and Technology in March 2017 by M Sc and B Tech CSE students. One of the conference paper of Ms Akanksha Ahuja was adjudged as the best paper in the category.

Prof. A.K. Gupta talked about Chemistry Department Activities and said that Chemistry Department had established a MR Chapter of Green Chemistry Network Centre (GCNC) at the campus. Department started an Invited Lecture Series where Expert Lectures were organized for students and faculty. Also a Green Chemistry Workshop and a Workshop on Innovative Laboratory Teaching Methodology was organized for B.Sc. and M.Sc. students. Students also had an Industrial Visit to Shreya Pharmaceuticals, Roorkee and a visit to IIT Roorkee's Analytical Instruments Facility.


(Dr. K. Singh)
Registrar / Member Secretary *

Ref. MRU/AC (A&N)/Vol. II/2017

Dated: 12.04.2017

To,

1. Ps to Chancellor for kind information to Hon'ble Chancellor
2. PS to VC for kind information to Hon'ble Vice Chancellor, MRU
3. PS to VP, MRIU for kind information to Hon'ble Vice President

4. Prof.(Dr) V.K. Mahna, Pro Vice Chancellor;
5. Prof.(Dr.) S. K. Garg, Pro Vice Chancellor, DTU, Delhi
6. Dr. S.K. Goel, Executive Director, Star wires(India) Ltd. Faridabad
7. Prof.(Dr.) P. K. Bhatnagar, Professor, Dept. of Elecs, D.U;
8. Prof.(Dr.) R. K. Singh, Professor, Delhi School of Economics, D.U;
9. Dr. Vandana Singh, Associate Professor, Dept. of Edu., IGNOU, NewDelhi
10. Prof.(Dr.) M. S. Khurana, Dean (Academics)& HoD (Mech. Engg.);
11. Prof.(Dr.) B.M. Bahal, Dean (Applied Sciences & Research);
12. Prof.(Dr.) M.R. Tyagi, Dean (Engineering);
13. Prof.(Dr.) Rajat Gera, HoD (Management & Commerce);
14. Prof.(Dr) Rajeev N. Rai, HoD, (Mech. Engg.)
15. Dr. Y.K. Awasthi, HoD (E & C Engg.);
16. Ms. Hanu Bhardwaj, HoD (Computer Science & Tech).;
17. Dr. Haider Abbas, HoD, (Physics);
18. Dr. Megha Mittal, HoD, (Chemistry);
19. Dr.A.K. Awasthi for, HoD, (Mathematics);
20. Mr. Jaideep Singh, HoD, (Humanities)
21. Dr. Babita Parashar, HoD (Education);
22. Prof.(Dr.) A. K. Gupta, Professor, (Chemistry);
23. Prof.(Dr.) B.D. Pathak, Professor /(Mech. Engg.);
24. Prof.(Dr).Jai R. Bhatnagar, Professor (CST);
25. Prof.(Dr.) D.K. Sharma, Professor (Physics);
26. Dr. Sangeeta Banga, Associate Professor (Mech. Engg.);
27. Ms. Meena Kapahi, Associate Professor (Mech. Engg.);
28. Dr. S.K. Shukla, Associate Professor;
29. Dr. Varsha Vahini, Associate Professor;



PROPOSED PANEL OF EXPERTS FOR DEPARTMENT OF EDUCATION

1. Prof. Anita Rastogi, Department of Educational Studies, Jamia Millia Islamia, New Delhi.
2. Prof. Fauzia Nadeem, Institute for Advanced Studies in Education, Jamia Millia Islamia, New Delhi.
3. Prof. Bharti Baweja, Dean & Head (Retd.), Central Institute of Education, University of Delhi.
4. Prof. Pradeep Mishra, Dean & Head, Dept. of Education, CCU, Meerut.
5. Prof. Vibha Joshi, Department of Education, IGNOU, New Delhi.
6. Dr Vandana Singh, Associate Professor. Department of Education, IGNOU, New Delhi.
7. Prof. Anjuli Bajpayee. Department of Education, B.H.U. Varanasi.
8. Prof. Amit Kauts, Department of Education, Central University of Jammu, Jammu.
9. Dr Manas Ranjan Panigrahi, Programme Officer-Education. CEMCA-CommonWealth of Learning, New Delhi.
10. Dr. Prabhat Kumar Mishra, NCERT, Aurobindo Marg, Adchini, New Delhi, Delhi 110016.
11. Professor Arvind Kumar Jha, Professor & Dean Education, Mahatma Gandhi International Hindi University, Wardha, Maharashtra.



Manav Rachna University
Ph.D Batch 2016-17

| S.N | Application Seq No | Full Name | Roll No. | Fathers Name | Contact no | Email Address | Address | Subject Area |
|-----|--------------------|-----------------|--------------|---------------------|------------|----------------------------|--|---|
| 1 | MRU1601075 | Deepanshi | 2K17-PFE-001 | RAMPRASHAD | 9990301849 | charu210986@gmail.com | A 102 FIRST FLOOR, Sainik Colony, Faridabad | FOE-PhD-Department of Computer Science and Technology |
| 2 | MRU1600854 | Ekta | 2K17-PFE-002 | Kulwant Rai Sachdev | 9958787595 | ekta.fet@mriu.edu.in | 78A,b-9 udaygiri-2 ,Sector-34, Noida | FOE-PhD-Department of Computer Science and Technology |
| 3 | MRU1601069 | Gaganjot Kaur | 2K17-PFE-003 | Bhupinder Singh Nar | 9891523831 | gaganjot@mriu.edu.in | H. No 76, 1st Floor, Nitikhanda 1, Indrapuram | FOE-PhD-Department of Computer Science and Technology |
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Manav Rachna University



MANAV RACHNA
Vidyaparikshal

(Formerly Manav Rachna College of Engineering NAAC Accredited 'A' Grade Institution)
Established by Haryana State Legislature Act No 26 of 2014 & under section 2(f) of UGC Act 1656

बैचलर ऑफ टेक्नोलॉजी

(मकैनिकल इंजीनियरिंग)

प्रमाणित किया जाता है कि

जावेद अखतर आत्मज/आत्मजा अब्दुल जब्बार

विद्यार्थी फैकल्टी ऑफ इंजीनियरिंग एंड टेक्नोलॉजी को इस विश्वविद्यालय
द्वारा दिसम्बर, 2015 में आयोजित तत्सम्बन्धी परीक्षा उत्तीर्ण कर लेने के उपरान्त

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की उपाधि प्रदान की जाती है।

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(Mechanical Engineering)

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Son/Daughter of Abdul Jabbar

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Bachelor of Technology (Mechanical Engineering)

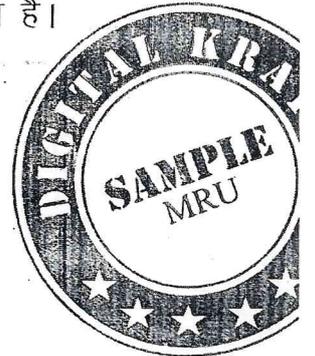
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for the said degree held in December, 2015 with

C.G.P.A. (Cumulative Grade Point Average) of 6.45 on 10 - point scale.

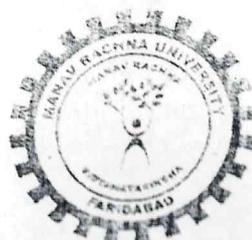
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कुलसचिव
Registrar



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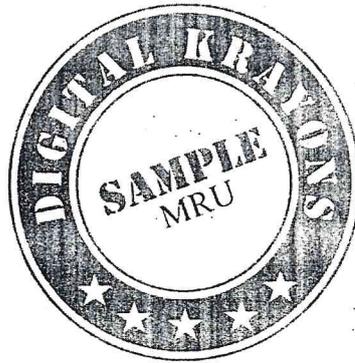
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MANAV RACHNA UNIVERSITY

(Formerly Manav Rachna College of Engineering)

Faridabad

Guidelines for Effective Teaching Learning & Assessment Process

Sector -43, Surajkund Badkhal Road, Aravali Hills, Faridabad- 121004

HARYANA

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Guidelines for Effective Teaching, Learning and Assessment Process

Manav Rachna University is committed to providing high quality teaching, learning and assessment to enable all learners to achieve their full potential. This will be achieved through high quality teaching and learning opportunities, rigorous assessment, feedback and the sharing of good practice.

The Teaching and Learning Guideline and Procedure aims to provide an effective framework for the delivery of high quality teaching and learning. This relates to all university faculties engaged in facilitating, supporting and managing learning.

1. DEFINITIONS

In these guidelines, unless the context otherwise requires —

- i. "MRU" refers to Manav Rachna University (State Private University, established under Haryana State Private University act 2006).
- ii. "UGC" refers to University Grants Commission, The University Grants Commission of India is a statutory body set up by the Indian Union government in accordance to the UGC Act 1956 under Ministry of Human Resource Development, New Delhi.
- iii. "ICT" refers to the Information and Communication Technology based tools for teaching and learning.
- iv. "e-Resources" refers to the electronic resources used for online information access.
- v. "MOOCs" refers to the massive Open Online Courses being offered through platforms including SWAYAN, Coursera, edX, Udemy etc. to learn new skills as audit pass courses and credit transfer.
- vi. "CIA" refers to continuous internal assessment by the course teachers for direct attainment.
- vii. "ESE" refers to End Semester Examination.
- viii. "SGPA" refers to Semester Grade Point Average for a Semester.
- ix. "CGPA" refers to the Grade Point Average for all the completed semesters at any point in time.

- x. "CO" refers to Course Outcomes.
- xi. "PO" refers to Program Outcomes.
- xii. "PSO" refers to Program Specific Outcomes.
- xiii. "PEO" refers to Program Educational Objectives.
- Xiv "DAC" Department Academic Committee

2. SCOPE

Teaching, learning, and assessment are the profound functions of a university. The university shall therefore continue to follow a strict regimen of teaching-learning procedures with the best evaluation tools. The goal of the assessment of the teaching-learning process is to be able to show all of its stakeholders, particularly students, employers, community organisations, and regulatory bodies, that the academic program's course outcomes are coagulated and that the university instruction is sacred and of the highest degree by:

- placing the learner at the center of the learning process,
- all learners having the opportunity to succeed and be empowered to fulfill their potential,
- developing employability skills as part of the curriculum,
- providing excellent progression opportunities, to employment, entrepreneurship, or further and higher learning
- using assessment to provide effective learning opportunities through feedback,
- using research to inform and inspire students,
- the subject expertise and pedagogic content knowledge of staff leading to excellent teaching and learning
- actively promoting best practice in terms of embedding sustainability

3. PLANNING STAGE

- a. The academic calendar is created by the university at the start of each semester so that departments can plan and carry out their activities effectively. Students should receive an academic calendar for each University programme.
- b. University will organise three weeks orientation programs/induction programmes for newly admitted students in the first semester as well as a

half-day orientation at the start of every semester in order to inform students about the various academic policies and procedures. This is done to promote homogeneity among the diverse categories of students.

- c. Each department shall create a system for unique teaching and learning strategies to be used to meet the needs of both slow learners and advanced learners,
- d. Departments shall develop a schedule for providing remedial classes for all slow learners to enhance their results and satisfy the needs of all individuals with, where appropriate, the full involvement of Inclusive Learning in the planning and implementation of the session.
- e. To maintain an inclusive academic atmosphere in the department, each department will develop a system of peer learning, student mentorship, team building, and events for the involvement of student in academic and extra-curricular activities.
- f. Plans for co-curricular, extracurricular, and entrepreneurship-related events shall be made by the department on the basis of in advance and carried out scrupulously.
- g. The departments shall emphasis experiential learning, participatory learning, and problem solving learning more through the utilisation of both traditional and contemporary teaching approaches.
- h. Classroom deliveries in all the programmes must be supported by student seminars, expert talks, webinars, projects, industrial visits, fieldwork, and internships etc.
- i. Students who are advanced learners and those who have a passion for research may collaborate on research projects with faculty members and work under their mentorship.
- j. The quality of the teaching-learning process will be improved by constantly analysing student feedback on the course delivery and thereby taking necessary corrective actions as suggested by the experts.
- k. The Department will plan the teaching load well in advance in cooperation with the course coordinators, and the Dean of the Faculty/School will properly review it.
- l. For effective academic delivery, session plans and assessment plans should be prepared for each course before the start of the semester. This must

- provide conclusive evidence of planning, include learning objectives appropriate for the level, and be used to monitor student or learner progress.
- m. Faculty will build on learners' prior knowledge and understanding, using formative assessment to monitor progress and inform future learning,
 - n. Course coordinator file should be made ready for every course of department and should be checked regularly by HoD's and Deans of the respective Faculty/School. It must include list of all the faculty members teaching a particular course along with their contact details and time table information, complete lesson plan.
 - o. Course Coordinator must conduct regular meetings with all the faculty members delivering the course and review the students performance in order to identify the advanced and slow learners and take subsequent initiatives.
 - p. Resources that support efficient teaching, learning, and evaluation must be available to students in order to accomplish the necessary learning outcomes.
 - q. Continuous assessment should be the integral part of evaluation and done through class tests, quizzes, presentations, seminars, role plays, case studies, group discussions etc.
 - r. To promote self learning and life long learning, students will be encouraged to register courses through MOOCs for credit transfer.

4. PRACTICES FOR INNOVATIVE TEACHING AND LEARNING

For shifting from teacher centric to student centric learning, each department needs to develop its own best practices to bring the best of teaching efficiency and effectiveness. These practices will help students to to apply critical and creative thinking to address real-world issues. Learning can be made more exciting as it incorporates more creativity through pedagogies like collaborative learning, project-based learning, case-based learning, and active learning, role play among others. Each faculty will work to keep a clear focus on the content while attempting to make the classes engaging and interactive. Faculty development programmes shall be organised on regular basis by the department or through central level for training the faculty on these newer approaches of teaching.

5. MENTORING SYSTEM

For a successful student support, they need to be mentored, counseled, and guided in a proper manner. These support mechanism are required by the students in order to help them deal with the academic, social, and personal issues that are hindering their progress.

While their transition from school to university environment, they occasionally experience such pressure which are not only academic but personal or professional in nature. These stresses could impair their pursuit's advancement. The university will have well-coordinated structure in place to help students maintain their equanimity while dealing with the annoyances of such stress factors.

- University has adapted horizontal mentoring system throughout the university that allows the teacher to concentrate on the key groups of the students. Each mentor group includes students from the same batch of a particular programme. This further has two stage mentoring- first is mentoring by mentor to mentees and second is peer mentoring (mentoring by students from the same group).
- By sharing their experiences with peers in a mentor-mentee group, including related to course, internship, project work, preparation towards placement and interviews, and many more, mentors can help students build specialised leadership and responsibility abilities.
- All newly recruited faculty member shall be hand helded by the senior faculty members and through FDPs to have trainings on right mentoring and counselling skills. The mentors can gain from this engagement by expanding their sphere of influence and being acknowledged for their contributions to the organization as a whole.

Guidelines for Effective Mentoring

- a) There has to be a proactive approach to assess the counselling and mentoring needs of the students.
- b) If necessary, counselling sessions will be scheduled with the support of outside professionals.
- c) For minimizing the dropout rate, strengthening academic achievement, boosting self-esteem, and confidence, and learning new skills mentoring targets will be set.

- d) Students consent must be taken for keeping the confidentiality into the counseling process.
- e) All the teaching departments will maintain pre-defined schedules for mentoring and counseling sessions which will be communicated to all the students well in advance.

6. ASSESSMENT

Assessment is an integral part of the teaching-learning process. Assessment of the students in the course shall be on the basis of two components unless specifically stated otherwise in the study scheme:

- 1) End Semester Examination (ESE)
- 2) Continuous Internal Assessment (CIA)

Continuous Internal Assessment must be an ongoing activity and shall be conducted with an objective of training a student to put in sustained, steadfast and disciplined effort over the entire period of study. It shall be the responsibility of concerned Board of Study to finalize the scheme of evaluation for a particular course and same shall be recommended to the Academic Council for its approval. Continuous assessment plan shall be designed right in the beginning of semester and shall be communicated to all the students. Summative assessment is a method of judging the outcome of a course at the end of the course activities. This will be conducted by the controller of examination.

Right in the beginning of semester, all details pertaining to examination schedule and course assessment process must be made known to students. Weightages of all the assessments, Mid-term/sessional tests, internal assessments, end semester examinations shall be decided as per ordinances/academic regulation or any other guidelines issued by the university.

Post Examination process

To consolidate and declare the result within stipulated time, time-bound spot evaluation should be carried out. The results shall be declared on the website and notice boards of the examination cell. Open House shall be organized as per schedule mentioned in the examination calendar & answer scripts shall be shown to the students as per the laid down SoPs for conducting Open House of the

university. All examination related information shall be disseminated to the students through website, examination cell notice board & ERP of the University. The performance of a student should be evaluated in terms of two indices, viz. the Semester Grade Point Average (SGPA) for a semester and Cumulative Grade Point Average (CGPA) which is the Grade Point Average for all the completed semesters at any point in time.

The SGPA is to be calculated on the basis of grades obtained in pass grades, except audit courses, registered in the semester. The letter grade and its corresponding 'Grade Point' indicate the results of both qualitative and quantitative assessment of a student's performance in a course. The grade points awarded are as per the grading scheme given in the first ordinances of the university.

7. REPORTING MECHANISM

Designated coordinators for various department level teaching-learning processes shall submit the respective reports to HoD:

- Student Internship Report: Internship Coordinator
- Student Project Report: Project Coordinator
- Result Analysis Report: Departmental Result analysis coordinator
- Attainment and Assessment Report of COs and POs/PSOs: Department Academic Committee
- MOOC Credit Transfer Report: Departmental MOOC coordinator
- Report on Initiatives taken for Advanced and Slow Learners by respective Course coordinator/Program coordinator

8. REVIEW MECHANISM

Each Department will ensure the followings:

- a) Monitor that all the classes are conducted effectively and the quality content is delivered.
- b) Student feedback on course delivery must be conducted as scheduled in academic calendar to improve the class delivery and fruitful student engagement. Based on the feedback analysis report, specific corrective measures shall be suggested by the Department Academic Committee. If

required, action shall be taken up by the Dean of the Faculty/school and in case of extremes, shall be referred to the office of Dean Academics.

- c) Students shall be given chance to improve their grades by registering for course during the duration of the program.
- d) Dean Academics office shall be provided with the perspective plan for next year before start of every academic year along with Action Taken Report and outcomes of the previous years' perspective plan by every department through their respective Dean of Faculty/School.

9. RECORD MANAGEMENT

Head of the departments must upkeep and maintain detailed records for the teaching learning activities for the compliance purpose. Records of all the evaluation related activities conducted during a semester shall be maintained by the examination cell for five years.

10. PERFORMANCE REVIEW AND FEEDBACK

The Deans of Faculty/Schools will monitor the progress and quality of teaching activities. The result will be utilized for the corrective action plan and quality Improvement in the next academic cycle.

11. EXIGENCY, IF ANY

Notwithstanding anything stated in these guidelines, for any unforeseen issues arising, and not covered under this, or in the event of differences of interpretation, the Vice-Chancellor may take a decision, after obtaining if necessary, the opinion/advice of a Committee constituted for this purpose. The decision of the Vice-Chancellor shall be final.

For implementation of above guidelines for "Effective Teaching Learning and Assessment" the Standard Operating Procedures as outlined in Annexure "A" shall be observed. For the effective implementation of Outcome Based Education, "Outcome Based Education" manual attached as Annexure "B" shall be followed by the departments.

Annexure "A"

STANDARD OPERATING PROCEDURES FOR TEACHING LEARNING AND ASSESSMENT

Standard Operative Procedures for Teaching-Learning and assessment have been formulated to define the processes for the best teaching-learning practices, incorporation of student centric teaching-learning methodologies, ICT integration during classroom delivery, categorization of advanced and slow learners, planning of initiatives for customized teaching-learning methodologies, continuous internal assessment followed by the program outcome attainment and analysis processes.

For effective implementation of the Policy for Teaching Learning and Assessment, the following SOPs under following heads shall be observed at MRU:

- Planning of Teaching and Learning
 - Offering Value Added Courses
 - Offering Courses through MOOCs & Credit Transfer
- Student Centric Teaching-Learning methodologies
- ICT Integration in Teaching and learning
- Advanced and Slow Learners (Assessment Process, Initiatives and Outcome)
- Mentorship
- Internship Evaluation
- Project Allocation & progress evaluation
- Maintaining attendance record on ERP

A.1 Stage of Planning in the Teaching and Learning Process

- University Academic Calendar for the upcoming semester shall be prepared by the Dean Academics.
- After due approval of the same from Hon'ble Vice Chancellor the same shall be circulated to all the departments for implementation.
- On the basis of University Academic Calendar departments shall prepare an Academic cum Activity Calendar.
- This academic calendar act as guide for planning various department activities

and events. Accordingly, department prepare schedules for organising Conferences, Workshops, and Industrial visits for students, departmental meetings with class representatives and other day to day activities for students as per the approved Strategic Plans of the department.

- All the teaching related activities; conduct of classes, student centric teaching learning methodologies, Usage of ICT tools, regular meetings with class representatives, uploading of course content, including session plan properly mapped with COs/Bloom's level, continuous assessments, feedback conduct, analysis and action take are being monitored by respective department level coordinators.

A.1.1 Offering Value Added Courses

University offers a wide variety of Value Added Courses for holistic development and empowerment of students. VAC shall enhance the curriculum by amplifying, supplementing, and filling in the gaps, if any. Value added courses are offered for imparting transferable and life skills to all the students with an objective:

- ❖ To provide students an understanding of the expectations of industry.
- ❖ To improve employability skills of students.
- ❖ To bridge the skill gaps and make students industry ready.
- ❖ To provide an opportunity to students to develop inter-disciplinary skills

A.1.1 (a) Designing A Value Added Course

- The department interested in designing a Value Added Course should undertake Training Need Analysis, discuss with the generic employers, alumni and industrial experts to identify the gaps and emerging trends before designing the syllabus.
- Any new Value Added Course developed by a Department should be placed before the Board of Studies and approved by the Academic Council.
- The course offered should not be the same as any course listed in the curriculum of the respective programme/ or any other programme offered by the Department.
- According to the content and target group, the appropriate pedagogical methods should be adopted in the curriculum.

- It is not mandatory to qualify VAC to meet the graduation requirements of any programme and the credits earned through the Value Added Courses shall be over and above the total credit requirement prescribed in the curriculum for the award of the degree.
- It is a teacher assisted learning course open to all students without any additional fee. However, students shall register along with other courses in that particular semester.

A.1.1 (b) Procedure for Registration

- The list of Value Added Courses shall be displayed on the University Website along with the syllabus.
- A student shall register for a Value Added Course offered during the semester on ERP through the concerned Head of the Department.
- The Head of the Department shall get the list of students with choice opted approved from the Dean of School for submission to the Dean Academics & Dean of school offering the particular VAC, in case VACs are opted from other Schools.

A.1.1 (C) Guidelines for Conducting Value Added Courses

- Individual school/department must appoint a VAC coordinator for the smooth conduct of VAC at school/departmental level.
- Industry experts / eminent academicians from other Institutes are also eligible to offer the value added course.
- Value added course should be designed as per the need/requirement of students enrolled in the school/department in a particular program. The duration of the course should not be less than 30 hours in offline mode.
- The school/department VAC coordinator should ensure students' enrollment in one of the Value added courses, offered by the school/department, per program. It is mandatory for students to get registered for one value added course per semester.
- The school/department VAC coordinator must inform students about the requisites (regular attendance and passing the exam) for the completion of course.
- VAC code will be issued for each value added course by the university VAC

coordinator. The school/department should get it mapped on I Cloud EMS.

- A syllabus of four/five units along with evaluation scheme (Practical /Jury /Viva /Seminar /Hands-on training /Industrial training /Field visit /Workshop /MOOC) must be designed for VAC.
- VAC brochure must be prepared by the school/department.
- As VAC is a credit/ non-credit but an audit/a passing course, it is essential for students to clear/complete the value added course in which they are enrolled.
- The course can be offered only if there are at least 5 students opting for it.
- The students may be allowed to take value added courses offered by other departments after obtaining permission from Head of the Department offering the course.
- Each student shall have a minimum of 75% attendance VAC Course to appear for end semester exam or get the course completion certificate.
- Relaxation of attendance requirement may be granted for valid reasons such as illness, representing the University in extracurricular activities etc. as per University norms
- Classes for a VAC may be conducted either during the RESERVED Time Slot in a week or beyond the regular class hours or during weekends or vacation period.
- Student shall be issued a course completion certificate by the school/department duly signed by the Authorized signatories after successful completion of the course.

A.1.1 (d) For I Cloud EMS:

- A catalogue must be created for each value added course.
- VAC must be mapped on I Cloud as a credit/ non-credit and an audit/a passing course.
- Students shall be enrolled on I Cloud.

A.1.1 (e) For Controller of Examination:

Value added course (VAC) shall be added in award sheet as an audit/a passing course with binary grading system, that is, P/F.

A.1.2 Offering Courses through MOOCs & Its Credit Transfer

A.1.2 (a) The credit transfer of MOOC (Offered by SWAYAM/NPTEL / COURSERA) against Open Elective at shall be allowed subject to the fulfillment of following conditions.

1. MOOCs should be offered against Program Electives & Open Electives but not for core courses.
2. Department must identify suitable platforms on which MOOCs can be offered.
3. Department review committee for MOOCs must identify the list of courses that they want to offer through MOOCs in addition to electives already being offered during the semester. Mapping of MOOCs should meet the criteria of credit. (For e.g. -12 weeks course are mapped for 4/5 credits similarly 8 week course are mapped for 2 credits).
4. Department must get the list of MOOCs courses approved from its respective Board of Studies along with the credits and course code assigned to a course followed by its approval from Academic Council.
5. List of MOOCs courses shall be announced in advance and shall be made available on the ERP for registration along with regular courses at the time of course registration.
6. Student must register from the list of approved MOOCs only.
7. The MOOC which is identical (in terms of contents, 20% overlapping is permissible) to any course including Open Elective courses, Minor/Honors courses, etc. (If student opt for it) offered by any department for UG students, shall not be allowed for credit transfer if such a course offered by the University is accessible to the concerned student.
8. Head of Parent department will verify and comment on whether the MOOC requested by the student is satisfying criteria mentioned in point 7 or not
9. Head of allied department with whom the discipline of MOOC is matching will verify and comment on whether the MOOC requested by the student is satisfying criteria mentioned in point 7 or not.
10. Only those MOOC courses are allowed for Credit Transfer which have credits more than or equal to the credits assigned to Open Elective course at University OR the MOOC course should be of minimum ten weeks duration. The student can also choose to register and complete more than one MOOC (of same or

different subject areas) each of lesser duration. However, the total number of weeks of all such individual courses should be more than or equal to ten and should be from the Platform approved by respective BoS.

11. For MOOC Courses on the platforms where proctored exam will not be conducted, student can take the credit transfer of such courses only if the department to which the MOOC belongs is ready to conduct the examination for that course at University at departmental level. Marks scored by the student in this examination will be considered for the award of the grade for Elective. In this case, student also needs to submit the successfully course completion certificate issued by the corresponding platform to his/her parent department.
12. In case a student cannot clear/pass the MOOCs then student can appear for the supplementary exam conducted by the University and in case unable to clear the same in two attempts as per university promotion policy, candidate will re-register for the same/other course from the same elective basket, PSC registration policy will apply.
13. In case student doesn't register for the selected course in any semester, he/she can register same/other course from the same MOOC basket in any other semester (Odd/Even) provided the desired course is running by selected platform and his/her total credits of semester does not exceeds the maximum credit limit.
14. Subject Change within the basket during re-registration and supplementary cases are allowed provided changed course should lie in the same elective basket proposed by department.
15. Any other MOOCs which is completed from any platform other than approved platforms will be considered for life skill points as per university norms for the award of degree.
16. New codes are generated every semester for MOOCs. The format for code generation is MOOC-YY-Odd/Even-Department/Allied-Hard/Soft for Ex: -MOOC-220-CAS-201 represents an allied course proposed by CST department in odd semester of academic year 2022.
17. SPOC of specific platform will allocate the mentors for every course in which students are enrolled who will monitor and guide the students throughout the course for any technical and course related issues.

Note: A student will be eligible to get B.Tech with Honors if he/she completes additional credits through MOOC's. (AICTE Model Curriculum, Chapter 1(B)). Following pattern will be followed for earning additional credits for the award of Honors degree:

The earned credits shall be accepted and transferred to the total credits of the concerned students by the University for Completion of his/her degree. Credits earned through MOOCs will be incorporated in the mark sheet issued to the student by Controller of Examination.

Credits for MOOC's will be verified by the concerned department and will be forwarded to examination department for result mapping.

A.1.2 (b) The following process will be followed before registration and after completion for MOOC

1. Student will submit an application 'Application for Permission to Opt MOOC for Credit Transfer against Elective of that particular Academic session addressed to Head of parent department clearly mentioning his desire to complete MOOC along with, title of MOOC, host platform and credits.

2. After getting written permission from HoD of parent department, the student will submit the same Application to Departmental MOOCs Coordinator.

3. If the MOOC course in which the student is interested does not fall in the parent discipline of the student and belongs to other discipline, the Departmental MOOCs Coordinator will seek opinion of concerned HoD to verify the matching of content of MOOC with that of Elective courses/Minor courses, etc (if student opt for it) offered at the University.

4. If the above mentioned conditions are fulfilled, the Departmental MOOCs Coordinator will recommend the case for final approval and accordingly notify to the students.

5. After getting approval from Dean Academics, the student may register for the MOOC course he/she is allowed for and complete the same as per the requirements of Host Institute.

6. In case the MOOC platform doesn't conduct proctored exam, department to which such MOOC belongs will conduct test and submit the marks to the Departmental MOOCs Coordinator of student's parent department.

7. At the end of the semester, Departmental MOOCs Coordinator will prepare the

list of students with the details of the MOOC(s) students have completed.

8. For the verification of the certificates, Departmental MOOCs Coordinator will send certificates of the SWAYAM-NPTEL courses to the University SPOC, SWAYAM-NPTEL Local Chapter, and for MOOCs on other platforms to the Head of student's parent department for in person verification.

9. Departmental MOOCs Coordinator will submit final list of the students who are recommended credit transfer against Electives to Examination cell through respective Head & Dean of School.

10. Departmental MOOCs Coordinator will submit all original documents in a bound volume to Controller of Examination for preserving as a record for all future purposes and maintain the photocopies with the office of Dean Academics.

A.2 Didactics for Student Centered Learning

- Departments shall incorporate student centric learning methodologies which involves students as active learners and helps them to evolve as critical thinkers and problem solvers instead of being a passive learner.
- While preparing the session plans, course coordinators must map the content with student centric activities that need to be conducted and plan the mode of delivery accordingly for attaining the respective course outcomes
- The session plan developed in line with the university academic calendar and approved by department academic committee shall be ready for uploading to EMS.
- These session plans are then reviewed by the HoD particularly for mentioned mode of delivery, approved and are uplodged by respective course coordinator before the commencement of academic session.
- Through regular interactions, meetings with course coordinators and feedback mechanism, department Academic Committee shall monitor the compliance of session plan incorporating student centric teaching-learning methodologies as mentioned in the session plan
- Before the commencement of new Academic Session department shall review the appointment of all the department coordinators for organizing & coordinating the important activities

- Depending upon the department activity plan, all the activities and events must be organized by the respective department coordinators. These plans must be discussed in the departments and duly approved by respective dean of faculty/school for its inclusion in the Department's Strategic Perspective Plan.
- All the coordinators shall submit the post event report to HoD for its inclusion in the department monthly reports.

A.3 ICT Enabled Learning:

Manav Rachna University has shifted towards new horizons of ICT-based learning, where a spectrum of teachers as mentors, co-learners, and facilitators has emerged, while students are becoming more self-driven and knowledge centric in order to be true 21st century learners. The campus is outfitted with cutting-edge ICT amenities, including state-of-the-art classrooms, auditoriums, seminar halls with audio visual capabilities, and continuous internet connectivity.

- Projectors, virtual classrooms, supplemental audio-video, and online Resources are just a few examples of the ICT tools that must be incorporated in to teaching and learning.
- Blended learning must be supported by incorporating e-learning tools like the National Program on Technology Enhance Learning (NPTEL), NITTTR Chandigarh Technology Enabled Learning (NCTEL), MOOCs like SWAYAM/Coursera/edx, spoken tutorials, virtual laboratories, etc.
- The IT team must ensure that all ICT support is provided to students in the classroom and students are encouraged to function as digital learners. All students are to be provided with lifetime institutional email IDs along with and other e-resources for not restricting their usages within campus computer labs. Official email addresses and IDs are given to all staff and faculty members so they can conduct internet-based online remote classroom sessions with the students.
- At the university library Plagiarism software is available to faculty members, research scholars, and students for monitoring the plagiarism of documents.
- The iCloud-EMS (Education Management System) is a complete system that MRU has recently subscribed to for offering integrated solution to improve

and digitise the teaching-learning processes through its web-based and mobile applications.

- Through this Students would be able to browse and access uploaded course materials, such as the syllabus, previous year, test questions, lecture notes, PPTs, and pertinent web links.
- From the EMS department would be able to generate reports on the continuous assessment of internal and external evaluation for all theory, lab, seminar, and project-related course along with the achievement of course and programme outcomes.
- In order to help faculty members understand all the new and existing modules of the education management system, regular training to be initiated for the use of the available IT infrastructure, uploading of course contents, lesson plans, and creation of assignments/tutorials, question banks, marking of assignments/tutorials, attendance record maintenance, attainment of course and programme outcomes, conduct of surveys for indirect attainment, etc.
- Faculty members shall also be trained for creating the e-content for their specific courses. And this e-content can be stored in each teachers' LMS repository and posted to the EMS.

A.4 Advanced and Slow Learners

(Assessment Process, Initiatives and Outcome)

The performance of a student in any subject depends on many factors like student's attendance in the class or laboratory, teaching methodology, prior knowledge of the subject and others. It is the responsibility of concerned faculty to identify Advanced Learners/ slow learners in his/her class through their previous performance in the subject that is pre-requisite for the current semester courses or in the ongoing semester through class performance in the first phase of assessment.

At the entry level students can be identified as advance or slow learners based on their performance in qualifying exam and their merit in the university entry level exam. For slow learners, course Coordinator shall schedule remedial classes for all such candidates within a month from the start of semester. Performance of these slow learners shall be analyzed on regular basis through feedback and their

performance in classes and other assessments to evaluate the effectiveness of remedial classes. Opportunity shall be given to advance learners either to earn extra credits through MOOCs for the award of degree with honors/specialization or utilizing his/her time from laboratories and tutorials to work on project/start up activities as per his/her choice. Following steps shall be followed by the department in such cases:

A.4.1 Slow Learners:

- Identify the slow learners right in the beginning of semester (within 15 days from the start of semester) based on student's performance in the course that is pre-requisite for the current course.
- Faculty should pay more attention to these slow learners and carefully monitor their performance in the classes.
- In case of unsatisfactory performance, Faculty must schedule remedial classes for slow learners on working Saturdays and free slots available during the week, in coordination with class mentor (preferably within a month from the start of semester).
- All slow learners shall be asked to mandatory register for the special classes/remedial classes and attend as per schedule shared with them.
- HOD should closely monitor the performance of slow learners' and take their feedback as well by formal interaction every fortnight.
- Faculty must analyze the students' performance after every month and submit the same along with proposed strategies for further improvement to their respective Head of the Department
- All the course coordinators/Faculty must maintain the complete record of following documents in their course file with respect to slow learners:
 - List of candidates identified as slow Learner in a particular subject
 - All notifications issued related to remedial classes
 - Timetable for Remedial Classes
 - List of students registered for the course
 - Extra assignments conducted or measure taken
 - Attendance record
 - Performance analysis (pre & post)

- Student Feedback
- Student progression reports indicating performance improvement of slow learners to close the loop

A.4.2 Advanced Learners:

- Identify the advanced learners right in the beginning of semester (within two weeks) based on student's performance in the course that is pre-requisite for the current course and class performance.
- For advanced learner different opportunities shall be provided to the students in terms of earning extra credits, working on projects, startups or research activity as per his or her interest under the faculty mentor.
- Department shall constitute a committee to approve the list of all such advanced learners of the department in every batch.
- Such students shall be encouraged to take up any such activity in addition to the courses he/she has registered for during the semester.
- Faculty mentor should guide such students and monitor their progress in the activity of their choice for the attainment of outcome.
- Any project activity assigned to them need to be monitored by measuring the attainment of expected Outcome through continuous evaluation
- Course coordinators/Faculty must maintain the complete record of following documents in their course file with respect to advanced learners:
 - List of candidates approved as advanced Learner in particular subject(s)
 - Project/research activity/Course for earning extra credits advanced learner registered for and mentor assigned
 - Documents related to all assessments on the activity
 - Student Feedback & Faculty feedback
 - Outcome attained for all the advanced learners and its evaluation to close the loop

All these activities would be reported to the respective HoD by the program coordinator/ respective course coordinator. All these activities shall be closely monitored by the office of Dean Academics.

Apart from these customized teaching-learning strategies for advanced and slow learners, the average learners (with assessment score greater than 40%

and less than 75%) would be given equal opportunities to excel their talent and be part of all the activities being conducted in the department/University including career counselling, competitive guidance, enrollment in MOOCs/value added courses, participation in expert talks/workshops, research paper writing guidance and publication, personality development classes, enrollment in crash courses for preparation towards placement etc.

Throughout this exercise, an utmost care needs to be taken to ensure that this does not lead to any decrement in the morale and disposition of the slow-learners. This endeavor must be aligned as a path-correction rather than pointing out to slow-learners any kind of incompetence or inadequacy.

For identifying Slow & Advanced Learners the Assessment of Learning Levels of the students shall be carried out based on following parameters:

At Entry Level: Based on Student's Academic Performance in the qualifying examinations & Merit in the University Level entrance examination

| | | | |
|--------|--------|-----------|-------------------|
| Top | 10-15% | students' | Advanced learners |
| Bottom | 10-15% | students: | Slow learners |

For Later Stages: Preceding University End Semester Examination (if course is the pre-requisite). Otherwise: Phase I Performance analysis to be done taking into consideration 30% weightage of Previous Semester in addition to Current semester phase 1 performance

This analysis is done for all students of each class. If the total assessment marks are less than or equal to 40%, the student will be identified as slow learner and if it is equal or greater than 75%, he/she will be identified as advanced learner.

A.5 Roles and Responsibilities of Mentor

Each faculty member shall be allocated with 20 students under the mentoring system. Regular meetings shall be held with mentee to monitor the progress, resolve their issues, their participation in co-curricular activities, personality development, preparation for placement, holistic development, life skills etc. Mentors shall keep proper records in respect of meetings conducted for student

counseling. Following are the responsibilities of the mentor:

- Communicating the mentee about all the academic and administrative processes of the university in the beginning of first semester and from time to time
- Communicating the departmental / University directives & information to the mentees
- Ensuring his/her course registration being done as per Promotion Policy of the University and maximum credit limit of the program (kindly refer to the University Promotion Policy & Academic Regulations)
- Keeping record of his/her attendance record and academic performance through regular interactions and meetings with subject faculties and connecting with parents on weekly basis for the defaulters.
- Providing attendance & performance records of all the mentee students to Head of the Department/ Coordinator for the review process, whenever desired. They shall scrutinize critical cases and would suggest corrective measures. If necessary, they shall call Parents for discussions.
- Any discrepancy in the student behavior like short attendance, poor performance in academics etc. will be analyzed and the student will be counseled with care.
- Conducting meetings every fortnight with mentees, understanding the challenges they are facing, resolving their issues and communicating with the concerned authority wherever required.
- Connecting with parents in case he/she is absent from classes for more than three days.
- Informing parents about the performance of their ward from time to time
- Counseling the mentee while opting for elective courses or opting courses through MOOCs
- Counseling the mentee for placement and career progression
- Maintaining record of student progression by keeping details of his/her results.
- Maintaining record of the clan points of mentees and hard copies of all the relevant documents/certificate/research papers etc.
- Maintaining record of medical cases (medical certificates, prescriptions & any other evidence if applicable) and getting it approved from the concerned authority within the defined time frame.

The purpose is to facilitate the students to cope up with their academic progress

in effective manner by providing counseling wherever required. In addition to developing professional competitiveness, students would always be counseled to develop professional ethics, human values, sense of community engagement and their responsibility towards environment and sustainability.

A.5.1 The following SoP shall be observed for the effective implementation of the Student Mentoring System:

- A Mentor will be assigned for each student in the first semester of their programme.
- Any change in the list shall be timely notified depending upon new admissions or change in mentor due to new appointment /resignation of faculty members etc.
- Mentor shall prepare a mentoring schedule for the entire semester for formal interaction of student. It should be prepared in such a manner that each student will get an opportunity to meet with the mentor preferably once in 15 days and there are at least 3 meetings conducted in a semester.
- Department shall disseminate the finalized allocation and schedule of mentor-mentee interaction to the students through respective head of the department/mentoring coordinator.
- Complete records of all the details related to mentee: contact details of assigned mentees and their parents' details, previous examination records, sessional and end semester examination records, attendance records, records related to meetings with mentees etc. as per Appendix 1 shall be maintained by the mentor.
- Any day-to-day issues of mentees to be resolved by the respective mentors on priority.
- Students performance record related to attendance, academic performance and performance in extra-curricular activities need to be tracked by mentor for proper mentoring and communicating the same to their parents.
- Any issues where intervention of head of the department is required will be reported for resolution at the HoD level in consultation with Dean of Faculty/School.
- Mentor shall also interact with the mentees in formal or informal way to assess the counseling needs of the students. If required, sessions with professional experts may be organized.

A.6 Standard Operating Procedure for Industrial Internship Evaluation

- Constitution of Department Internship Committee (DIC)/ Appointing Overall Internship coordinator
- Notification by Overall Internship Coordinator to students to collect Request letters in case they want to pursue at their level.
- Request Letter to be signed by respective HoD in the name of specific Organization/ Company in which he/she wants to undergo an industrial training.
- Office copy of the letters sent by the various companies requesting permission for the industrial training to be maintained by Overall Project Coordinator.
- Letter of Acceptance/ Permission issued by the company along with requisite detail of the company, contact person in response to the request letter issued by the University.
- Notification for meeting of the DIC for analysis of acceptance and giving recommendations for approving the case to undergo Industrial training in the company.
- Submission of recommendations of DIC quoting the date of its meeting: Name and Roll No. of student: approved company for training.
- Letter of approval in the name of company/ organization to individual student for undergoing industrial training in that specific company under signature of HOD along with schedule of training: Date of Start, Duration, Mid Review, Copy of Feedback report format etc.
- Notification by HoD for meeting of DIC for finalizing the list of faculty members assigned the duty for supervision of industrial training.
- Notification by the overall coordinator notifying the list of faculty members assigned the duty for supervision of Industrial Training with their roles and responsibility
- Notification by HoD/ overall internship coordinator for meeting with DIC to finalize the schedule for mid- review of industrial training of all the students.
- Evaluation shall be as per the approved scheme and syllabus of respective program.
- Notification of mid- review of industrial training of all the students undergoing industrial training along with signature and stamp of HOD or overall internship

coordinator with a copy to all designated faculty supervisor to further communicate with their respective assigned students.

- Notification by HoD/ overall internship coordinator for meeting with DIC to finalize the schedule for final viva and presentation of industrial training of all the students
- Notification final viva, presentation and submission of internship report of industrial training of all the students along with signature and stamp of HoD or overall internship coordinator
- Internship reports of the students and certificate of successful completion and feedback report from the industry (duly signed and stamped) issued to the students.
- Preparation and submission of consolidated report to IQAC.

A.7 Project Allocation and Progress Evaluation

A.7.1 Process to be followed for identification and allotments of projects:

- Notification for constitution of Departmental Project Committee (DPC)/ an overall project coordinator and co-coordinators, id required.
- The committee is to be constituted of one senior Professor and two /three faculty members from the department.
- A pool of proposed projects to be prepared by overall project coordinator and notified to students based on ideas collected from domain experts in the department. Alternatively, a student may identify the topic or may bring his/her own idea. Further, student needs to obtain consent of the department faculty members for supervision.
- Notification of meeting of DPC by HoD to review the list of project proposals received
- Final approved Project Topics List with names of students, their groups and Supervisors to be notified by the HOD after consultation with DPC.
- Notification by overall coordinator for students to do extensive literature survey as it is the most important part which gives a direction to the area of research and to present their ideas through power point presentations to DPC and project guides.

- Notification by overall coordinator to students for submission of project synopsis to the project guide. Synopsis is an 8 to 10 pages document which briefly outlines the technical area, literature reviewed, objective, methodology, block diagram, work flow graph and software / tools to be used along with the application areas of the project.

A.7.2 Continuous Monitoring

- The student group is required to work on their topic of interest, and is required to have regular meetings with the project guide to discuss the project work.
- The Project Coordinator will closely monitor the progress of every student in consultation with the project guide.
- Project-Diary needs to be mandatorily maintained; where in all day-to-day activities of the project will be recorded. The inspection of the Project-Diary will also be done regularly to get a detailed account of how the project is progressing.
- The evaluation of the project will be done centrally by the DPC. Committee will conduct the mid-term review as well as the Final assessments of the project. The committee will also monitor the progress in between, through making regular contact with the project coordinator and the guide.
- The assessment done by DPC will become the basis for final grades. All those projects, which will be running slow and not progressing well, will be kept under close watch with periodic warnings being issued to the concerned students.
- Notification Final Viva, Presentation and submission of Project Report of all the students along with signature of HOD or Overall Project Coordinator
- Preparation and submission of consolidated report to IQAC.

A.8 Maintaining Attendance Record and uploading it on ERP

- Faculty must maintain the attendance record of the students for his/her subject in hard copy and upload the attendance on ERP on daily basis within 24 hours of the conduct of class
- In case, faculty is unable to mark the attendance within 24hrs that slot in faculty time table will get freeze on ERP and can unfreeze only on special request to Dean Academics (with the approval of Head & dean of School) within next 3 working days. No such requests will be entertained thereafter.

- It is the responsibility of a faculty to adjust his/her classes before proceeding on any kind of leave. In case faculty has to go on leave due to some emergency, HoD must be informed about the reason and department time table coordinator must make necessary arrangements and shall ensure that no class should go unadjusted.
- Faculty must either exchange his/her class with other subject teachers in advance or after joining back from leave or may schedule an extra lecture if adjustment is not possible. This will avoid academic loss of the students in that particular subject and session plan is also being followed properly for course coverage.
- In case of faculty is taking leave, the concerned faculty can mark attendance on ERP from home as well for the lecture adjusted by another faculty member.
- While keeping attendance record of students in hard, faculty must be vigilant about the regular defaulters and those who are absent continuously for three days. Mentor shall be informed about such case for further action.
- It is the responsibility of the faculty to keep students informed about their attendance status from time to time and if required can connect directly with parents for their information and corrective action.
- Maintaining attendance record in hard copy and marking absentees with red color helps in easily identifying the regular defaulters.
Such small initiatives will help in reducing number of detentions, improving university discipline, academic processes and student's performance as well.

A.8.1 Role & Responsibilities of Course Coordinator

Department must assign Course Coordinator for every course. If a Course is being delivered in one section only then the faculty teaching that particular course is the course coordinator. A programme having multiple sections/ being delivered in multiple programs and is delivered by more than one faculty; an experienced senior faculty shall be assigned the responsibility of Course coordinator. Following are the responsibilities of course coordinator:

- Plan and design the session plan in consultation with faculty members teaching the same course.

- Decide in concurrence with fellow course instructors the Course assessment plan, the syllabus for mid-term exam, structure of examination papers, BT Level and detailed rubrics for all the assessments in the beginning of course
- Finalizing the list of Projects/Case studies etc. in consultation with all the fellow course instructors in case course is to be delivered in PBL Mode
- Designing the list of activities for delivery of course through interactive pedagogies
- Designate faculty members, delivering the course, for preparation of course material and uploading on ERP
- Uploading the session plan and course material on ERP and get it reviewed by Departmental Review Committee
- Holding meetings of course instructors to monitor uniform progress of course, which includes course covered in Lectures, Tutorial sheets, Continuous assessment and Lab work done.
- Providing question paper for Mid Term and End Term examinations to the examination cell as per examination schedule
- Collating student's performance in all the assessments on regular basis, analyzing their performance and taking corrective measures wherever required.

In case any faculty leaves the university in the middle of the semester, it is the responsibility of course coordinator to collect all the assessment records from the concerned faculty. In case the concerned faculty himself or herself is the course coordinator then all assessments shall be submitted with Head of the department before getting relieved from duties.

A.9 Guidelines & Procedure for Conducting Feedback

The objective of the feedback process and its SoPs for implementation is to provide a framework for gathering, compiling, summarizing, and documenting data on feedback from various stakeholders, including students, faculty members, alumni, parents, and employers, with more focused approach on curricula and academic delivery. Feedback on administrative procedures and the other facilities of the University shall also be taken into consideration through Annual Student Satisfaction Survey.

Objective:

The main objectives of Feedback Process and SoPs for Implementation are:

- a) By collecting and carefully examining timely feedback from all stakeholders, curriculum quality can be monitored and improved.
- b) Creating possibilities for ongoing curriculum quality improvement.
- c) Providing everyone with a stake in a programme of study the opportunity to actively engage in its continuous improvement through feedback mechanisms.
- d) Identifying, compiling, and putting into effect best practices for curriculum development.
- e) Establishing a connection between student and other stakeholder feedback and the methodical improvement of curriculum quality.

Type of Feedbacks and Responsibilities:

Departments should conduct the feedback of the following stakeholders to improvise the academic and administrative processes and generic facilities:

- i. Students Course Feedback (on Content Delivery and Curricula)
- ii. Annual Students Satisfaction Survey (including generic facilities)
- iii. Program Exit Feedback
- iv. Faculty Feedback
- v. Alumni Feedback
- vi. Parents Feedback
- vii. Employers Feedback

The above mentioned feedback to be conducted broadly covering the following attributes:

- Quality of current curriculum towards program
- Relevance of courses taught in terms of futuristic technologies
- Flexibility in the Curriculum in terms of elective choices and earning credits
- Balance between theory and lab
- Overall effectiveness of syllabus
- Curriculum meets the industry requirements and incorporated the latest techniques and technologies.
- Outcome Based Education

- Infrastructure Facilities and overall ambience
- Career Guidance and Placement related activities at the university
- Value Added Courses for skill enhancement
- Facilities for Co-Curricular and Extra Curricular Activities
- Industry interaction and exploration
- Accessibility of faculty and senior staff
- Grievances redressal etc.

Every department must assign a coordinator who will be in charge of ensuring that all stakeholders' feedback on curricula, academic delivery, administrative assistance, and other generic facilities is handled smoothly and on a regular basis according to established processes. The relevant department will also be solely responsible for the thorough analysis of all stakeholder feedback. The HoDs, in concurrence with their respective Deans, shall communicate the analysed reports of feedback from all stakeholders together with appropriate suggestions and proposed actions to be done, to the office of Dean Academics for suggestions, if any. Based on these reports, the proposed actions to be taken by all the departments regarding the recommendations and suggestions made by the stakeholders regarding curricula, shall be submitted with IQAC for its perusal, review & further recommendations.

Accordingly, after IQAC review the final suggestions shall be communicated to the departments for further action, proposing the revisions in curricula / introduction of any new course through their respective Board of Studies to Academic Council for its final review and any additional guidance that may be necessary.

Standard Operating Procedure

For the purpose of effectively implementing the stakeholder's feedback, the following six steps, which serve as standard operating procedures, must be followed:

- I. Establishment of Departmental Feedback Committees
- II. Getting Stakeholders' Opinions and Feedback
- III. Report Compilation
- IV. Analysis of Evaluation Reports

- V. Reports on Actions Taken
- VI. Final Review of the Action Taken Reports

1. Establishment of Departmental Feedback Committees

In order to coordinate the conduct of feedback from stakeholders, collations, compilations, and report analysis, the respective Head of the departments must establish and inform the feedback committee at the start of the academic year.

The departmental level committee's proposed structure is as follows:

- Feedback Coordinator of the Department
- Departmental Placement coordinator
- Departmental Alumni Coordinator

However, depending on the strength of the student groups in the departments, the HoD may induct more members to ensure proper execution.

2. Getting Stakeholders' Opinions and Feedback

The student course feedback regarding the course & delivery of content may need to be collected twice during a semester, preferably during the mid-semester & end of the semester. The departmental overall feedback coordinator will monitor the conduct and collaborate with other faculty members for its proper execution.

The designated departmental overall feedback coordinator shall associate with the other faculty members of the department to collect feedback from the students during their end-semester practical examinations for the Annual 360⁰ Students' Feedback covering students' broader experience about their studies and curriculum and available generic facilities in the campus.

For collecting the feedback from Alumni and employers, the Department's designated alumni coordinator and placement coordinator in collaboration with CRC shall do so either directly with alumni and employers during their visits to campus or by getting in touch with them on an annual basis. The formats that will be utilized to obtain feedback from various stakeholders are attached as Annexure

3. Report Compilation

The Departmental Feedback Committee is responsible for collecting and compiling all feedback reports on an annual basis at the end each even semester, with the exception of student course feedback on content delivery, which is compiled during the semester itself and is submitted to the respective HoD.

4. Analysis of Feedback Evaluation Reports

After the receipt of the feedback reports, the analysis of the compiled reports of Students Course Feedback on Content Delivery, Annual 360⁰ Student's Feedback including generic facilities and Faculty Feedback, shall be carried out under the respective HoD by associating Department Academic Committee and respective feedback coordinators for rest of the feedback reports.

The HoD shall share the feedback report with concerned Dean before submitting it with the Dean Academics for "Feedback on Curricula". After its review by the Dean Academics it has to be submitted with IQAC for its perusal, review and further recommendations.

Similarly, after due consultation with the respective Deans of Faculties, the HoDs shall directly send the analysis of the feedback reports regarding the campus's comprehensive facilities to the IQAC for its perusal, review and further recommendations.

5. Reports on Actions Taken

After the IQAC members have reviewed the feedback, the IQAC will send its recommendations to the respective HoDs for any further action that may be required. The IQAC may advise the respective HoDs for the incorporation of all the suggestions. For the introduction of any new courses for which the need has arisen from the feedback process or proposed changes to existing courses, the Board of studies may make additional recommendations to Academic Council for its final approval.

The Annual Feedback Reports of their respective departments, along with Reports on Actions Taken, are to be prepared by all HoDs and submitted to IQAC for its evaluation.

6. Final Submission of the Action Taken Reports

Final submission of the consolidated Annual Reports on Feedback with Action Taken Report shall be finally submitted by the HoDs to IQAC for its review. According to the guidelines all the HoDs shall preserve the copy of the same.

The detailed feedback report compiled on the basis of feedback received from all the stakeholders, its analysis, recommendations, and any further actions taken will be provided to the Board of Management for its perusal and, if necessary, further guidance.

**MANAV RACHNA UNIVERSITY
FACULTY OF.....
DEPARTMENT OF CHEMISTRY**

Mentee File

Name of Mentor:

Name of Department:

Name of Programme:

Batch:

Academic Session:

Contents:

1. Details of the Mentees
2. Mentees Record (Examination, Attendance and Achievements)

1. Details of Mentee

Name of the Mentee:

Program Registered:

Roll No.:

DOB:

Age (at the time of institute joining):

Category:

Religion:

Nationality:

Aadhaar card number:

Medical History:

Blood group:

Marital status:

Permanent Address:

Contact Detail:

Email id:

2. Parent Details

Name of the Father:

Occupation of Father:

Contact Number of Father:

Email id of father:

Educational Qualification of father:

Name of the Mother:

Occupation of mother:

Contact Number of Mother:

Email id of Mother:

Educational Qualification of Mother:

Family Income:

Sibling details:

For Hosteller only:

Name of the local guardian:

Contact number:

Email id:

Address:

Relation with the mentee:

Name of hostel in which he/she is residing:

Contact details of the hostel:

3. Performance details:

a) Details of Qualifying Examination:

| Exam Passed | Institute | Board/ University | Year of Passing | Percentage | Language of Instructions |
|-------------|-----------|-------------------|-----------------|------------|--------------------------|
| X | | | | | |
| XII | | | | | |
| UG/Sem 1 | | | | | |
| Sem 2 | | | | | |
| Sem 3 | | | | | |
| Sem 4 | | | | | |
| Sem 5 | | | | | |
| Sem 6 | | | | | |
| | | | | | |

b) Details of co-curricular, extra-curricular and cultural activity participation:

| S. No. | Name of the activity | Venue | Participant/Winner | Clan points gained |
|--------|----------------------|-------|--------------------|--------------------|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| | | | | |

C) Research, Innovation and Entrepreneurship activity:

Published an article in magazine, newspaper, journal, etc:

4. Performance, observation and suggestion during the tenure in the institution:

At the time of inception of the program

- a) Knowledge
(Initial knowledge, good in which subjects, poor in English speaking, etc)
- b) Skills
(Classical Dancer/ fine arts/ technical skills/ debate/ sports/ literary area)
- c) Behavior
(Introvert/ extrovert/ moderate)

a) Meeting with Mentor:

| S. No. | Date | Time | Semester | Venue | Issues raised | Issues resolved | Sign of mentor |
|--------|------|------|----------|-------|---------------|-----------------|----------------|
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | | | | | | | |
| | | | | | | | |
| | | | | | | | |

b) Mentor's remark:

Semester 1

Reviewed by HOD

Semester 2

Reviewed by HOD

Semester 3

Reviewed by HOD

Semester 4

Reviewed by HOD

Manual for Outcome Based Education

MANAV RACHNA UNIVERSITY, FARIDABAD
PROCESS MANNUAL

Credibility of the evaluation system is highly important to maintain the rigorous regime of teaching learning processes at University. The assessments & evaluation process of the university shall be able to demonstrate to all of its stakeholders, especially students, employers and regulatory bodies, that the program outcomes of its academic programs are comprehensive and all its teaching activities are designed to for the accomplishment of learning experience and outcomes. All the academic programmes shall be outcome based aligning with the University vision and Mission. The curricula designed will be aligned towards the attainment of Program Educational Objectives (PEOs), Program Outcomes (POs) and Program Specific Outcomes (PSOs). Every stated objective and outcome can be assessed and evaluated. Interactive and innovative teaching-learning methodologies shall be integrated to complement traditional methods for supporting the attainment of these program outcomes.

The departments shall focus on Student centric outcome based education by:

- Having Course Outcome Statements clearly stating what student is expected to be able to know, understand and do
- Creating activities around these statements which will help the student to achieve these outcomes
- Clearly setting the Assessment criteria for the attainment of these outcomes

The effective implementation of outcome-based education involves:

- Establishment of Mission statements in line with the vision of the department & Program Educational Objectives
- Mapping of Mission Statements with Program Educational Objectives (PEOs)

- Defining POs with level of Bloom's Taxonomy
- Mapping Program Educational Objectives with POs
- Defining COs (Course Outcomes) with Bloom's Taxonomy for each Course
- Creating articulation matrix of COs with POs mapping
- Preparing session plan for each course stating the COs every session is focused upon and its Blooms level
- Pedagogies for course delivery and its various topics need to be clearly defined for the attainment of outcome
- Designing all Assessment for the course with mapping of Questions with CO's at Bloom's Taxonomy levels.
- Deciding the target threshold for CO attainment and measuring the same through Direct / Indirect assessments.
- Measuring semester-wise students' performance against COs threshold
- Measuring the attainment of each PO through Direct/Indirect assessments
- Analyzing PO attainment and suggest the remedial actions for continuous improvement
- Assessing the attainment of Program Educational Objectives

Each Department is:

- a. Responsible for the quality of the education it provides and shall be of the highest standard.
- b. Working towards continuous improvement in the quality of the education it offers to students and implement the approved policies and procedures to enable it to fulfill the statutory requirements of the regulatory bodies with reference to quality and academic standards.
- c. Maintaining Course Outcomes (COs)-Program Outcomes (POs)/Program Specific Outcomes (PSOs)-Program Educational Objectives (PEOs) assessment and Attainment manual for imparting the Outcome Based Education.

MANAV RACHNA UNIVERSITY, FARIDABAD

FACULTY OF

DEPARTMENT OF

Outcome Based Education Manual (AY.)

1. UNIVERSITY VISION AND MISSION

Vision of the Institution:

To educate students in frontier areas of knowledge enabling them to take up challenges as ethical and responsible global citizens

Mission of the institution:

- To impart outcome based holistic education
- To disseminate education in frontier areas
- To produce globally competitive, ethical and socially responsible human resources
- To produce human resources sensitive to issues of Environment and Sustainable Development
- To develop Environment and Sustainable development as a thrust area of research and development.

The university mission is fully contemplative of the distinguished attributes of the university in terms of need of the society, skills, competitiveness, global graduate attributes and the values. The diversity of courses offered by the university in various domains, the pedagogy and other related activities that can aid to the holistic development of the students and address the different needs of the society helps in the attainment of University vision. The university places high importance on moral and ethical values.

2. DEPARTMENT VISION AND MISSION

Vision of the Department:

Mission of the Department:

3. PROGRAM EDUCATIONAL OBJECTIVES

Keeping in view Interests of all their stakeholders, the Department of has formulated the Program Educational Objectives (PEO's) that are comprehensive statements describing the career and professional accomplishments that the program is preparing the learner for.

Department's Program Educational Objectives (PEOs) are derived from the Department's Vision & Mission and are consistent with the Mission of the department of Manav Rachna University (MRU),

PEO's of Program in ,.. are:

PEO 1:

PEO 2:

PEO 3:

PEO 4:

PEO 5:

4. PROGRAM OUTCOMES AND PROGRAM SPECIFIC OUTCOMES

Department POs & PSOs are listed as below:

PO1

PO2

P3

P4

.

.

POS and so on

PSO1

PSO2

PSO3

5. MAPPING OF PEOs AND DEPARTMENT MISSION STATEMENTS

Department must create the matrix showing mapping of mission statements of the department with PEOs as given below:

| PEO Statements | Mission 1 | Mission 2 | Mission 3 | Mission 4 | Mission 5 |
|----------------|-----------|-----------|-----------|-----------|-----------|
| PEO1: | 3 | - | 2 | - | - |
| PEO2: | - | 1 | - | 2 | 3 |
| PEO3: | 1 | - | | | |
| PEO4: | | | | | |
| PEO5: | | | | | |

'Affinity (correlation)' level for the PEO-Mission statements mapping is as follow:

- Low (Slight): 1
- Medium (moderate): 2
- High (Substantial): 3

6. MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES TO PROGRAM OUTCOMES / PROGRAM SPECIFIC OUTCOMES

The matrix showing mapping of POs/PSOs of the department with PEOs is as below:

| POs PEOs | PO 1 | PO 2 | PO 3 | PO4 | PO5 | PO6 | PO7 | PO 8 | PO 9 | PO10 | PO11 | PO 12 | PSO 1 | PSO 2 | PSO 3 |
|-------------|------|------|------|-----|-----|-----|-----|------|------|------|------|-------|-------|-------|-------|
| PEO1 | 3 | 2 | | | | | | 1 | 2 | | | | | | |
| PEO 2 | | | | | | | | | | | | | | | |
| PEO 3 | | | | | | | | | | | | | | | |
| PEO 4 | | | | | | | | | | | | | | | |
| PEO 5 | | | | | | | | | | | | | | | |

'Affinity' level for the PEO-POs/PSOs mapping is described as follow:

- Low (Slight): 1
- Medium (Moderate): 2
- High (Substantial): 3

7. COURSE OUTCOMES AS PER BLOOM’S TAXONOMY AND ITS MAPPING WITH POs/PSOs

Course outcomes are the specific, measurable, concise, meaningful, and achievable statements defined for each course, stating what students will be able to do after the successful completion of a course.

Course outcomes help Faculty to...

- describe to students what is expected of them
- plan appropriate teaching strategies, materials and assessments
- learn from and make changes to curriculum to improve student learning
- assess how the outcomes of a single course align with larger outcomes for an entire program

Learning outcomes help students to...

- anticipate what they will gain from an educational experience
- track their progress and know where they stand
- know in advance how they'll be assessed

The course articulation/mapping matrix describes the mapping of every CO statement with POs & PSOs of the programme and is done by the programme coordinator. The correlation strength (1,2,3) of each is defined with respect to PO/PSO it is mapped with. Followed by this, a program articulation matrix shall be prepared for all the courses in a program.

Course Title:..... Course
Code:.....

Course Outcomes: The Students will be able to:

CHH-508B.1 Analyses.....

CHH-508B.2 Evaluate.....

CHH-508B.3 Synthesis.....

CHH-508B.4 Develop

Course Articulation Matrix

| | | | | | | | | | | | | | | |
|-------------------------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|
| CO Statement (CHH-508B) | PO 1 | PO 2 | PO 3 | PO 4 | PO 5 | PO 6 | PO 7 | PO 8 | PO 9 | PO 10 | PO 11 | PO 12 | PSO 1 | PSO 2 |
| CHH-508B.1 | 3 | 2 | - | 1 | - | - | - | - | - | 2 | 3 | - | 2 | - |
| CHH-508B.2 | - | 3 | 2 | - | - | 1 | - | - | 3 | - | - | 2 | - | 2 |
| CHH-508B.3 | 2 | - | 3 | 2 | - | - | - | 3 | - | 2 | - | 1 | - | 1 |
| CHH-508B.4 | 1 | 2 | - | 3 | - | - | 2 | - | - | 1 | 2 | - | 3 | - |

'Affinity' level are as follow:

-Low (Slight): 1

-Medium (Moderate): 2

-High (Substantial): 3

8. CREATION OF PROGRAM ARTICULATION MATRIX

From the course articulation matrix, program articulation matrix is created wherein all the to be delivered in a program are shown to be mapped with POs & PSOs.

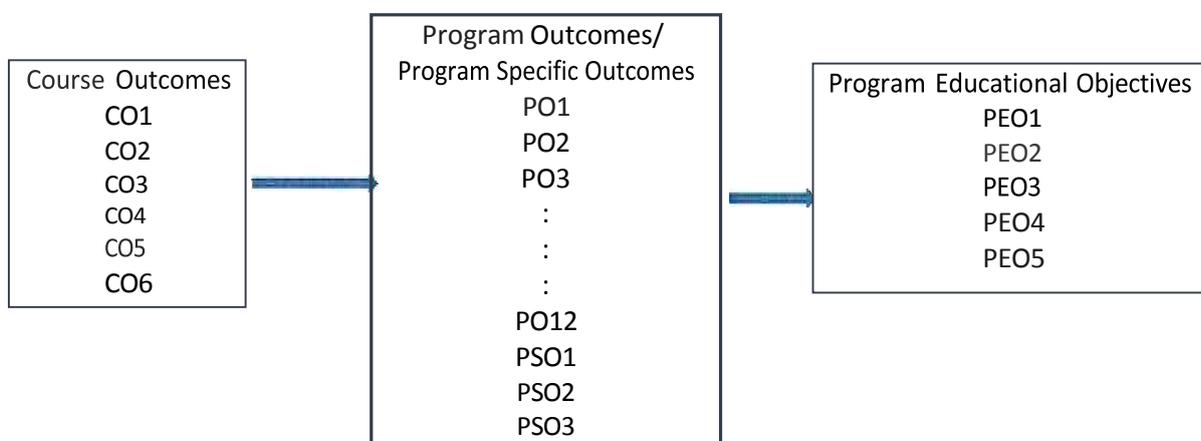
| Course Code | PO 1 | PO 2 | PO 3 | PO 4 | PO 5 | PO 6 | PO 7 | PO 8 | PO 9 | PO 10 | PO 11 | PO 12 | PS 01 | PS 02 | PS 03 |
|-------------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|
| CHH-101T | √ | √ | √ | - | √ | √ | - | - | √ | - | √ | - | - | √ | - |
| CHH102T | | | | | | | | | | | | | | | |
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9. RELATIONSHIP BETWEEN COs-POs/PSOs AND PEOs

The Program outcomes shall be thus computed and assessed at three different levels. Course level, at the completion of each course and its assessment and attainment analysis is done by the course coordinator.

Program Outcome/Program Specific outcome assessment and attainment at the completion of degree Programme and is done by Department academic Committee.

This is followed by the computation of assessment and attainment of Program Educational Objectives (PEOs). This indicates the ability of graduated students to utilize their acquired skill set while performing at different levels during his/her early professional career.



| | |
|--|---|
| Course outcomes attainment leads to attainment of Program Outcomes/Program Specific Outcomes | Program Outcome/Program Specific outcome attainment Leads to attainment of Program Educational Objectives |
|--|---|

10. COURSE COORDINATOR INVOLVEMENT

Every course coordinators in consultation with all the faculty members delivering the same course would frame measurable, specific and achievable CO statements.

Faculty will carefully complete CO-PO mapping on the basis of all the activities to be conducted and compute CO attainments for subsequent analysis.

Course coordinator would submit CO attainment and subsequent action recommendations to the Program coordinators.

They will consolidate the year wise CO attainment along with recommended actions.

The department academic committee under the guidance of Head of Department would consolidate CO-PO attainment and later PEO attainment, plan overall recommendations for actions and information to Board of studies for their suggestions.

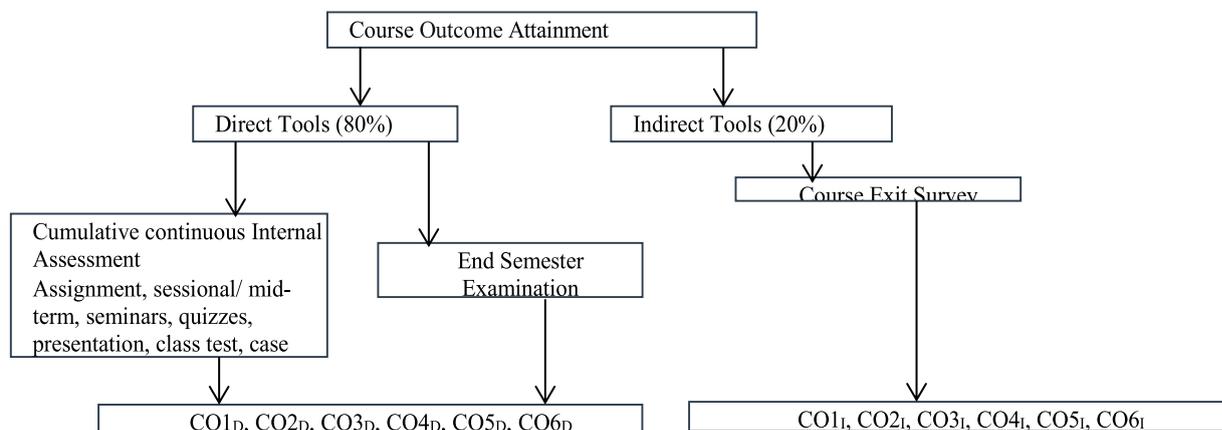
11. COURSE OUTCOME ATTAINMENT PROCESS

11.1 Course Outcome Attainment Assessment Tools:

CO's are attained through Direct & Indirect assessment tools. The weightage for direct and indirect methods fixed will be 80% and 20%, respectively.

Direct tools shall include cumulative continuous internal assessment methods and end semester examinations. Indirect tools will include course exit survey.

The process to be followed for course outcome attainment is depicted below:



Assessment tools for Attainment of Course Outcomes

These different tools for assessment help in evaluating student learning and attainment of course outcomes in best possible manner. Each theory and practical course have internal as well as external assessment covering following parameters:

- Teacher's assessment: This includes assignments, class tests, presentations, tutorials, quiz, case studies, group discussions, group projects, viva voce and lab report for practical courses etc.
- Sessionals /mid term
- End semester examination
- Technical Seminars, internships and Projects

- Industrial Training: Assessment of training primarily includes feedback from the industry mentor, faculty mentor and presentations at different stages to assess the performance.
- Course Coordinators shall prepare the course specific evaluation charts to assess student's performance consistently for COs and subsequent PO attainment analysis.

11.2 Process for CO Attainment:

- For every direct attainment tool mentioned above, each question in all the components of assessment tools mentioned above shall be mapped with course outcome and its Bloom's Taxonomy level
- Question wise marks shall be recorded for all the assessment tools from evaluated answer sheets.
- A database shall be prepared for every course to map marks obtained in each question attempted corresponding to a particular CO.
- For Lab courses/projects/colloquium/industrial internship, experiments etc. Proper rubrics shall be created and shall be mapped to designed course outcomes.
- For the computation of direct attainment, all the questions will be clubbed CO wise, threshold (say of 60%) can be set initially for each CO and the number of students scoring more than threshold in respective questions mapped to a particular CO shall be counted and divided by total number of students to compute the direct CO attainment in that particular question. Similar way, it is to be computed for all the questions mapping to that particular CO followed by the computation of Average CO.
- This will provide the direct attainment of Course outcomes.
- For computation of indirect CO attainment, students shall submit the course exit survey at the end of each course. The weighted average shall be computed to get the indirect CO attainment.
- The weighted sum of direct and indirect attainment ($0.8 \times \text{Direct CO attainment} + 0.2 \times \text{Indirect CO attainment}$) will provide the overall CO attainment.
- Course coordinators will set the Course outcome attainment target on the basis of average performance levels in that course during previous three

years. a) Compute the average marks scored in each course during the last three years. b) Compute the percentage of students scoring above the calculated average marks. c) Department may add 5% to set the improved target for continuous improvement.

| | | |
|---------------------------|---|-----------------------------|
| Target setting Parameters | Target %age from previous 3 years results | 0.8* Direct + 0.2* Indirect |
| Set Target Direct | | |
| Set Target Indirect | | |
| Weightage | | |
| Overall Set Target | | |

≥ Set Target: Attainment is achieved
 < Set Target: Attainment is not achieved

Add 5% to consider continuous Improvement

- Overall CO attainment shall be analyzed (attainment is achieved/not achieved) by comparing attained CO with the target set for each course.

| Course Outcome | Direct Attainment %age | 0.8* Direct Attainment %age | In direct Attainment %age | 0.2* In direct Attainment %age | Overall CO Attainment |
|----------------|------------------------|-----------------------------|---------------------------|--------------------------------|-----------------------|
| CO1 | | | | | |
| CO2 | | | | | |
| CO3 | | | | | |
| CO4 | | | | | |
| CO5 | | | | | |
| CO6 | | | | | |

The overall CO attainment shall be mapped to levels (1, 2, 3) of attainment. A middle level (level 2) can be assigned to a range of set target with+ 5% of CO attainment, if possible. Considering the past results/Course outcome, the lower level (level 1) can be set for %age of CO attainment which is less than set target %age. The higher level (level 3) can be set for % age of CO attainment which is greater than set target % age +5%.

| Course Outcome | Direct Attainment %age | 0.8* Direct Attainment %age | In direct Attainment %age | 0.2* In direct Attainment %age | Overall CO Attainment | Level of Attainment (example) |
|-----------------------|------------------------|-----------------------------|---------------------------|--------------------------------|-----------------------|-------------------------------|
| CO1 | | | | | | 3 |
| CO2 | | | | | | 2 |
| CO3 | | | | | | 1 |
| CO4 | | | | | | 2 |
| CO5 | | | | | | 3 |
| CO6 | | | | | | 2 |
| Average CO Attainment | | | | | | 2.16 |

- Graphical analysis for the CO attainment can be carried out for further planning of subsequent actions.

Level of CO Attainment
Indirect Attainment
Course Exit Survey

| Manav Rachna University (established under Haryana State Private University act 2006) Sector-43, Delhi-Surajkund Road, Faridabad. Course Exit Survey | | | | | | |
|---|--|--------|--------------------------------|---|---|-------|
| 1. Name: | | | 2. Roll No.: | | | |
| 3. Program: | | | 4. Batch: | | | |
| 5. Semester: | | | 6. CGPA till present semester: | | | |
| 7. Course Title: | | | 8. Course Code: | | | |
| 9. Name of Course Teacher: | | | | | | |
| Rate your understanding of each course outcome on the scale of 5 to 1 5- completely satisfied, 4 – very satisfied, 3- moderately satisfied, 2- slightly satisfied and 1 - not at all satisfied | | | | | | |
| Course Outcome | Please grade the attainment of following course outcomes | RATING | | | | |
| | | 5 | 4 | 3 | 2 | 1 |
| CO1 | Rate your understanding to C01 statement | | | | | |
| CO2 | Rate your understanding toCO2 statement | | | | | |
| CO3 | Rate your understanding toC03 statement | | | | | |
| CO4 | Rate your understanding to.....CO4 Statement | | | | | |
| CO5 | Rate your understanding to C05 statement | | | | | |
| CO6 | Rate your understanding to C06 statement | | | | | |
| Suggestions for improvement: | | | | | | |
| Signatures: | | | | | | Date: |

Consolidated Course Exit Survey and Analysis

Total no. of students, N:

Course Title & Course Code:

Semester: Even/odd Academic

Year:

| Course Outcome | No. of students rated '5' | % age of students | No. of students rated '4' | % age of students | No. of students rated '3' | % age of students | No. of students rated '2' | % age of students | No. of students rated '1' | % age of students | Avg % age |
|----------------|---------------------------|-------------------|---------------------------|-------------------|---------------------------|-------------------|---------------------------|-------------------|---------------------------|-------------------|-----------|
| CO1 | A5 | A5/N | A4 | A4/N | A3 | A3/N | A2 | A2/N | A1 | A1/N | |
| CO2 | | | | | | | | | | | |
| CO3 | | | | | | | | | | | |
| CO4 | | | | | | | | | | | |
| CO5 | | | | | | | | | | | |
| CO6 | | | | | | | | | | | |

Weighted average, $WA = (5*A5 + 4*A4 + 3*A3 + 2*A2 + 1*A1)/5$

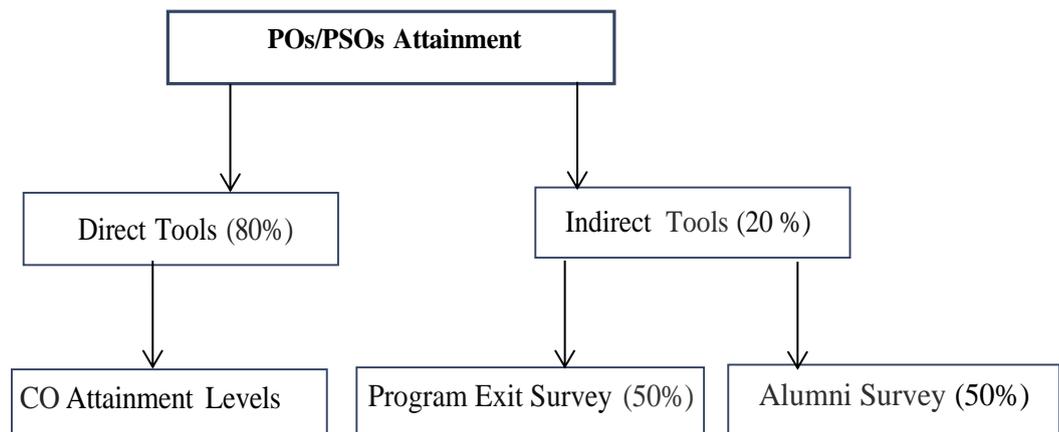
Avg %age- $(WA/N) * 100$

The weighted sum of direct and indirect attainment ($0.8*Direct\ CO\ attainment + 0.2*Indirect\ CO\ attainment$) will provide the overall CO attainment.

12. PROCESS FOR POs/PSOs ATTAINMENT AND ANALYSIS

12.1 Tools for PO/PSO Attainment:

POs/PSOs attainment is computed through Direct and indirect tools only. The weightage for direct and indirect methods fixed will be 80% and 20%, respectively. Direct tools shall include course outcome attainment levels. Indirect tools will include 50% weightage for the program exit survey conducted at the end of the program and 50% weightage for the alumni feedback. The process to be followed is depicted



Program exit survey helps in providing the valuable inputs to assess what should be improved, modified or remain intact. The University has Manav Rachna Alumni Association, most of the alumnus are entrepreneur or working at very high positions in the industry. The alumni help the students in training and placement; also invited for interaction with students for the Expert talks on recent practices of the industry and new technologies. Their feedback is also considered for imparting the advice related to the course revision, introduction of new electives, establishment of new labs, conducting workshops & student trainings etc.

12.2 Process of PO/PSO Attainment:

- The average attainment of POs (PO1, PO2, . . ., PO..) and respective PSOs (PSO1, PSO2, PSO3....) through direct assessment tools shall be calculated using the following steps:
 - Affinity factor mentioned in Program articulation matrix for every course outcome will be converted into respective levels as follows:
 - Affinity factor '3' shall be mapped to level '1'
 - Affinity factor '2' shall be mapped to level '0.66'
 - Affinity factor '1' shall be mapped to level '0.33'
 - Average Course attainment level of each course shall be recorded
 - The course wise attainment of POs (PO1, PO2,,) and respective PSOs (PSO1, PSO2, PSO3....) through direct assessment tools shall be calculated using the following formula:

PO_m, or PSO_n attainment of course C_i,
= Course attainment level of CO_i for C_i
= Correlation level of CO_i for C_i

Where PO_m : represents POs with $m= 1$ to total number of POs.

PSO_n : represents PSOs with $n=1$ to 3 or 4 as per number of PSOs designed for Programme.

C_i : represents course 1, 2,3,...,n

CO_i : represents course outcome 1,2,..

12.1.1 The overall attainment level of twelve POs (PO1, PO2,) and respective PSOs (PSO1, PSO2, PSO3.....) through direct assessment tools has been calculated using the following formula:

$$PO_m \text{ or } PSO_n \text{ attainment} = \frac{\sum_{i=1}^n PO_m \text{ or } PSO_n \text{ attainment of course } C_i}{\text{Number of Courses Mapped with respective } PO_m \text{ or } PSO_n}$$

Number of Courses Mapped with respective PO_m or PSO_n

The average attainment of POs (PO1, PO2, ..,) and respective PSOs (PSO1, PSO2, PSO3.) through indirect assessment tools is calculated using the following steps:

12.1.2 The parameters of Program exit survey and Alumni survey shall be mapped to respective POs/PSOs.

- For the computation of indirect PO/PSO attainment, students shall be asked to fill the Program exit survey after the programme and alumni survey by alumni members, the weighted average shall be computed for all the parameters (Sample forms attached).
- The weighted average of direct (80%) and indirect (20%) PO/PSO attainment shall be computed to know about overall PO/PSO attainment.

MANAV RACHNA UNIVERSITY
Programme Exit Feedback

Section A:
General Information:

Name of Student: _____ Roll No.- _____
 Department & Faculty: _____ Year of Graduation: _____

Programme _____

Please mention your current status:

- a. Placed from Campus

- b. Details of the Company & Package, if placed

- c. Going for higher studies

- d. Programme enrolled for & University, if going for higher studies:

- e. Planning your own startup/ Joining Family Business: _____
- f. Details, if answer to above is yes: _____
- g. Others
 (Specify) _____

Email ID: _____ Mobile No.: _____

Section B
Evaluation of Programme Effectiveness:

Please identify the degree to which you believe your undergraduate education helped you to develop the skills and abilities in the following areas to be successful in your professional life:

| Sr . No . | Parameters | Strongly Disagree 1 | 2 | 3 | 4 | Strongly Agree 5 |
|-----------|---|---------------------|---|---|---|------------------|
| 1 | Understanding the importance of interdisciplinary subjects and its application in learning other engineering subjects (PO1) | | | | | |
| 2. | Comprehension of the basic knowledge of analysis and design (PO2) | | | | | |
| 3 | Ability to apply research-based approach using innovative tools and techniques in various fields (PO3) | | | | | |
| 4 | Ability to apply the knowledge and understanding of the engineering and management principles while working individually and as part of team handling multidisciplinary projects. (PO4) | | | | | |

| | | | | | | |
|----|---|--|--|--|--|--|
| 5 | Ability to communicate effectively in both verbal and written form and develop intrapersonal and interpersonal skills | | | | | |
| 6 | Ability to develop competencies through self-education for lifelong learning | | | | | |
| 7 | Ability to secure employment or be an entrepreneur with the application of professional knowledge with ethical responsibility | | | | | |
| 8 | PSO1 | | | | | |
| 9 | PSO2 | | | | | |
| 10 | | | | | | |
| 11 | | | | | | |

Section C
Additional Information:

1. Do you feel your programme prepared you for your initial job and/ or higher studies?
Yes No Somewhat

2. Are there any other skills or knowledge you would like to have in the programme being offered to current students to ensure their preparedness for employment and/ or higher studies? If YES, please specify

3. During the programme, how many courses or training programs have you taken outside the degree programme?
None 1 - 3 4 - 6 More than 6

4. During the programme, how many conferences, workshops, professional meetings, etc. have you attended?
None 1 - 3 4 - 6 More than 6

5. During the programme, how many sports and cultural activities have you participated?
None 1 - 3 4 - 6 More than 6

6. Specify details regarding your achievements in curricular/ non - curricular activities:

Section C
Additional Information:

Rating Scale: (Low-1 High-4) 1 – Not up to the mark, 2 – Moderate, 3 – Good, 4 – Very Good, 5-Excellent

- | | |
|-------------------------------------|--------------------------|
| 1. Head of the Department | <input type="checkbox"/> |
| 2. Teaching Faculty/ Staff | <input type="checkbox"/> |
| 3. Infrastructure | <input type="checkbox"/> |
| 4. Library | <input type="checkbox"/> |
| 5. Laboratories | <input type="checkbox"/> |
| 6. Exam Cell | <input type="checkbox"/> |
| 7. Administration | <input type="checkbox"/> |
| 8. Training & Placement Office | <input type="checkbox"/> |
| 9. Career Development Centre (CDC) | <input type="checkbox"/> |
| 10. Corporate Resource Centre (CRC) | <input type="checkbox"/> |
| 11. Discipline | <input type="checkbox"/> |
| 12. Environment | <input type="checkbox"/> |
| 13. Canteen | <input type="checkbox"/> |
| 14. Sports Facilities | <input type="checkbox"/> |

B. Your suggestion (s) for improvement

Signature of Student (Optional)

Date:

Consolidated Program exit Survey

Total no. of respondents, N:

Programme:

Academic Year:

| Parameter | No. of students rated '5' | %age of students | No. of students rated '4' | %age of students | No. of students rated '3' | %age of students | No. of students rated '2' | %age of students | No. of students rated '1' | %age of students | Weighted Avg %age |
|---|---------------------------|------------------|---------------------------|------------------|---------------------------|------------------|---------------------------|------------------|---------------------------|------------------|-------------------|
| Understanding the importance of interdisciplinary subjects and its application in learning other engineering subjects | A5 | A5/N | A4 | A4/N | A3 | A3/N | A2 | A2/N | A1 | A1/N | |
| Comprehension of the basic knowledge of analysis and design | | | | | | | | | | | |
| Ability to apply research-based approach using innovative tools and techniques in various fields | | | | | | | | | | | |
| Ability to apply the knowledge and understanding of the engineering and management principles while working individually and as part of team handling multidisciplinary projects. | | | | | | | | | | | |

| Parameter | No. of students rated '5' | %age of students | No. of students rated '4' | %age of students | No. of students rated '3' | %age of students | No. of students rated '2' | %age of students | No. of students rated '1' | %age of students | Weighted Avg %age |
|---|---------------------------|------------------|---------------------------|------------------|---------------------------|------------------|---------------------------|------------------|---------------------------|------------------|-------------------|
| Ability to communicate effectively in both verbal and written form and develop intrapersonal and interpersonal skills | | | | | | | | | | | |
| Ability to develop competencies through self-education for lifelong learning | | | | | | | | | | | |
| Ability to secure employment or be an entrepreneur with the application of professional knowledge with ethical responsibility | | | | | | | | | | | |
| PO8 | | | | | | | | | | | |
| PO9 | | | | | | | | | | | |
| PO10 | | | | | | | | | | | |
| PO11 | | | | | | | | | | | |
| PO12 | | | | | | | | | | | |
| PSO1 | | | | | | | | | | | |
| PSO2 | | | | | | | | | | | |
| PSO3 | | | | | | | | | | | |

Weighted average, WA(Proq exit) = $(5*A5 + 4*A4 + 3*A3 + 2*A2 + 1*A1)/5$
 Avg %age = $[WA (Prog exit)/N]*100$

Manav Rachna University, Faridabad

Alumni Feedback

1. Name & Address

2. Programme studied at MRU _____ Year of Passing _____

3. Status after passing out from MRU

i) What was your primary activity?(Please put a tick mark in the appropriate box)

a. Employed for salary b. Seeking employment

c. Undergoing higher studies d. Self employment

4. a.Details of your present primary activity Organization at present you are employed:

Position:

Business email id:

Since when:

Additional degree undergoing / obtained:

Year:

Institution:

5. How satisfied are you with the primary activity?

a. Extremely satisfied b. Very satisfied

c. Somewhat satisfied d. Not at all satisfied

6. Using the following scale, rate the helpfulness of following items in acquiring the skills and knowledge needed to perform your present job (Please put a mark).

| Description | Extremely helpful (5) | Very helpful (4) | Moderately helpful (3) | Not at all helpful (2) |
|----------------------------------|-----------------------|------------------|------------------------|------------------------|
| Courses in major field | | | | |
| Elective courses | | | | |
| Project/ research | | | | |
| Extra-curricular activities | | | | |
| Formal training in a present job | | | | |

Any changes would you like to suggest to improve the curriculum / course?

.....
.....
.....

2. For each of the items below, rate your undergraduate major program (Please put a ✓ mark).

| Description | Extremely satisfied (5) | Very satisfied (4) | Moderately satisfied (3) | Not at all satisfied (2) |
|---|-------------------------|--------------------|--------------------------|--------------------------|
| Relevance of the curriculum to job & Future aspirations | | | | |
| Inspiration and encouragement | | | | |
| Interaction with faculty | | | | |
| Quality of instruction | | | | |

3. For each programme educational objective mentioned below, circle a number on the scale provided to rate your satisfaction with the academic preparation you received in that area as a student (Please put a ✓ mark).

| S.No | Programme Educational Objectives | QUESTIONARIES | QUESTIONARIES | | | | |
|------|----------------------------------|--|---------------|--------------|---------|------------------|---------|
| | | | Excellent(5) | Very good(4) | Good(3) | Satisfactory (2) | Poor(1) |
| I. | Employability | How comfortable you were in the training/initial period in your first employment | | | | | |
| | | Professionally competent for the requirements of Organization | | | | | |
| | | Excel in analytical and problem solving skills in multidisciplinary environment | | | | | |
| | | Ability to exhibit and communicate knowledge of basic engineering sciences. | | | | | |
| II | Higher Studies | Ability to learn new technology | | | | | |
| | | Willingness in lifelong learning for professional development | | | | | |
| | | Willingness in higher education | | | | | |
| III. | Entrepreneurship | You work for business incubation/ Research and Development at your company | | | | | |
| | | You plan to start a new company | | | | | |
| | | You exhibit good leadership qualities | | | | | |
| IV. | Responsible Citizen | Development of Ethical Attitude | | | | | |
| | | Ability to work in team | | | | | |
| | | Disseminate universal science and technology for the society | | | | | |

How well is the institute keeping in touch with you since graduation? (Please put a in the appropriate box).

a. Extremely Well

b. Very Well

c. Somewhat Well

d. Not at all Well

Date :

Place:

Signature of Alumni

Consolidated Alumni Survey

Total no. of respondents, N:

Programme:

Academic Year:

| Parameter | No. of students rated '5' | %age of students | No. of students rated '4' | %age of students | No. of students rated '3' | %age of students | No. of students rated '2' | %age of students | No. of student rate 4 '1' | %age of students | Weighted Avg %age |
|--|---------------------------|------------------|---------------------------|------------------|---------------------------|------------------|---------------------------|------------------|---------------------------|------------------|-------------------|
| How comfortable you were in the training/initial period in your first employment | A5 | A5/N | A4 | A4/N | A3 | A3/N | A2 | A2/N | A1 | A1/N | |
| Professionally competent for the requirements of Organization | | | | | | | | | | | |
| Excel in analytical and problem solving skills in multidisciplinary environment | | | | | | | | | | | |
| Ability to exhibit and communicate knowledge of basic engineering sciences. | | | | | | | | | | | |
| Ability to learn new technology | | | | | | | | | | | |
| Willingness in lifelong learning for professional development | | | | | | | | | | | |
| Willingness in higher education | | | | | | | | | | | |
| You work for business incubation/ Research and | | | | | | | | | | | |

| Development at your company | | | | | | | | | | | |
|--|---------------------------|------------------|---------------------------|------------------|---------------------------|------------------|---------------------------|------------------|--------------------------|------------------|-------------------|
| Parameter | No. of students rated '5' | %age of students | No. of students rated '4' | %age of students | No. of students rated '3' | %age of students | No. of students rated '2' | %age of students | No. of student rate4 '1' | %age of students | Weighted Avg %age |
| You plan to start a new company | A5 | A5/N | A4 | A4/N | A3 | A3/N | A2 | A2/N | A1 | A1/N | |
| You exhibit good leadership qualities | | | | | | | | | | | |
| Development of Ethical Attitude | | | | | | | | | | | |
| Ability to work in team | | | | | | | | | | | |
| Disseminate universal science and technology for the society | | | | | | | | | | | |

Weighted average, \ A (Alumni)}=(5*A5 +4*A4--+ 3*A3 +2*A2+1*A)/5

Avg %age= (WA(Alumni)/N]* 100

| Parameter | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | | PO12 | PSO1 | PSO2 | PSO3 |
|--|-----|-----|-----|-----|-----|-----|----------------|------|------|------|------|
| How comfortable you were in the training/initial period in your first employment | | | | | | | | | | | |
| Professionally competent for the requirements of Organization | | | | | | | | | | | |
| Excel in analytical and problem solving skills in multidisciplinary environment | | | | | | | | | | | |
| Ability to exhibit and communicate knowledge of basic engineering sciences. | | | | | | | | | | | |
| Ability to learn new technology | | | | | | | | | | | |
| Willingness in lifelong learning for professional development | | | | | | | | | | | |
| Willingness in higher education | | | | | | | | | | | |
| You work for business incubation/ Research and Development at your company | | | | | | | | | | | |
| You plan to start a new company | | | | | | | | | | | |
| You exhibit good leadership qualities | | | | | | | | | | | |
| Development of Ethical Attitude | | | | | | | | | | | |
| Ability to work in team | | | | | | | | | | | |
| Disseminate universal science and technology for the society | | | | | | | | | | | |

The weighted average percentage will provide the indirect PO attainment.

In this way the Average indirect PO/PSO attainment using both Program exit (PI- P: Program exit, I-Indirect) and Alumni survey (AI- A: Alumni survey, I-Indirect) will be computed. The overall weighted PO/CEO attainment using Program exit and Alumni survey would be computed as: Overall weighted PO/PSO attainment using Indirect tools = $0.5*PI + 0.5*AI$

| | | | | | | | | | | | | | | | | |
|---|----|----|----|----|----|----|----|----|----|-----|-----|-----|--------|--------|--------|--|
| Average PO/PSO Attainment using Program Exit Sukey (P) | | | | | | | | | | | | | | | | |
| Average PO/PSO Attainment using Alumni Survey (AI) | | | | | | | | | | | | | | | | |
| Overall indirect PO/PSO Attainment , B= 0.5*PI + 0.5*AI | I1 | I2 | I3 | I4 | I5 | I6 | I7 | I8 | I9 | I10 | I11 | I12 | IPS O1 | IPSO 2 | IPS O3 | |

The weighted average of direct (80%) and indirect (20%) PO/PSO attainment shall be computed to know about overall PO/PSO attainment.

| | PO 1 | PO 2 | PO 3 | PO 4 | PO 5 | PO 6 | PO 7 | PO 8 | PO 9 | PO 10 | PO 11 | | PS 0 1 | PSO 2 | PSO 3 |
|--|------|------|------|------|------|------|------|------|------|-------|-------|-----|-------------|----------|----------|
| Average Direct PO/PSO Attainment (A) | DI | D2 | D3 | D4 | D5 | D6 | D7 | D8 | D9 | D10 | D11 | D12 | D - P S 0 1 | D-PS O 2 | D-PS O 3 |
| Average indirect PO/PSO Attainment (B) | I1 | I2 | I3 | I4 | I5 | I6 | I7 | I8 | I9 | I10 | I11 | I12 | IPS O1 | IPSO 2 | IPSO 3 |
| Overall PO/PSO Attainment— A*0.8 + B*0.2 | O1 | O2 | O3 | O4 | O5 | O6 | O7 | O8 | O9 | O10 | O11 | O12 | O- P S 0 1 | O-PS O 2 | O-PS O 3 |

The bar graphs shall be plotted to show PO/PSO attainment and subsequent analysis. The POs/PSOs attainment levels shall be analyzed to plan the subsequent actions.

13. PROCESS FOR PEOs ATTAINMENT AND ANALYSIS

The assessment and attainment of PEOs shall include both direct and indirect tools as follows:

1. Direct Tools (Weightage: 60%):
 - a. Program Outcome/Program Specific Outcome attainment level as calculated in the previous section for the mapped PEOs. Weightage: 80%
2. Indirect Tools (Weightage: 40 %):
 - a. Program exit survey: Weightage: 10%
 - b. Alumni survey: weightage: 10%
 - c. Employer feedback: Weightage: 20%

For direct attainment, the Program Outcome/Program Specific Outcome attainment level as calculated in the previous section shall be used directly for the mapped PEOs.

For Indirect attainment, the weighted average will collectively provide the Indirect PEO attainment.

The weighted average of direct (60%) and indirect (40%) attainment shall be computed to know about overall PEO attainment.

The PEO attainment matrix shall be formulated and respective PEO attainment shall be analyzed for subsequent actions.

Levels of attainment for PEOs

| PEO Attainment | Level of Attainment |
|---|----------------------------|
| Greater than equal to 70% | Excellent |
| Greater than equal to 60% and less than 70% | Very Good |
| Greater than equal to 50% and less than 60% | Good |
| Greater than equal to 40% and less than 50% | Satisfactory |
| Less than 40% | Not Satisfactory |

PEO Attainment Matrix:

| PO/PSOs \ PEOs | PEO1 | PEO2 | PEO3 | PEO4 | PEO5 |
|--|------|------|------|------|------|
| PO 1 | | | | | |
| PO 2 | | | | | |
| PO 3 | | | | | |
| PO 4 | | | | | |
| PO 5 | | | | | |
| PO 6 | | | | | |
| PO 7 | | | | | |
| PO 8 | | | | | |
| PO 9 | | | | | |
| PO 10 | | | | | |
| PO11 | | | | | |
| PO12 | | | | | |
| PSO 1 | | | | | |
| PSO2 | | | | | |
| PSO3 | | | | | |
| Average PEO attainment | | | | | |
| Level of PEO Attainment | | | | | |
| Whether the expected level of PEO is attained or not? (Yes/No) | | | | | |

The PEO attainment levels shall be analyzed to plan the subsequent actions.

Course Outcome Attainment Report (Session-)

Data:

To

Department Academic Committee (DAC)
Department of.....

Subject: Submission of Course Outcome Attainment Report of the course.....
The course outcome attainment report for the course
'.....' submitted for the perusal and review of Department
Academic Committee members

| Course Title with Code | CO | CO Statement | Attainment Percentage | | | Target Achieved/ Not Achieved | Action planned to improve the CO Attainment |
|------------------------|-----|--------------|-----------------------|---------------------|--------------------|-------------------------------|---|
| | | | Direct Attainment | Indirect Attainment | Overall Attainment | | |
| | CO1 | | | | | | |
| | CO2 | | | | | | |
| | CO3 | | | | | | |
| | CO4 | | | | | | |
| | CO5 | | | | | | |
| | CO6 | | | | | | |

Graphical Analysis as downloaded from EMS

Course Coordinator

Academic Year: (odd/even semester)

Institute/Branch: MRU-Faculty of

Program:

| S. No. | Class/Semester | Consolidated CO-Direct Indirect Attainment Report (As downloaded from EMS) for all the Courses in all semesters | | | | | | | | | |
|--------|-------------------|--|-------------|--------------|--------------------|-----|-------------------|---------------------|--------------------|--|--|
| | | Course Title | Course Code | Lecture type | Course Coordinator | CO | Direct Attainment | Indirect Attainment | Overall Attainment | | |
| 1 | B.Tech. CSE Sem 1 | | | | | CO1 | | | | | |
| | | | | | | CO2 | | | | | |
| | | | | | | | | | | | |
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EMS Coordinator

Department of.....

Academic Year:.....{odd/even semester}

Institute/Branch: MRU-Faculty of

Program:

| S. No. | Class/ Sem | CO PO Direct Indirect Attainment | | | | | | | | Target Achieved / Not Achieved | Action Planned | Recommendations of DAC | | |
|--------|------------|----------------------------------|-------------|--------------|----------------|-----|-------------------|---------------------|--------------------|--------------------------------|----------------|------------------------|--|--|
| | | Course Title | Course Code | Lecture Type | Course Teacher | CO | Direct Attainment | Indirect Attainment | Overall Attainment | | | | | |
| 1 | | | | | | CO1 | | | | | | | | |
| | | | | | | CO2 | | | | | | | | |
| | | | | | | | | | | | | | | |
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| Details of DAC Members | Signatures with Date |
|------------------------|----------------------|
| | |
| | |

This is a published document approved by **4th Academic Council Meeting held on 12th April, 2017. It contains 73 pages and is attested.**