BEST PRACTICE – 1

ONE SEMESTER INDUSTRIAL TRAINING

Supporting documents for Best Practice - One Semester Industrial Training

DEPARTMENT WISE DOCUMENTS EVIDENCING ADOPTION OF ONE SEMESTER INDUSTRIAL TRAINING IN CURRICULUM

Department of Civil Engineering

Guru Nanak Dev Engineering College, Ludhiana
Civil Engineering Department

Minutes of Meeting

No CE - 2933 **Dated: 10/12/2016**

The 6th meeting of Board of Studies (Civil Engineering) was held on 10th December, 2016 in the office of Head of Department, Civil department and chaired by Dr. K S Gill (Professor & Head).

Following members were present in the meeting:

Dr. K S Gill– Chairman - Guru Nanak Dev Engineering College, Ludhiana

Dr. Harpal Singh – Member - Guru Nanak Dev Engineering College, Ludhiana,

Dr. H S Rai –Member- Guru Nanak Dev Engineering College, Ludhiana

Dr. B S Walia –Member- Guru Nanak Dev Engineering College, Ludhiana

Dr. Harvinder Singh – Member - Guru Nanak Dev Engineering College, Ludhiana

Er. Inderpreet Kaur – Member – Guru Nanak Dev Engineering College, Ludhiana

Dr. Sanjeev Aggarwal – Member- GZSPTU Campus, Bathinda - Subject Expert- VC Nominee

Er. J K Sharma – Special Invitee – Former Manager in L & T

Er. Harjinder Singh - Special Invitee- Guru Nanak Dev Engineering College, Ludhiana

Er. Gurdeepak Singh - Special Invitee- Guru Nanak Dev Engineering College, Ludhiana

Er. Prashant Garg - Special Invitee- Guru Nanak Dev Engineering College, Ludhiana

Er. Rupinder Singh Litt- Special Invitee- Guru Nanak Dev Engineering College, Ludhiana

Er. Charnjeet Singh- Special Invitee- Guru Nanak Dev Engineering College, Ludhiana

The Following decisions were taken against the Agenda items:

1. The BOS approved the proposal of four departmental elective and one open elective in UG Batch 2014 & onwards as departmental elective –I (Practical subject of 01 credit) in fifth semester, departmental elective-II (theory Subject of 04 credits) in sixth semester, departmental elective –III & IV (theory subjects of 04 credits each) in

seventh/eighth semester and open elective (theory subject of 03 credits) in sixth semester.

2. The BOS approved the nomenclature of departmental elective and open elective as DECE-14XXX & OECE-146XX respectively in UG Batch 2014 & onwards.
3. The BOS has approved the Minor project of 01 hour duration (01 credit) in sixth semester having total marks as 50 (30 marks as internal and 20 marks as external) in UG Batch 2014 & onwards.
4. Department has merged the two lab subjects (Computer Aided Structural Drawing-I of fifth semester and Computer Aided Structural Drawing-II of sixth semester) depending upon their syllabus content as one subject named as Computer Aided Structural Drawing & Detailing and float in fifth semester in UG Batch 2014 & onwards. The same has been approved by BOS.
5. The BOS suggested and approved the name of "Industrial Training – I" offered in fifth semester as "Industrial Training – I (Survey Camp)" for UG Batch 2014 & onwards.
6. The BOS suggested and approved the nomenclature of subject code Industrial Training – I and Industrial Training – II as TRCE-14501 & TRCE-14701from TR-14501 and TR14701 for UG Batch 2014 & onwards.
7. The BOS suggested and approved to merge the Industry oriented program (01 credit) and Industrial Training part (14 credits) as Industrial Training- II (with 15 credits) offered in 7th /8th semester for UG Batch 2014 and onwards.
8. The BOS approved the total credit distribution of the UG Batch 2014 & onwards after incorporating the amendments as:

Year	Credits
First	54
Second	54
Third	55
Forth	43
Total Credits	**206**

9. The allocation of credits has been discussed and the some changes has been approved for the following subjects for UG Batch 2014 & onwards:

S No	Sem	Course Code	Course Name	Previous Credits	Purposed Credits
1	3rd	TR-14301	Workshop Training	00	02
2	4th	CE-14401	Geomatics Engineering	04	03

3	4th	CE-14402	Construction Machinery & Works Management	04	03
4	4th	CE-14403	Design of Concrete Structures- I	05	04
5	4th	GF-14401	General Fitness	00	01
6	5th	TRCE-14501	Industrial Training-I (Survey Camp)	04	02
7	5th	DECE-145XX	Departmental Elective-I	00	01
8	6th	CE-14601	Design of Concrete Structures- II	05	04
9	6th	DECE-146XX	Departmental Elective-II	00	04
10	6th	OECE-146XX	Open Elective	04	03
11	6th	GF-14601	General Fitness	00	01
12	7th /8th	TRCE-14701	Industrial Training-II	20	15
13	7th /8th	CE-14801	Design of Steel Structures-II	05	04
14	7th /8th	DECE-148XX	Departmental Elective-III	03	04
15	7th /8th	DECE-148YY	Departmental Elective-IV	03	04
16	7th /8th	CE-14819	Major Project	04	03
17	7th /8th	GF-14701	General Fitness	00	01

10. The BoS approved the Study scheme and syllabus content of UG Batch 2014 & onwards as proposed.
11. The BOS has given the flexibility to chairman (BOS) to introduce new departmental electives in UG Batch 2014 & onwards as per demand and feedback from stakeholders.
12. The BOS approved the credits of pre-thesis seminar and pre-thesis project of PG Batch 2014 & 2016 onwards as 02 and 03 from previous credits of 04 & 04 respectively.
13. The BOS approved the total marks of pre-thesis seminar as 100 (internal only).
14. The total credits of PG course as 65 have been approved by BOS.
15. The BOS approved the Study Scheme and syllabus content of PG Batch 2016 & onwards for all different courses as proposed.
16. The BOS also approved the Program Outcomes and Course Outcomes for UG Batch 2014 and PG Batch 2014 & 2016 onwards.
17. The BOS approved the list of examiners for UG and PG courses as proposed.

The meeting ended with vote of thanks.

Dr. K S Gill
(Chairman)

Guru Nanak Dev Engineering College, Ludhiana
Department of Civil Engineering

Department Vision

To establish an outstanding centre of regional and national reputation for providing a quality engineering education to the students from the rural area of Punjab, excellent research and services to the professional and the community; to produce quality civil engineers; and to employ principles of continual quality improvement to enhance its programme and faculty.

Department Mission

a) To serve the people of Punjab and the country by providing a broad and high quality education to its student for a successful professional career.
b) To conduct strong basic and applied research for national needs.
c) To serve the construction industry; civil engineering profession and rural community through dissemination of knowledge and technical services.

Program Education Objectives (PEO)

1. To train the students so that they can work and contribute to the infrastructure development projects being undertaken by Govt. and private or any other sector companies.
2. To train students in such as a way that they can pursue higher studies so that they can contribute to the teaching profession/ research and development of civil engineering and other allied fields.
3. To train students in a manner that they should function effectively in the multicultural and multidisciplinary groups for the sustainable development and growth of civil engineering projects and profession.

Program Specific Outcomes (PSO)

1. **Understanding:** Graduates shall demonstrate sound knowledge in analysis, design, laboratory investigations and construction aspects of civil engineering infrastructure, along with good foundation in mathematics, basic sciences and technical communication.
2. **Broadness and Diversity:** Graduates will have a broad understanding of economical, environmental, societal, health and safety factors involved in infrastructural development, and shall demonstrate ability to function within multidisciplinary teams with competence in modern tool usage.
3. **Self-Learning and Service:** Graduates will be motivated for continuous self-learning in engineering practice and/or pursue research in advanced areas of civil engineering in order to offer engineering services to the society, ethically and responsibly.

Program Outcomes (PO)

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

2. **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project management and finance**: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments**.**
12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Study Scheme of Under Graduate (Batch 2014 & Onwards)

Year	Credits
First	54
Second	54
Third	52
Forth	45
Total Credits	**205**

Third Semester							**Contact Hours: 31 Hrs**	
Course Code	**Course Name**	**Load Allocation**			**Marks Distribution**		**Total Marks**	**Credits**
		L	**T**	**P**	**Internal**	**External**		
CE-14301*	Engineering Mathematics-III	3	1	-	40	60	100	4
CE-14302	Fluid Mechanics-I	3	1	-	40	60	100	4
CE-14303	Rock Mechanics & Engineering Geology	3	1	-	40	60	100	4
CE-14304	Strength of Materials	3	1	-	40	60	100	4
CE-14305	Surveying	3	1	-	40	60	100	4
CE-14306	Building Materials & Construction	3	0	-	40	60	100	3
CE-14307	Fluid Mechanics-I Lab	-	-	2	30	20	50	1
CE-14308	Strength of Materials Lab	-	-	2	30	20	50	1
CE-14309	Surveying Lab	-	-	3	30	20	50	2
TR-14301	Workshop Training	-	-	-	30	20	50	2
	Mentoring Class	-	1	-	-	-	-	-
	Total	**18**	**06**	**07**	**360**	**440**	**800**	**29**

* **This subject shall be taught by the faculty of Applied Science Department.**

Fourth Semester								**Contact Hours: 27 Hrs**
Course Code	**Course Name**	**Load Allocation**			**Marks Distribution**		**Total Marks**	**Credits**
		L	**T**	**P**	**Internal**	**External**		
CE-14401	Geomatics Engineering	3	-	-	40	60	100	3
CE-14402	Construction Machinery & Works Management	3	-	-	40	60	100	3
CE-14403	Design of Concrete Structures– I	3	1	-	40	60	100	4
CE-14404	Fluid Mechanics-II	3	1	-	40	60	100	4
CE-14405	Irrigation Engineering-I	3	1	-	40	60	100	4
CE-14406	Structural Analysis-I	3	1	-	40	60	100	4
CE-14407	Concrete Technology Lab	-	-	2	30	20	50	1
CE-14408	Structural Analysis Lab	-	-	2	30	20	50	1
GF-14401	General Fitness				100	-	100	1
	Mentoring Class	-	1	-	-	-	-	-
Total		**18**	**05**	**04**	**400**	**400**	**800**	**25**

Fifth Semester								**Contact Hours: 27 Hrs**
Course Code	**Course Name**	**L**	**T**	**P**	**Internal**	**External**	**Total**	**Credits**
CE-14501	Design of Steel Structures-I	3	1	-	40	60	100	4
CE-14502	Geotechnical Engineering	3	1	-	40	60	100	4
CE-14503	Structural Analysis - II	3	1	-	40	60	100	4
CE-14504	Transportation Engineering-I	3	1	-	40	60	100	4
CE-14505	Environmental Engineering-I	3	1	-	40	60	100	4
CE-14506	Transportation Engineering Lab	-	-	2	30	20	50	1
CE-14507	Environmental Engineering Lab	-	-	2	30	20	50	1
DECE-145XX	Departmental Elective – I	-	-	2	30	20	50	1
TRCE-14501	Industrial Training – I (Survey Camp)				60	40	100	2
	Mentoring Class	-	1	-	-	-	-	-
Total		**15**	**06**	**06**	**350**	**400**	**750**	**25**

Departmental Elective –I

S No	**Course Code**	**Course Name**
1	DECE-14508	Computer Aided Structural Drawing & Detailing
2	DECE-14509	Computer Aided Structural Analysis & Design
3	DECE-14510	Building Information Modeling

Sixth Semester							Contact Hours: 29 Hrs	
Course Code	**Course Name**	**Load Allocation**			**Marks Distribution**		**Total Marks**	**Credits**
		L	**T**	**P**	**Internal**	**External**		
CE-14601	Design of Concrete Structures-II	3	1	-	40	60	100	4
CE-14602	Foundation Engineering	3	1	-	40	60	100	4
CE-14603	Professional Practice	3	1	-	40	60	100	4
CE-14604	Environmental Engineering – II	3	1	-	40	60	100	4
DECE-146XX	Departmental Elective –II	3	1	-	40	60	100	4
OEXX-146YY	Open Elective*	3	-	-	40	60	100	3
CE-14609	Geotechnical Engineering Lab	-	-	2	30	20	50	1
CE-14610	Computer Aided Analysis & Design	-	-	2	30	20	50	1
PRCE-14601	Minor Project	-	-	1	60	40	100	1
GF-14601	General Fitness	-	-	-	100	-	100	1
	Mentoring Class	-	1	-	-	-	-	-
	Total	**18**	**06**	**05**	**460**	**440**	**900**	**27**

List of Departmental Elective – II (6th Semester)		
S No	**Course Code**	**Course name**
1	DECE-14605	Numerical Methods in Civil Engineering
2	DECE-14606	Finite Elements Methods
3	DECE-14607	Reinforced Earth and Geotextiles
4	DECE-14608	Infrastructure Development and Management
List of Open Electives (6th Semester)*		
S No	**Course Code**	**Course Name**
1	OECE-14601	Building Maintenance & Safety
2	OECE-14602	Project Monitoring & Management

**(The students of Civil Engineering Department will select any one subject floated by the other department as their open elective subject other than their parent department.)*

Seventh/Eighth Semester					
Course Code	**Course Name**	**Mark Distribution**		**Total Marks**	**Credits**
		Internal	**External**		
TRCE-14701	Industrial Training – II	450	350	800	13
TRCE-14702	Industry Oriented Program	200	-	200	02
	Total	**650**	**350**	**1000**	**15**

Seventh/Eighth Semester								**Contact Hours: 30 Hrs**
Course Code	**Course Name**	**Load Allocation**			**Marks Distribution**		**Total Marks**	**Credits**
		L	**T**	**P**	**Internal**	**External**		
CE-14801	Design of Steel Structures-II	3	1	-	40	60	100	4
CE-14802	Elements of Earthquake Engineering	3	1	-	40	60	100	4
CE-14803	Irrigation Engineering-II	3	1	-	40	60	100	4
CE-14804	Transportation Engineering-II	3	1	-	40	60	100	4
CE-14805	Seminar	-	-	2	50	-	50	2
DECE-148XX	Departmental Elective–III*	3	1	-	40	60	100	4
DECE-148YY	Departmental Elective- IV*	3	1	-	40	60	100	4
PRCE-14701	Major Project	-	-	3	120	80	200	3
GF-14701	General Fitness	-	-	-	100	-	100	1
	Mentoring Class	-	1	-	-	-	-	-
	Total	**18**	**07**	**05**	**510**	**440**	**950**	**30**

**** Departmental Elective III and IV should not be from the same group.***

Departmental Elective – III	• DECE-14806 Dynamics of Structures • DECE-14807 Advanced Reinforced Concrete Design • DECE-14808 Pre-stressed Concrete • DECE-14809 Pavement Design • DECE-14810 Traffic Engineering • DECE-14811 Bridge Engineering • DECE-14812 Matrix methods of Structural Analysis
Departmental Elective – IV	• DECE-14815 Ground Improvement Techniques • DECE-14816 Soil Dynamics and Machine Foundation • DECE-14817 Earth and Earth Retaining Structures • DECE-14818 Advanced Environmental Engineering • DECE-14819 Environmental Impact Assessment • DECE-14820 Flood Control and River Engineering • DECE-14821 Hydrology and Dams • DECE-14822 Disaster Management

Department of Computer Science Engineering

Guru Nanak Dev Engineering College, Ludhiana
Department of Computer Science & Engineering

Ref. No.: CSE/26.94

Dated: 13/7/2017

Minutes of 6th meeting of Board of Studies of Computer Science and Engineering Department held on 12.07.2017 at 11:00 am in the Committee Room, GNDEC, Ludhiana.

The following persons were present:

1. Dr. Parminder Singh, Professor& Head, Department of Computer Science and Engineering, GNDEC, Ludhiana (Chairman)
2. Er. Amanpreet Singh Brar, Associate Professor, Department of Computer Science and Engineering, GNDEC, Ludhiana (Member)
3. Er. Sumeet Kaur Sehra, Assistant Professor, Department of Computer Science and Engineering, GNDEC, Ludhiana (Member)
4. Er. Vivek Thapar, Assistant Professor, Department of Computer Science and Engineering, GNDEC, Ludhiana (Member)
5. Dr. Gurpreet Singh Lehal, Professor, Department of Computer Science, Punjabi University, Patiala (Member)
6. Dr. Paramjit Singh, Professor, Giani Zail Singh Campus, College of Engineering and Technology, Bathinda (Member)
7. Dr. Shaveta Rani, Professor, Giani Zail Singh Campus, College of Engineering and Technology, Bathinda (External Expert)

The meeting started with welcome address by chairman BOS, and the already circulated agenda was put up for discussion. Following decisions were taken unanimously:

Dr. Parminder Singh

Er. Amanpreet Singh Brar

Er. Sumeet Kaur Sehra

Er. VivekThapar

Dr. Gurpreet Singh Lehal

Dr. Paramjit Singh 12/7/17

Dr. Shaveta Rani

Proceedings:

Agenda Item 1

Approval of change of conduct hours and credits of following courses of 1st year B.Tech. program:

a. Fundamentals of Computer Programming and Information Technology
   Lecture: 03 hours, Credit: 03
   Tutorial: 01 hour, Credit: 0.5

b. Fundamentals of Computer Programming and Information Technology Lab.
   Practical: 02 hour, Credit: 01

Approved

Committee approved the syllabi and authorized Chairman BOS for further changes if required.

The followings suggestions are given

Course Code	Course Name	Suggestions
BTCS-101	FCPIT	• Section wise no. of hours to be mentioned • Revision of syllabus is required
BTCS-102	FCPIT Laboratory	• Revision of contents is required

Agenda Item 2

Approval of changed subject codes of already finalized course scheme of B.Tech. Computer Science and Engineering (Batch 2014 onwards).

Approved

Dr. Parminder Singh
Er. VivekThapar
Dr. Shaveta Rani
Er. Amanpreet Singh Brar
Dr. Gurpreet Singh Lehal
Er. Sumeet Kaur Sehra
Dr. Paramjit Singh

12/7/17

B.Tech. Computer Science and Engineering Course Scheme

Course Code	Course Name	Load Allocation			Marks Distribution		Total Marks	Credits
		L	T	P	Internal	External		
Third Semester								
CS-14301	Mathematics-III	3	1	-	40	60	100	4
CS-14302	Computer Architecture and Organization	3	1	-	40	60	100	4
CS-14303	Digital Circuits and Logic Design	3	1	-	40	60	100	4
CS-14304	Data Structures and Algorithms	3	1	-	40	60	100	4
CS-14305	Object Oriented Programming using C++	3	1	-	40	60	100	4
CS-14306	Digital Circuits and Logic Design Lab	-	-	4	30	20	50	2
CS-14307	Data Structures and Algorithms Lab	-	-	4	30	20	50	2
CS-14308	Object Oriented Programming using C++ Lab	-	-	4	30	20	50	2
TR-14301	Workshop Training*				60	40	100	2
Total		**15**	**5**	**12**	**350**	**400**	**750**	**28**
		Contact Hours= 32						
Fourth Semester								
CS-14401	Discrete Structures	3	1	-	40	60	100	4
CS-14402	Operating System	3	1	-	40	60	100	4
CS-14403	Computer Networks	3	1	-	40	60	100	4
CS-14404	Microprocessor Architecture and Programming	3	1	-	40	60	100	4
CS-14405	Java Programming	3	1	-	40	60	100	4
CS-14406	Operating Systems Lab	-	-	4	30	20	50	2
CS-14407	Computer Networks Lab	-	-	4	30	20	50	2

Dr. Parminder Singh
Er. VivekThapar
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12/7/17

CS-14408	Microprocessor Architecture and Programming Lab	-	-	2	30	20	50	1
CS-14409	Java Programming Lab	-	-	4	30	20	50	2
GF-14401	General Fitness				100	-	100	1
Total		15	5	14	420	380	**800**	**28**
		Contact Hours= 34						
Fifth Semester								
CS-14501	Relational Database Management System	3	1	-	40	60	100	4
CS-14502	Computer Graphics	3	1	-	40	60	100	4
CS-14503	Design and Analysis of Algorithms	3	1	-	40	60	100	4
CS-14504	Web Technologies	3	1	-	40	60	100	4
DECS-145xx	Elective-I	3	1	-	40	60	100	4
CS-14511	Relational Database Management System Lab	-	-	4	30	20	50	2
CS-14512	Computer Graphics Lab	-	-	2	30	20	50	1
CS-14513	Design and Analysis of Algorithms Lab	-	-	2	30	20	50	1
CS-14514	Web Technologies Lab	-	-	4	30	20	50	2
TR-14501	Industrial Training-I				60	40	100	2
Total		**15**	**5**	**12**	**380**	**420**	**800**	**28**
		Contact Hours= 32						
Sixth Semester								
CS-14601	Theory of Computation	3	1	-	40	60	100	4
CS-14602	Advanced Database Systems	3	1	-	40	60	100	4
CS-14603	Software Engineering	3	1	-	40	60	100	4
DECS-146xx	Elective-II	3	1	-	40	60	100	4
OECS-146xx	Open Elective	3	-	-	40	60	100	3

Dr. Parminder Singh — Er. Vivek Thapar — Dr. Shaveta Rani

Er. Amanpreet Singh Brar — Dr. Gurpreet Singh Lehal

Er. Sumeet Kaur Sehra — Dr. Paramjit Singh

12/7/17

CS-14610	Advanced Database Systems Lab	-	-	4	30	20	50	2
CS-14611	Software Engineering Lab	-	-	4	30	20	50	2
DECS-146xx	Elective-II Lab	-	-	2	30	20	50	1
PRCS-14601	Minor Project	-	-	1	40	60	100	1
GF-14601	General Fitness				100	-	100	1
Total		**15**	**4**	**11**	**390**	**360**	**750**	**26**
		Contact Hours= 30						

Seventh/Eighth Semester

CS-14701	Advanced Computer Networks	3	1	-	40	60	100	4
CS-14702	Compiler Design	3	1	-	40	60	100	4
CS-14703	Cyber Laws and IPR	3	1	-	40	60	100	4
DECS-147xx	Elective-III	3	1	-	40	60	100	4
DECS-147xx	Elective-IV	3	1	-	40	60	100	4
CS-14715	Advanced Computer Networks Lab	-	-	4	30	20	50	2
PRCS-14701	Major Project	-	-	3	120	80	200	3
DECS-147xx	Elective-III Lab	-	-	2	30	20	50	1
GF-14701	General Fitness				100	-	100	1
Total		**15**	**5**	**09**	**460**	**440**	**900**	**27**
		Contact Hours= 29						

Seventh/Eighth Semester

TRCS-14701	Industrial Training-II#	-	450	350	800	13
TRCS-14702	Industry Oriented Training$	-	-	200	200	02
Total			**450**	**550**	**1000**	**15**

*Institutional training will be imparted at the end of 2nd semester in the institute for four weeks

This component will be based on Industrial Training/Institute Department Training/Project Work/Skill Development (Grade-6) Entrepreneurship Training facility created by IKG-PTU, Mohali.

$This component will be based on Two Weeks Workshop/Software/Latest Development through Global Initiative of Academic Networks (GIAN).

Dr. Parminder Singh

Er. Amanpreet Singh Brar

Er. Sumeet Kaur Sehra

Er. VivekThapar

Dr. Gurpreet Singh Lehal

Dr. Paramjit Singh

Dr. Shaveta Rani

12/7/17

List of Electives

Elective-I

DECS-14505 Advanced Computer Architecture

DECS-14506 Cryptography and Network Security

DECS-14507 Wireless Networks

DECS-14508 Ethical Hacking

DECS-14509 Network Protocols

DECS-14510 Embedded Systems

Elective-II

DECS-14604 Simulation and Modelling

DECS-14605 Digital Image Processing

DECS-14606 Artificial Intelligence

DECS-14607 Advanced Java

DECS-14608 .NET Technologies

DECS-14609 Linux Administration

DECS-14613 Simulation and Modelling Lab

DECS-14614 Digital Image Processing Lab

DECS-14615 Artificial Intelligence Lab

DECS-14616 Advanced Java Lab

DECS-14617 .NET Technologies Lab

DECS-14618 Linux Administration Lab

Elective-III

Dr. Parminder Singh

Er. VivekThapar

Dr. Shaveta Rani

Er. Amanpreet Singh Brar

Dr. Gurpreet Singh Lehal

Er. Sumeet Kaur Sehra

Dr. Paramjit Singh

12/7/17

DECS-14704 Parallel Computing

DECS-14705 Mobile Computing

DECS-14706 Cloud Computing

DECS-14707 Big Data and Business Analytics

DECS-14708 Data Warehouse and Data Mining

DECS-14717 Parallel Computing Lab

DECS-14718 Mobile Computing Lab

DECS-14719 Cloud Computing Lab

DECS-14720 Big Data and Business Analytics Lab

DECS-14721 Data Warehouse and Data Mining Lab

Elective-IV

DECS-14709 Natural Language Processing

DECS-14710 Machine Learning

DECS-14711 Software Testing and Quality Assurance

DECS-14712 Information Security

DECS-14713 Soft Computing

DECS-14714 Agile Software Development

Open Electives

OECS-14601 Software Project Management

OECE-14602 Object Oriented Programming using JAVA

Dr. Parminder Singh Er. VivekThapar Dr. Shaveta Rani

Er. Amanpreet Singh Brar Dr. Gurpreet Singh Lehal

Er. Sumeet Kaur Sehra Dr. Paramjit Singh

12/12/17

Agenda Item 3

Finalizing the syllabus of subjects of 7th/8th semester of B.Tech. Computer Science and Engineering (Batch 2014 Onwards)

After discussion and deliberation, certain modifications have been done and others recommendations will be incorporated in the proposed Syllabi of subjects of B.Tech. Computer Science and Engineering.

Committee approved the syllabi and authorized Chairman BOS for further changes if required.

The followings suggestions are given:

SEVENTH SEMESTER		
Course Code	**Course Name**	**Suggestions**
CS-14702	Complier Design	• To check the syllabus of Theory of Computation offered in 6th semester for repetition
CS-14703	Cyber Laws and IPR	• To include the latest amendment of IT Act 2000. • Case studies related to breach of cyber laws in different categories. • Books related with case studies to be explored.
DECS-14704	Parallel Computing	• Parallel programming support environments used in laboratory work to be explored in detail in theory e.g. OpenMP, and MPI.
DECS-14707	Big Data and Business Analytics	• Business Analytics portion should be included and machine learning portion can be reduced.
DECS-14708	Data Warehouse and Data Mining	• Sequencing of topics of first section to be checked. • Terms used in second section to be checked. • In last section specify data warehousing applications and data mining trends
DECS-14709	Natural Language Processing	• In recommended book section, book of author Rajeev Sangal, PHI publication to be included. • Section corresponding to Application of Natural Language Processing to be incorporated.
DECS-14710	Machine Learning	• Section corresponding to Application of Machine Learning to be incorporated. • Hidden Markov model to be included. • Introduction to Deep Learning concept to be included in Artificial Neural Networks Section
DECS-14711	Software Testing and Quality Assurance	• In introduction section software testing and quality assurance topics to be incorporated

Dr. Parminder Singh
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12/7/17

		• Sequencing of second, third and fifth section to be checked. • Debugging and defect management should be included in one section. • Testing automation may be included.
DECS-14712	Information Security	• Sniffing network traffic topic to be incorporated in information security hurdles section • In cryptography section reorganization of topics should be done. • Book of author Frozen to be incorporated in recommended books section. • Repetition of topics to be checked.
DECS-14713	Soft Computing	• Section other computing techniques should be renamed as optimization techniques.
DECS-14714	Agile Software Development	• Section Agile Design should be renamed as Design principles • Section Agile Testing should be renamed as Testing • Reorganization of topics should be done and section heading should be renamed.
DECS-14719	Cloud Computing Lab	• Practical V iCanCloud can be skipped.
DECS-14721	Data Warehouse and Data Mining Lab	• Simple calculator program can be skipped
OECS-14601	Software Project Management	• Staffing pattern should be included along with recruitment process • No. of lectures should be mentioned
OECS-14602	Object Oriented Programming using Java	• Inheritance section should be splitted into two sections and polymorphism topic should be included in the second section.

Agenda Item 4

Approval of panel of external question paper setters for end semester examinations of B.Tech.and M.Tech.

Approved

Committee approved the Panel and authorized Chairman BOS for further changes if required.

Dr. Parminder Singh
Er. Amanpreet Singh Brar
Er. Sumeet Kaur Sehra
Er. VivekThapar
Dr. Gurpreet Singh Lehal
Dr. Paramjit Singh
Dr. Shaveta Rani

12/7/17

Department of Electronics and Communication Engineering

GURU NANAK DEV ENGINEERING COLLEGE LUDHIANA
(Department of Electronics & Communication Engineering)
(An Autonomous College under UGC Act.)

No.ECE/165

Date: 19.07.17

MINUTES OF MEETING

Minutes of the 8th meeting of Board of Studies of Department of Electronics & Communication Engineering held on 19.07.2017 at 11.00 AM in HOD office.

The following members were present in the meeting: -

1. Dr. Sandeep Singh Gill, Chairman, BOS
2. Pf. Ameeta Seehra, Member
3. Pf. Narwant Singh Grewal, Member
4. Dr. Balwinder Singh Dhaliwal, Member
5. Dr. Munish Rattan, Member
6. Dr. Baljeet Kaur, Member

The following decision were taken: -

1. The syllabus of the newly introduced course in the 2017 study scheme of Basics of Electronics Engineering (Theory & Lab) was discussed and finalized.

2. The syllabus of the 8th semester subjects under the 2014 study scheme was discussed and approved.

It was decided that as external members could not be called for the meeting due to shortage of time the syllabus of all these courses be circulated for their comments.

Dr. Sandeep Singh Gill
Chairman
Board of Studies
Department of ECE

53

B. Tech (ECE) Study Scheme and Syllabus

2014 Admission Batch Onwards

3rd Semester

Course Code	Course Title	Load Allocation			Marks Distribution		Total Marks	Credits
		L	T	P	Internal	External		
EC-14301	Engineering Mathematics-III	3	1	-	40	60	100	4
EC-14302	Object Oriented Programming Using C++ and Data Structures	3	1	-	40	60	100	4
EC-14303	Electronics Devices & Circuits - I	3	1	-	40	60	100	4
EC-14304	Electronic Measurement & Instrumentation	3	1	-	40	60	100	4
EC-14305	Network Analysis and Synthesis	3	1	-	40	60	100	4
EC-14306	Lab Electronics Devices & Circuits - I	-	-	2	30	20	50	1
EC-14307	Lab Electronic Measurement & Instrumentation	-	-	2	30	20	50	1
EC-14308	Lab Object Oriented Programming and Data Structures	-	-	2	30	20	50	1
TR-14301	Workshop Training*	-	-	-	60	40	100	2
TOTAL		**15**	**5**	**6**	**350**	**400**	**750**	**25**

***The marks will be awarded on the basis of 4 weeks workshop training conducted after 2nd Semester**

4th Semester

Course Code	Course Title	Load Allocation			Marks Distribution		Total Marks	Credits
		L	T	P	Internal	External		
EC-14401	Linear Control Systems	3	1	-	40	60	100	4
EC-14402	Electronics Devices & Circuits - II	3	1	-	40	60	100	4
EC-14403	Signals & Systems	3	1	-	40	60	100	4
EC-14404	Electromagnetic Field Theory	3	1	-	40	60	100	4
EC-14405	Digital Electronics	3	1	-	40	60	100	4
EC-14406	Pulse Wave Shaping and Switching	3	1	-	40	60	100	4
EC-14407	Lab Electronics Devices & Circuits - II	-	-	2	30	20	50	1
EC-14408	Lab Digital Electronics	-	-	2	30	20	50	1
EC-14409	Lab Signals & Systems	-	-	2	30	20	50	1
GF-14401	**General Fitness**				100	NA	100	1
TOTAL		**18**	**6**	**6**	**430**	**420**	**850**	**28**

5th Semester

Course Code	Course Title	Load Allocation			Marks Distribution		Total Marks	Credits
		L	T	P	Internal	External		
EC-14501	Antenna and Wave Propagation	3	1	-	40	60	100	4
EC-14502	Analog Communication Systems	3	1	-	40	60	100	4
EC-14503	Digital Signal Processing	3	1	-	40	60	100	4
EC-14504	Linear Integrated Circuits	3	1	-	40	60	100	4
EC-14505	Microprocessors & Interfacing	3	1	-	40	60	100	4
DEEC-145XX	Department Elective-I	3	1	-	40	60	100	4
EC-14510	Lab Linear Integrated Circuits	-	-	2	30	20	50	1
EC-14511	Lab Analog Communication Systems	-	-	2	30	20	50	1
EC-14512	Lab Microprocessors & Interfacing	-	-	2	30	20	50	1
EC-14513	Lab Digital Signal Processing	-	-	2	30	20	50	1
TR-14501	**Industrial Training-I***				60	40	100	2
TOTAL		**18**	**6**	**8**	**420**	**480**	**900**	**30**

***The marks will be awarded on the basis of 06 weeks industrial/institutional training conducted after 4th Semester**

Department Elective-I

DEEC-14506 Intellectual Property Rights

DEEC-14507 Business Analytics

DEEC-14508 Software Project Management

DEEC-14509 Total Quality Management

B. Tech. Study Scheme

6th Semester

Course Code	Course Title	Load Allocation			Marks Distribution		Total Marks	Credits
		L	T	P	Internal	External		
EC-14601	Digital Communication System	3	1	-	40	60	100	4
EC-14602	Microwave & Radar Engineering	3	1	-	40	60	100	4
EC-14603	Wireless & Mobile Communication System	3	1	-	40	60	100	4
EC-14604	Microcontrollers and Embedded System	3	1	-	40	60	100	4
DEEC-146XX	Department Elective-II	3	1	-	40	60	100	4
OEXX-146XX	Open Elective	3	-	-	40	60	100	3
EC-14611	Microcontrollers and Embedded System Lab	-	-	2	30	20	50	1
EC-14612	Microwave Engineering Lab	-	-	2	30	20	50	1
EC-14613	Digital Communication System Lab	-	-	2	30	20	50	1
PREC-14601	Minor Project	-	-	1	60	40	100	1
GF-14601	**General Fitness**				100	NA	100	1
TOTAL		**18**	**5**	**7**	**490**	**460**	**950**	**28**

Department Elective-II

DEEC-14605 Micro Electronics
DEEC-14606 Digital System Design
DEEC-14607 Information Theory & Coding
DEEC-14608 Intelligent Robotics
DEEC-14609 Java Programming
DEEC-14610 Computer Networks

Open Elective (For other Branches)

OEEC-14601 Microprocessors and Microcontrollers
OEEC-14602 Neural Networks & Fuzzy logic

7th /8th Semester

Course Code	Course Title	Course Component	Internal Marks	External Marks	Total Marks	Credits
TREC-14701	Industrial Training-II (Six months Industrial Training)	Industrial Training -II	450	350	800	13
TREC-14702		Industry Oriented Training	200	-	200	2
Total			650	350	**1000**	**15**

7th/8th Semester

Course Code	Course Title	Load Allocation			Marks Distribution		Total Marks	Credits
		L	T	P	Internal	External		
EC-14701	VLSI Design	3	1	-	40	60	100	4
EC-14702	Optical Communication	3	1	-	40	60	100	4
EC-14703	Engineering Management	3	1	-	40	60	100	4
DEEC-147XX	Department Elective-III	3	1	-	40	60	100	4
DEEC-147YY	Department Elective-IV	3	1	-	40	60	100	4
EC-14715	Lab Optical Communication	-	-	2	30	20	50	1
EC-14716	Lab VLSI Design	-	-	2	30	20	50	1
PREC-14701	Major Project	-	-	3	120	80	200	3
GF-14701	General Fitness	-	-	1	100	NA	100	1
TOTAL		**15**	**5**	**8**	**480**	**420**	**900**	**26**

Departmental Elective –III (Common Code XX)

DEEC-14704 CMOS based Design
DEEC-14705 Biomedical Electronics
DEEC-14706 Satellite Communication
DEEC-14707 Speech & Image Processing
DEEC-14708 Human Resource Management
DEEC-14709 Computer Organization and Architecture

Departmental Elective – IV (Common Code YY)

DEEC-14710 CAD for VLSI Design
DEEC-14711 Wireless Sensor Networks
DEEC-14712 Operation Research
DEEC-14713 Mobile Computing
DEEC-14714 Numerical Methods in Engineering

Department of Electrical Engineering

DEPARTMENT OF ELECTRICAL ENGINEERING

Syllabus Scheme for Batch 2018 onwards (3rd - 8th semester)

BACHELOR OF TECHNOLOGY IN ELECTRICAL ENGINEERING

SEMESTER - 3RD											
S. No.	Course Type	Course Code	Course Title	Subject Type	Hours per week			Internal Marks	External Marks	Total	Credits
					L	T	P				
1.	Basic Science	BSEE-101	Engineering Mathematics-III (Probability and Statistics)	Theory	3	0	0	40	60	100	3
2.	Humanities/ Social Sciences/ Management	HSMEE-101	Education, Technology and Society	Theory	3	0	0	40	60	100	3
3.	Professional Core	PCEE-101	Electrical Circuit Analysis	Theory	3	1	0	40	60	100	4
4.	Professional Core	PCEE-102	Analog Electronics	Theory	3	1	0	40	60	100	4
5.	Professional Core	PCEE-103	Electrical Machines-I (Transformer and DC Machines)	Theory	3	1	0	40	60	100	4
6.	Professional Core	PCEE-104	Electromagnetic Fields	Theory	3	0	0	40	60	100	3
7.	Professional Core	LPCEE-101	Analog Electronics Laboratory	Practical	0	0	2	30	20	50	1
8.	Professional Core	LPCEE-102	Electrical Machines Laboratory-I	Practical	0	0	2	30	20	50	1
9.	Training*	TR-101	Training-I	Practical	-	-	-	60	40	100	1
TOTAL					**18**	**3**	**4+1#**	**360**	**440**	**800**	**24**

NOTE:

* Institutional/Industrial Training of Four weeks shall be held in summer vacation after 2nd semester and marks/credit shall be awarded in 3rd semester itself.

\# There will be one period per week for Mentoring and Professional Development, final evaluation of this course will be done based on the combined assessment of Odd and Even semester of respective year of study

SEMESTER - 4TH											
S. No.	**Course Type**	**Course Code**	**Course Title**	**Subject Type**	**Hours per week**			**Internal Marks**	**External Marks**	**Total**	**Credits**
					L	**T**	**P**				
1.	Professional Core	PCEE-105	Digital Electronics	Theory	3	1	0	40	60	100	4
2.	Professional Core	PCEE-106	Electrical Machines-II (Asynchronous and Synchronous Machines)	Theory	3	1	0	40	60	100	4
3.	Professional Core	PCEE-107	Power Electronics	Theory	3	1	0	40	60	100	4
4.	Professional Core	PCEE-108	Signals and Systems	Theory	3	1	0	40	60	100	4
5.	Professional Core	LPCEE-103	Digital Electronics Laboratory	Practical	0	0	2	30	20	50	1
6.	Professional Core	LPCEE-104	Electrical Machines Laboratory-II	Practical	0	0	2	30	20	50	1
7.	Professional Core	LPCEE-105	Power Electronics Laboratory	Practical	0	0	2	30	20	50	1
8.	Seminar	PREE-101	Seminar and Technical Report Writing	Practical	0	0	2	50	0	50	1
9.	Mandatory Course$	MCEE-101	Environmental Science	Theory	2	0	0	50	0	50	S/US
10.	Mentoring	MPD-102	Mentoring and Professional Development	Practical	0	0	1	100	0	100	1
TOTAL					**14**	**4**	**9**	**450**	**300**	**750**	**21**

NOTE:

$ Marks of non-credit courses are excluded from total and minimum 40% score required to pass.

SEMESTER - 5TH											
S. No.	Course Type	Course Code	Course Title	Subject Type	Hours per week			Internal Marks	External Marks	Total	Credits
					L	T	P				
1.	Professional Core	PCEE-109	Power Systems – I (Apparatus and Modelling)	Theory	3	1	0	40	60	100	4
2.	Professional Core	PCEE-110	Control Systems	Theory	3	1	0	40	60	100	4
3.	Professional Core	PCEE-111	Microprocessors and Microcontrollers	Theory	3	1	0	40	60	100	4
4.	Professional Core	PCEE-112	Measurements and Instrumentation	Theory	3	1	0	40	60	100	4
5.	Professional Core	PCEE-113	Electric Generation and Economics	Theory	3	1	0	40	60	100	4
6.	Professional Core	LPCEE-106	Power Systems Laboratory-I	Practical	0	0	2	30	20	50	1
7.	Professional Core	LPCEE-107	Control Systems Laboratory	Practical	0	0	2	30	20	50	1
8.	Professional Core	LPCEE-108	Microprocessors and Microcontrollers Laboratory	Practical	0	0	2	30	20	50	1
9.	Training*	TR-102	Training-II	Practical	-	-	-	60	40	100	1
10.	Mandatory Course$	MCI-102	Constitution of India	Theory	2	0	0	50	0	50	S/US
TOTAL					**17**	**5**	**6+1#**	**400**	**400**	**800**	**24**

NOTE:

* Industrial/Institutional Training of Four weeks shall be held in summer vacation after 4th semester and marks/credit shall be awarded in 5th semester itself.

$ Marks of non-credit courses are excluded from total and minimum 40% score required to pass.

\# There will be one period per week for Mentoring and Professional Development, final evaluation of this course will be done based on the combined assessment of Odd and Even semester of respective year of study.

SEMESTER - 6TH											
S. No.	**Course Type**	**Course Code**	**Course Title**	**Subject Type**	**Hours per week**			**Internal Marks**	**External Marks**	**Total**	**Credits**
					L	**T**	**P**				
1.	Professional Core	PCEE-114	Power Systems – II (Operation and Control)	Theory	3	1	0	40	60	100	4
2.	Professional Core	PCEE-115	Industrial Drives and Control	Theory	3	0	0	40	60	100	3
3.	Professional Elective	PEEE-XXX	Elective-I	Theory	3	1	0	40	60	100	4
4.	Professional Elective	PEEE-XXX	Elective-II	Theory	3	1	0	40	60	100	4
5.	Open Elective	OEXX-XXX	Open Elective-I	Theory	3	0	0	40	60	100	3
6.	Professional Core	LPCEE-109	Power Systems Laboratory-II	Practical	0	0	2	30	20	50	1
7.	Professional Core	LPCEE-110	Measurements and Instrumentation Laboratory	Practical	0	0	2	30	20	50	1
8.	Professional Core	LPCEE-111	Industrial Drives and Control Laboratory	Practical	0	0	2	30	20	50	1
9.	Project	PREE-102	Minor Project	Practical	0	0	2	50	50	100	1
10.	Mentoring	MPD-103	Mentoring and Professional Development	Practical	0	0	1	100	0	100	1
TOTAL					**15**	**3**	**9**	**440**	**410**	**850**	**23**

SEMESTER - 7TH											
S. No.	Course Type	Course Code	Course Title	Subject Type	Hours per week			Internal Marks	External Marks	Total	Credits
					L	T	P				
1.	Professional Elective	PEEE-XXX	Elective-III	Theory	3	1	0	40	60	100	4
2.	Professional Elective	PEEE-XXX	Elective-IV	Theory	3	1	0	40	60	100	4
3.	Open Elective	OEXX-XXX	Open Elective-II	Theory	3	0	0	40	60	100	3
4.	Project	PREE-103	Project-I	Practical	0	0	6	50	50	100	3
5.	Training*	TR-103	Training-III	Practical	-	-	-	100	50	150	2
6.	Mandatory Course$	MCI-103	Organisational Behavior	Theory	2	0	0	50	0	50	S/US
TOTAL					**11**	**2**	**6+1#**	**320**	**280**	**600**	**16**

NOTE:

* Institutional/Industrial Training of Six weeks shall be held in summer vacation after 6th semester and marks/credit shall be awarded in 7th semester itself.

$ Marks of non-credit courses are excluded from total and minimum 40% score required to pass.

\# There will be one period per week for Mentoring and Professional Development, final evaluation of this course will be done based on the combined assessment of Odd and Even semester of respective year of study.

SEMESTER - 8TH											
S. No.	Course Type	Course Code	Course Title	Subject Type	Hours per week			Internal Marks	External Marks	Total	Credits
					L	T	P				
1.	Professional Elective	PEEE-XXX	Elective-V	Theory	3	1	0	40	60	100	4
2.	Professional Elective	PEEE-XXX	Elective-VI	Theory	3	1	0	40	60	100	4
3.	Open Elective	OEXX-XXX	Open Elective-III	Theory	3	0	0	40	60	100	3
4.	Project	PREE-104	Project-II	Practical	0	0	6	50	50	100	3
5.	Mentoring	MPD-104	Mentoring and Professional Development	Practical	0	0	1	100	0	100	1
TOTAL					**9**	**2**	**7**	**270**	**230**	**500**	**15**

List of Professional Elective Courses (TRACK-I)

ENERGY CONVERSION AND POWER SYSTEMS			
S. No.	**Professional Elective Course**	**Course code**	**Course Name**
1.	**Elective –I**	PEEE-101	Renewable Energy Sources
2.		PEEE-103	Solar and Wind Energy
3.	**Elective –II**	PEEE-105	Energy Efficient Machines
4.		PEEE-107	Computer Aided Electrical Machine Design
5.	**Elective –III**	PEEE-109	Power System Reliability
6.		PEEE-111	Power System Planning
7.	**Elective –IV**	PEEE-113	Sub-Station Automation
8.		PEEE-115	Smart Grids
9.	**Elective –V**	PEEE-117	High Voltage Engineering
10.		PEEE-119	High Voltage Transmission
11.	**Elective –VI**	PEEE-121	Power Quality Improvement
12.		PEEE-123	Digital Protection of Power system

List of Professional Elective Courses (TRACK-II)

INSTRUMENTATION AND CONTROL SYSTEMS			
S. No.	**Professional Elective Course**	**Course code**	**Course Name**
1.	**Elective –I**	PEEE-102	Embedded Systems and PLC
2.		PEEE-104	Automatic Control and Robotics
3.	**Elective –II**	PEEE-106	Digital Control System
4.		PEEE-108	Process Dynamics and Control
5.	**Elective –III**	PEEE-110	Optimization Techniques
6.		PEEE-112	Artificial Intelligence Techniques
7.	**Elective –IV**	PEEE-114	Digital Signal Processing
8.		PEEE-116	Biomedical Signals and Instrumentation
9.	**Elective –V**	PEEE-118	SCADA and Distributed Control System
10.		PEEE-120	Data Communication and Networking
11.	**Elective –VI**	PEEE-122	Virtual Instrumentation
12.		PEEE-124	Fuzzy Expert Systems

List of Open Elective subject offered by Electrical Engineering Department to all other Departments.

S. No.	**Open Elective Course**	**Course code**	**Course Name**
1.	**Open Elective –I**	OPEE-101	Energy Auditing and Management
2.		OPEE-102	Elements of Power System
3.	**Open Elective –II**	OPEE-103	Non-Conventional Energy Sources
4.		OPEE-104	Automation Control and Robotics
5.	**Open Elective –III**	OPEE-105	Soft Optimization Techniques
6.		OPEE-106	Smart Electrical Machines

Minor Specialization Course for Electrical Engineering

S. No.	Course code	Course Name	Hours Per week			Internal awards	External Awards	Total	Credits
			L	T	P				
1.	MnPCEE-101	Electrical Machines	3	0	0	40	60	100	3
2.	MnPCEE-102	Electrical Measurement and Instrumentation	2	0	0	40	60	100	2
3.	MnPCEE-103	Power Generation, Transmission and Utilization	3	0	0	40	60	100	3
4.	MnPEEE-101	Renewable Energy Systems	3	0	0	40	60	100	3
5.	MnLPCEE-101	Electrical Machines Laboratory	0	0	2	30	20	50	1

Department of IT Engineering

Guru Nanak Dev Engineering College, Ludhiana
Department of Information Technology

Ref. No.: IT/30/2899 Dated: 08-08-2017

Minutes of 5th meeting of Board of Studies of Information Technology department held on August 08, 2017 at 10:00 am in the office of HOD (IT).

Following members were present:

1. Dr. Kulvinder Singh Mann, Professor & Head, Department of Information Technology, GNDEC, Ludhiana (Chairman)
2. Dr. Akshay Girdhar, Professor , Department of Information Technology, GNDEC, Ludhiana (Member)
3. Dr. Manpreet Singh, Assistant Professor, Department of Information Technology, GNDEC, Ludhiana (Member)
4. Dr. Kiran Jyoti, Assistant Professor, Department of Information Technology, GNDEC, Ludhiana (Member)

External Members

5. Dr. Savita Gupta, Professor, UIET, Punjab University Chandigarh (Member)
6. Dr. Amardeep Singh, Professor, UCOE, Punjabi University, Patiala (Member)
7. Dr. Krishan Kumar Saluja, Professor, UIET, Punjab University Chandigarh (Member) Not attended
8. Er. Harpreet Singh, MD, Harkash Technology Pvt. Ltd., Ludhiana (Member)

Dr. Kulwinder Singh Mann

Dr. Kiran Jyoti

Dr. Krishan Kumar Saluja

Dr. Akshay Girdhar

Dr. Savita Gupta

Er. Harpreet Khattar

Dr. Manpreet Singh

Dr. Amardeep Singh

Agenda Item-1

1.1 Amendments in Scheme 2014 of B.Tech Information Technology for Batch 2014 onwards for 7th /8th Semester

Third Semester

Course Code	Course Name	Load Allocation			Marks Distribution		Total Marks	Credits
		L	T	P	Internal	External		
IT-14301	IT Methodologies	3	1	-	40	60	100	4
IT-14302	Social and Professional aspects of IT	3	1	-	40	60	100	4
IT-14303	Data Structures and Programming Methodology	3	1	-	40	60	100	4
CS-14303	Digital Circuits and Logic Design	3	1	-	40	60	100	4
CS-14305	Object Oriented Programming using C++	3	1	-	40	60	100	4
IT-14304	IT Methodologies Lab	-	-	3	30	20	50	2
IT-14305	Data Structures and Programming Methodology Lab	-	-	4	30	20	50	2
CS-14306	Digital Circuits and Logic Design Lab	-	-	2	30	20	50	1
CS-14308	Object Oriented Programming using C++ Lab	-	-	4	30	20	50	2
TR-14301	Workshop Training*		-	-	60	40	100	2
Total		**15**	**5**	**13**	**380**	**420**	800	**29**
		Contact Hours= 33						

* Workshop Training will be imparted at the end of 2nd semester in the institute for four weeks in the college Central Workshop

Dr. Kulwinder Singh Mann

Dr. Kiran Jyoti

Dr. Krishan Kumar Saluja

Dr. Akshay Girdhar

Dr. Savita Gupta

Er. Harpreet Khattar

Dr. Manpreet Singh

Dr. Amardeep Singh

Fourth Semester

Course Code	Course Name	Load Allocation			Marks Distribution		Total Marks	Credits
		L	T	P	Internal	External		
IT-14401	Database Management Systems	3	1	-	40	60	100	4
CS-14402	Operating Systems	3	1	-	40	60	100	4
IT-14403	Data Communication &Computer Networks	3	1	-	40	60	100	4
IT-14404	Web Technologies	3	1	-	40	60	100	4
IT-14405	Computer Architecture & Microprocessors	3	1	-	40	60	100	4
IT-14406	Database Management Systems Laboratory	-	-	4	30	20	50	2
CS-14406	Operating Systems Lab	-	-	2	30	20	50	1
IT-14407	Data Communication &Computer Networks Laboratory	-	-	2	30	20	50	1
IT-14408	Web Technologies Laboratory	-	-	3	30	20	50	2
IT-14409	Computer Architecture & Microprocessors Laboratory	-	-	2	30	20	50	1

Dr. Kulwinder Singh Mann

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Dr. Amardeep Singh

GF-14401	General Fitness	-	-	-	100	-	100	1
Total		**15**	**5**	**13**	**450**	**400**	850	28
		Contact Hours= 33						

Fifth Semester

Course Code	Course Name	Load Allocation			Marks Distribution		Total Marks	Credits
		L	T	P	Internal	External		
IT-14501	Discrete Mathematics	3	1	-	40	60	100	4
IT-14502	Programming in Java	3	1	-	40	60	100	4
IT-14503	Theory of Computation	3	1	-	40	60	100	4
IT-14504	Human Computer Interaction	3	1	-	40	60	100	4
DEIT-14xxx	Elective-I	3	1	-	40	60	100	4
IT-14505	Programming in Java Laboratory	-	-	4	30	20	50	2
IT-14506	Human Computer Interaction Laboratory	-	-	3	30	20	50	2
DEIT-14xxx	Elective-I Laboratory	-	-	2	30	20	50	1

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TR-14501	Industrial Training-I*				60	40	100	2
Total		**15**	**5**	**09**	350	400	750	**27**
		Contact Hours= 29						

* 06 weeks Industrial Training-I will be after the end of 4th semester.

Sixth Semester

Course Code	Course Name	Load Allocation			Marks Distribution		Total Marks	Credits
		L	T	P	Internal	External		
IT-14601	Information Assurance and Security	3	1	-	40	60	100	4
IT-14602	Software Engineering and Testing	3	1	-	40	60	100	4
DEIT-14xxx	Elective-II	3	1	-	40	60	100	4
OEIT-14xxx	Open Elective	3	0	-	40	60	100	3
IT-14603	Probability and Statistics	3	1	-	40	60	100	4
IT-14604	Software Engineering and Testing Laboratory	-	-	4	30	20	50	2
DEIT-14xxx	Elective-II Laboratory	-	-	2	30	20	50	1
IT-14605	Information Assurance and Security	-	-	4	30	20	50	2

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	Laboratory							
PRIT-14601	Minor Project	-	-	1	60	40	50	1
GF-14601	General Fitness		-	-	100	-	100	1
Total		**15**	**4**	**11**	450	400	850	**26**
		Contact Hours= 30						

Seventh Semester /Eighth Semester

Course Code	Course Name	Load Allocation			Marks Distribution		Total Marks	Credits
		L	T	P	Internal	External		
IT-14701	Business Enterprise Application	3	1	-	40	60	100	4
IT-14702	ICT in Agriculture and Rural Development	3	1	-	40	60	100	4
DEIT-14xxx	Elective-III	3	1	-	40	60	100	4
IT-14703	Engineering Entrepreneurship	3	1	-	40	60	100	4
DEIT-14xxx	Elective-IV	3	1	-	40	60	100	4
PRIT-14701	Major Project	-	-	3	120	80	200	3
IT-14704	Business Enterprise	-	-	3	30	20	50	2

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	Application Laboratory							
DEIT-14xxx	Elective-III Laboratory	-	-	2	30	20	50	1
GF-14701	General Fitness		-	-	100	-	100	1
Total		15	05	08	480	420	900	27
		Contact Hours=28						

Seventh/Eighth Semester

Course Code	Course Name	Load Allocation			Marks Distribution		Total Marks	Credits
		L	T	P	Internal	External		
TRIT-14701	Industrial Training-II *	-	-	-	450	350	800	13
TRIT-14702	Industry Oriented Training	-	-	-	200		200	2
Total					450	550	1000	15

*In 4th year students will proceed for industrial training-II either in 7th or 8th semester as notified by the concerned department from time to time.

This training is bifurcated in to two components. First component TRIT-14701 (Industrial Training-II) is of 800 marks and second component TRIT-14702 (Industry Oriented Training) will be of 200 marks. This training will be in college and it will be in the form of FDP, Workshop, STP etc. and it is of 2 weeks. Students will be evaluated after completing this training out of 200 marks. At the end of training, the total marks obtained from both components will be used for final computation.

Elective-I

Dr. Kulwinder Singh Mann

Dr. Kiran Jyoti

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Dr. Amardeep Singh

DEIT-14508 Advanced Computer Networks

DEIT-14509 Advanced Computer Networks Laboratory

DEIT-14510 Business Intelligence and its Applications

DEIT-14511 Business Intelligence and its Applications Laboratory

DEIT-14512 Digital Image Processing

DEIT-14513 Digital Image Processing Laboratory

DEIT-14514 .NET Technologies

DEIT-14515 .NET Technologies Laboratory

DEIT-14516 Advanced Web Technologies

DEIT-14517 Advanced Web Technologies Laboratory

DEIT-14518 Industry/Need based subject

DEIT-14519 Industry/Need based subject Laboratory

Elective-II

DEIT-14607 Advanced Java

DEIT-14608 Advanced Java Laboratory

DEIT-14609 Big Data Analytics

DEIT-14610 Big Data Analytics Laboratory

DEIT-14611 E-Commerce

DEIT-14612 E-Commerce Laboratory

DEIT-14613 Embedded Systems in C

DEIT-14614 Embedded Systems in C Laboratory

DEIT-14615 Information Storage and Management

DEIT-14616 Information Storage and Management Laboratory

DEIT-14617 Industry/Need based subject

DEIT-14618 Industry/Need based subject Laboratory

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Elective-III

DEIT-14705 Agile Software Development

DEIT-14706 Agile Software Development Laboratory

DEIT-14707 Bioinformatics

DEIT-14708 Bioinformatics Laboratory

DEIT-14709 Simulation and Modeling

DEIT-14710 Simulation and Modeling Laboratory

DEIT-14711 Mobile Application Development

DEIT-14712 Mobile Application Development Laboratory

DEIT-14713 Cloud Infrastructure and Services

DEIT-14714 Cloud Infrastructure and Services Laboratory

DEIT-14715 Industry/Need based subject

DEIT-14716 Industry/Need based subject Laboratory

Elective-IV

DEIT-14717 Compiler Design

DEIT-14718 Computer Forensics

DEIT-14719 Optimization Techniques

DEIT-14720 Multimedia Systems

DEIT-14721 Corporate IT Management

DEIT-14722 Research Methodologies

Open Electives

OEIT-14601 IT enabled services

OEIT-14602 Management Information System

Approved

Agenda Item-2

2.1 Finalize the syllabus of 7th /8th Semester of B.Tech Information Technology for Batch

Dr. Kulwinder Singh Mann

Dr. Kiran Jyoti

Dr. Krishan Kumar Saluja

Dr. Akshay Girdhar

Dr. Savita Gupta

Er. Harpreet Khattar

Dr. Manpreet Singh

Dr. Amardeep Singh

2014 onwards.

After discussion and deliberation, necessary modifications have been incorporated in the proposed Syllabi of subjects of fifth semester of B.Tech Information Technology.

Committee approved the Syllabus and authorized Chairman BOS for further changes if required.

Approved

Agenda Item -3

3.1 Approval for panel of externals for B.Tech(IT) and M.Tech(IT) part-time.

Approved

Agenda Item -4

4.1 Discussion and Approval of Syllabus of FCPIT Theory and FCPIT Laboratory for 1st /2nd Semester for Batch 2017 onwards

After discussion and deliberation, necessary modifications have been incorporated in the proposed Syllabi of subjects of fifth semester of B.Tech Information Technology.

Committee approved the Syllabus and authorized Chairman BOS for further changes if required.

Approved

Meeting ended with the vote of thanks

HOD (IT) cum Chairman
Board of Studies

Distributions:

1. Director, GNDEC, Ludhiana for kind information
2. All Members of BOS(IT)
3. Dean Academics, GNDEC, Ludhiana
4. BOS File
5. Faculty of the department of IT

Dr. Kulwinder Singh Mann

Dr. Kiran Jyoti

Dr. Krishan Kumar Saluja

Dr. Akshay Girdhar

Dr. Savita Gupta

Er. Harpreet Khattar

Dr. Manpreet Singh

Dr. Amardeep Singh

Department of Mechanical Engineering

(131)

No. BT/ME/65/403

Date 12/5/2014

Minutes of Meeting

Board of Studies (Mechanical Engineering)

A meeting of BOS (Mech. Engg.) was held on 15.3.2014. Following members were present:

Dr. Sehijpal Singh
Dr. Paramjit Singh Bilga
Dr. Harwinder Singh
Dr. Jatinder Kapoor
Dr. Harmeet Singh
Dr. Gurinder Singh Brar
Er. Gursharan Singh, True Success Management Consultant Pvt. Ltd.,
Er. B.S. Sangha, Institute of Auto Parts, Ludhiana
Er. P.S. Gill, Ex-faculty, Ex-Design Engineer, General Motors, USA
Dr. Rupinder Singh, Dean Academic, GNDEC
Prof. J.S Grewal, I/C M.Tech and HOD (Prod)

Following members could not attend the meeting:
Dr. Inderdeep Singh (IIT Roorkee)
Dr. Ajay Batish (Thapar University)
Dr.H.S shan (Ex Faculty, IIT Roorkee)
Dr. Sandeep Grover, YMCA, Fridabad
Prof Deepinder Singh, GNDEC

The chairman welcomed all the members and apprised about the agenda items and other functions of BOS under the autonomous system granted by UGC to GNDEC. The members were also apprised about the Program Educational Objectives (PEOs) and Program Outcomes (POs) of B.Tech (Mech Engg) program.

The decisions taken are attached in Annexure A

Received.
12/5.

Annexure A

Agenda Item	Decisions Taken
PG Courses (M.Tech- Prod. and Industrial) 1.1 In the existing scheme, the subjects (Core as well as electives) are fixed semester wise. To make the system more flexible, it is proposed that subjects should not be fixed in a semester. However the number of subjects in a semester may be fixed. A student should pass all core and elective subjects in three semesters.	**Core and electives subjects shall be identified/segregated by the GNDEC faculty members. The decision shall be taken in next meeting.**
1.2 At present, No marks are being awarded for thesis work. It is proposed that in place of Approval/Rejection of the thesis, appropriate marks should be given, which should be equivalent to one semester.	**The matter shall be discussed in Next meeting**
1.3 It is proposed that lab should be removed from 1st and 2nd semesters. Only one lab should be included in third semester in place of the project.	**Approved**
1.4 The thesis work will start from 3rd semester onwards along with 2 theory subjects & seminars. Synopsis should be finalized in the 3rd semester however the final submission of thesis can be done during the 4th semester. The submission of thesis can only be permitted after the completion of all the previous requirements.	**Approved**
1.5 a Keeping in view the deficiencies in PG courses of Mechanical Engineering, like weak mathematics, lack of understanding of fundamental derivations of equations of equilibrium/motion/design of experiment, programming skills, numerical analysis etc following subjects are proposed to include in PG programs as core or elective and at least one should be offered as mandatory course. 1. Research Methodology 2. Numerical Methods 3. Finite Element Method 4. Design of Experiments	**Approved**
1.5 b. At least one subject should be offered which should be inter-departmental elective.	**Approved**

Course B.Tech (Mech)

Percentage of Credit hours of existing course is given below r discussion:-

S.No	Broad Area	Existing Percentage of credits	Range recommended as per AICT model curriculum
1.	Humanities and social sciences including management	7.5	5-10
2.	Basic Sciences (including electives) and Env. Sc. Including human values	12.5	15-20
3.	Engineering Sciences including materials, workshops, Drawing, Basics of electrical/electronics/ mechanical/computer etc.	14.7	15-20
4.	Professional courses relevant to the chosen specialization/branch	44.6	30-40
5.	Professional subjects-electives relevant to chosen specialization	3.57	10-15
6.	Open Elective from other technical and emerging subject areas	1.7	5-10
7	Project work/Seminar and /or internship in industry	18.3	10-15

The matter was discussed at length. Following points were highlighted.

1. **The experts linked with industry apprised the board that following sectors are going to provide maximum jobs to the graduates of Mech Engg:**
   a. **Automobiles**
   b. **Engg Goods/Consumer goods**
   c. **Process Industries**
   d. **Steel, cement, paper and petroleum**
2. **Manufacturing/Production and Services sector are going to become equally important sectors as regards to job opportunities**
3. **Engineering fundamentals are lacking in the graduates.**
4. **Less than 10% graduates of Mech. Engg. are going to core Engg jobs.**
5. **30-40% graduates are absorbed in software development jobs**
6. **Keeping in view the above situation, it was suggested that following courses may be added to the existing curriculum keeping in view the deficiency of credits as per given in the table (S.No 5 and 6).**
   a. **Product Design and Development**
   b. **Maintenance Engg**
   c. **Quality Control and Engg**
   d. **Automation**
   e. **MoUs need to be signed for making demonstration of latest technology being used in Industry as the Industries have the latest technology which may not be cost effective to procure in the Institution. The time slots need to be given in curriculum to cover this part.**
7. **Contents of communication skills and interview skills need to be enhanced**
8. **It was suggested to go through the findings of a latest survey on Employability Skill Gap Analysis**

	conducted by TCS while revising the curriculum
2 Industrial Training: Discussion on the present system and any suggestions for further improvement	1. Effective monitoring need to be done. 2. Industry Institute Interaction (III) need to be enhanced 3. Best Project award may be introduced to motivate the students for taking industrial problem based projects 4. Industrial training to the teachers is needed. One way may be to depute the teachers for some time where the students are taking their training 5. Effective monitoring system should be in place
3.1 The question papers of end semester examination should be internal, but should be checked (for correct Format and standard) by a committee consisting of 05 members (03 external + HOD+ 01 internal).	1. The present system should be continued to maintain secrecy 2. BOS members were of the view that three experts may not be sufficient to judge the quality of question papers. However the format may be checked at COE level itself.
3.2 The revised scheme and syllabus should be completed before 15th June, 2014 and final approval of the same should be taken by the BOS before 30th June, 2014.	Agreed upon

Dr. Sehijpal Singh

Chairman

BOS (GNDEC)

(Mech Engg)

Minutes of Meeting

Meeting of Board of Studies (Mechanical Engineering) (15.3.14)

Sr.No.	Name of member	Signature
1.	Dr. Sehijpal Singh, GNDEC	
2.	Dr. Paramjit Singh Bilga, GNDEC	15/3/2014
3.	Dr. Harwinder Singh, GNDEC	
4.	Dr. Jatinder Kapoor, GNDEC	
5.	Prof. Deepinder Singh, GNDEC	
6.	Dr. Harmeet Singh, GNDEC	
7.	Dr. Gurinder Singh Brar, GNDEC	
8.	Dr. Rupinder Singh, GNDEC	
9.	Prof. Jasmaninder Singh Grewal, GNDEC	JSGrewal
10.	Er. Gursharan Singh, True Success Management Consultant Pvt. Ltd.	
11.	Er. B.S. Sangha, Institute of Auto Parts, Ludhiana	
12.	Er. P.S. Gill, Ex- faculty, GNDEC, Ex-Design Engineer, General Motors, USA	

3rd Semester B. Tech. (Mech.)								
Code	**Title of the course**	**L**	**T**	**P**	**Maximum Marks**		**Total Marks**	**Credits**
					Internal	**External**		
ME 14301	Strength of Materials- I	3	1	-	40	60	**100**	4
ME 14302	Theory of Machines-I	3	1	-	40	60	**100**	4
ME 14303	Machine Drawing	2	-	4	40	60	**100**	4
ME 14304	Applied Thermodynamics -I	3	1	-	40	60	**100**	4
ME 14305	Manufacturing Processes – I	4	-	-	40	60	**100**	4
ME 14306	Engg. Materials and Metallurgy	4	-	-	40	60	**100**	4
ME 14307	Manufacturing Processes and Metallurgy Lab	-	-	2	30	20	**50**	1
ME 14308	Strength of Materials Lab.	-	-	2	30	20	**50**	1
ME 14309	Applied Thermodynamics Lab	-	-	2	30	20	**50**	1
	Advisory meeting	-	-	1	-	-	-	-
TR 14301	Workshop Training*	-	-	-	60	40	**100**	2
	Total	**19**	**3**	**11**	**390**	**460**	**850**	**29**

Total Contact Hours per week = 33

***** Students will have to undergo Workshop Training in the Institution at the end of 2nd semester for Four (04) weeks duration.

4th Semester B. Tech. (Mech.)								
Code	**Title of the Course**	**L**	**T**	**P**	**Maximum Marks**		**Total Marks**	**Credits**
					Internal	**External**		
ME 14401	Strength of Materials – II	3	1	-	40	60	**100**	4
ME 14402	Theory of Machines – II	3	1	-	40	60	**100**	4
ME 14403	Fluid Mechanics	3	1	-	40	60	**100**	4
ME 14404	Applied Thermodynamics – II	3	1	-	40	60	**100**	4
ME 14405	Manufacturing Processes-II	4	-	-	40	60	**100**	4
ME 14406	Fluid Mechanics Lab	-	-	2	30	20	**50**	1
ME 14407	Manufacturing Processes Lab	-	-	2	30	20	**50**	1
ME 14408	Theory of Machines Lab	-	-	2	30	20	**50**	1
	Advisory Meeting	-	-	1	-	-	**-**	
GF 14401	General Fitness	-	-	-	100	-	**100**	1
	Total	**16**	**4**	**7**	**390**	**360**	**750**	**24**

Total Contact Hours per week = 27

Note:

During the semester, each student has to visit the selected local industry five times in such a way that he/she has to make at least one visit in that industry each month.

He/She has to maintain a record of each visit in a diary. The evaluation of these Industrial visits will be done by a committee consisting of faculty members at the end of the semester out of 20 marks. These marks will become part of internal marks for the Industrial Training/ Institutional Training given in 5th semester study scheme.

5th Semester B. Tech (Mechanical)								
Code	**Title of the course**	**L**	**T**	**P**	**Maximum Marks**		**Total Marks**	**Credits**
					Internal	**External**		
ME 14500	Mathematics-III	3	1	-	40	60	**100**	4
ME 14501	Design of Machine Elements – I	3	1	-	40	60	**100**	4
ME 14502	Computer Aided Design and Manufacturing	4	-	-	40	60	**100**	4
ME 14503	Mechanical Measurement and Metrology	4	-	-	40	60	**100**	4
ME 14504	Industrial Automation and Robotics	4	-	-	40	60	**100**	4
ME 14505	Computer Aided Design and Manufacturing Lab	-	-	2	30	20	**50**	1
ME 14506	Mechanical Measurement and Metrology Lab.	-	-	2	30	20	**50**	1
ME 14507	Industrial Automation and Robotics Lab.	-	-	2	30	20	**50**	1
DEME 14-	Department Elective-I (Specialisation Group)	4	-	-	40	60	**100**	4
	Advisory meeting	-	-	1	-	-	-	
TR 14501	Industrial/Institutional Training*	-	-	-	60	40	**100**	2
	Total	**23**	**2**	**7**	**390**	**460**	**850**	29

Total Contact Hours = 31

i. *The marks of Industrial Training or Institutional Training undergone at the end of 4th Semester (at IITs/NITs/GNDEC only) will be included here.

ii. * Evaluation scheme of industrial training shall be as under:

Internal: Out of 60 marks, 20 marks will be given on the basis of industrial visits made by the student during 4th semester. The students have to visit the selected local industry five times in the semester in such a way that in each month he/she has to make at least one visit in the same industry. He has to maintain a diary for recording the report of each visit. 40 marks shall be given on the basis of evaluation as per the rubrics.

External: External examiner should be essentially from industry and will evaluate the students on the basis of oral viva for 40 marks.

6th Semester B. Tech (Mechanical)								
Code	**Title of the course**	**L**	**T**	**P**	**Maximum Marks**		**Total Marks**	**Credits**
					Internal	**External**		
ME 14601	Design of Machine Elements –II	4	-	-	40	60	**100**	4
ME 14602	Heat Transfer	3	1	-	40	60	**100**	4
ME 14603	Hydraulic Machines	3	1	-	40	60	**100**	4
ME 14604	Heat Transfer Lab.	-	-	2	30	20	**50**	1
ME 14605	Hydraulic Machines Lab	-	-	2	30	20	**50**	1
PRME 14601	Minor Project**	-	-	1	60	40	**100**	1
ME 14607	Design of Machine Elements –II Practice	-	-	2	30	20	**50**	2
DEME 1461-	Department Elective-II (Materials Group)	4	-	-	40	60	**100**	4
OEME 1460-	Open Elective*	3	-	-	40	60	**100**	3
	Advisory meeting	-	-	1	-	-	-	
GF 14601	General Fitness	-	-	-	100	-	**100**	1
	Total	**17**	**2**	8	450	400	**850**	25

Total Contact Hours = 27

*The open elective will be taken by a student offered by other departments, and not by his/her own department.

****The project work will be carried out in parts as minor project in 6th semester and major project in 7/8th semester. The literature survey, problem formulation, assessment for viability of the project, objectives and methodology for the project shall be decided in 6th semester. The same project problem is to be extended in the major project in 7th/8th semester. The minor project may be carried out by a group of students (2 to 4). The evaluation of the minor project will be held as per the rubrics. For writing the report the students have to follow the concerned guidelines.

7th /8th Semester B. Tech. (Mechanical) *		Industrial Training (One Semester)			
Code	**Title of the course**	**Maximum Marks**		**Total Marks**	**Credits**
		Internal	**External**		
TRME 14702	Orientation of Industrial Training	200	-	**200**	**2**
TRME 14701	Industrial Training	450	350	**800**	**13**

Total Contact Hours per working day = 06 (minimum)

***Duration for Orientation of Industrial training is 02 weeks.**

*** The students will undergo industry training in industries/organizations of national repute for one semester (minimum 12 weeks).**

7th /8th Semester B. Tech. (Mechanical)								
Code	**Title of the course**	**L**	**T**	**P**	**Maximum Marks**		**Total Marks**	**Credits**
					Internal	**External**		
ME 14801	Refrigeration & Air Conditioning	3	1	-	40	60	**100**	4
ME 14802	Mechanical Vibrations	3	1		40	60	**100**	4
ME 14803	Automobile Engg.	4	-	-	40	60	**100**	4
ME 14804	Refrigeration & Air Conditioning Lab	-	-	2	30	20	**50**	1
ME 14805	Mechanical Vibration Lab	-	-	2	30	20	**50**	1
PRME 14701	Major Project*	-	-	3	120	80	**200**	3
ME 14806	Seminar	-	-	2	50	-	**50**	2
ME 14807	Automobile Engineering Lab.	-	-	2	30	20	**50**	1
DEME 14--	Department Elective-III (Specialisation Group)	4	-	-	40	60	**100**	4
DEME 147--	Department Elective-IV (General Group)	4	-		40	60	**100**	4
	Advisory meeting	-	-	1	-	-	-	-
GF 14701	General Fitness	-	-	-	100	-	**100**	1
	Total	**18**	**2**	**12**	**560**	**440**	**1000**	29

Total Contact Hours = 32

***** The problem of the minor project "formulated" during 6th Semester is to extended and executed in major project by the same group of students. The design/construction/fabrication/computer modeling/experimentation etc. is to be carried out. The results and analysis followed by discussion regarding suitability /non suitability of the project or any positive gain in the project made with conclusions and recommendations for future extension of the project must be covered. The evaluation of major project will be done as per the rubrics. For writing the report the students have to follow the institutional guidelines.

DEPARTMENT ELECTIVES

I. SPECIALIZATION GROUP

(1)THERMAL

DEME 14101	I.C Engines
DEME 14102	Cryogenic Technologies
DEME 14103	Non Conventional Energy resources
DEME 14104	Energy Conservation and Management
DEME 14105	Fluid Mechanics -II
DEME 14106	Solar Energy
DEME 14107	Heat Exchanger Design
DEME 14108	Power Plant Engg.
DEME 14109	Gas Dynamics

(2)MANUFACTURING

DEME 14201	Non-Traditional Machining
DEME 14202	Modern Welding and Forming Processes
DEME 14203	Computer integrated Manufacturing
DEME 14204	Computer Aided Process planning
DEME 14205	Machining Science
DEME 14206	Rapid Prototyping
DEME 14207	Modern Casting Processes
DEME 14208	Micromachining Technologies
DEME 14209	Manufacturing Systems

(3)DESIGN

DEME 14301	Design for X
DEME 14302	Product Design and Development
DEME 14303	Machine Tool Design
DEME 14304	Tool Design
DEME 14305	Experimental Stress Analysis
DEME 14306	Industrial Tribology
DEME 14307	Theory of Plasticity
DEME 14308	Mechatronics
DEME 14309	Finite Element Method

II. MATERIALS GROUP

DEME 14611	Non -Destructive Testing
DEME 14612	Heat Treatment Processes
DEME 14613	Plastic Technologies
DEME 14614	Characterization of Materials
DEME 14615	Degradation of Materials
DEME 14616	Composite Materials
DEME 14617	Surface Science

III. GENERAL GROUP*

DEME 14711	Modeling and Simulation
DEME 14712	Optimization Techniques
DEME 14713	Operations Management
DEME 14714	Management Information System
DEME 14715	Entrepreneurship
DEME 14716	Industrial Engineering and Management
DEME 14717	Maintenance and Reliability Engg.
DEME 14718	Industrial Safety and Environment
DEME 14719	Disaster Management
DEME 14720	Material Management

OPEN ELECTIVES

OEME 14601	Total Quality Management
OEME 14602	Industrial Engg.

Note:

1. A Department Elective subject may normally be offered only if at least 10 students of the class have opted for it.
2. The student shall select both the specialized elective courses from the same sub- group out of the three specializations i.e Thermal, Manufacturing and Design.
3. Options shall be taken from the students about the selection of courses from Material Group and General Group. Depending upon the availability of suitable teacher, one course (per Group) shall be offered in the respective semester.

Department of Production Engineering

Guru Nanak Dev Engineering College,Ludhiana

Department of Production Engineering

No. PE:152 (i)

Dated:-29/3/14

MINUTES OF MEETING

Minutes of meeting of First Board of Studies held on 22-03-2014 at 10:30 AM in committee room:

The following persons were present:

1. Dr. O.P Singh
2. Dr. Sanjeev kumar
3. Dr. R.S Bhatti
4. Prof. J.S Ratol
5. Er. Lalit Sharma
6. Prof J.S Grewal
7. Dr. Rupinder Singh
8. Dr.J.N Jha
9. Dr. Jatinder Kapoor
10. Dr. Harwinder Singh
11. Prof. B.S Gill
12. Prof. Jagdeep Singh
13. Prof. Jaswinder Singh
14. Prof. Parminder Singh
15. Prof. Iqwinderpreet Singh

The meeting started with welcome note & already circulated agenda was set in notion. Following decisions were taken unanimously:-

Proceedings

1.1 Percentage of credit hours of existing course is given below for discussion:-

S.No.	Broad Area	Existing Percentage of credits	Range recommended as per AICTE model curriculum
1.	Humanities and Social Sciences (HS) including Management	9.1	5-10
2.	Basic sciences (including electives) and Env. Sc. Including human values	10.2	15-20
3.	Engineering sciences including materials, workshops, drawing, basics of electrical/electronics/mechanical/computer etc.	26.5	15-20
4.	Professional courses relevant to the chosen specialization/branch	39.3	30-40
5.	Professional subjects-electives relevant to chosen specialization	4	10-15
6.	Open elective from other technical and emerging subject areas	2	5-10
7.	Project work/seminar and/or internship in Industry	11.7	10-15

Discussion was made on this issue. The matter was approved in principle.

1.2 Industrial Training : Discussion on the Present system and suggestions for further improvement

Discussion was made on this issue. Members were interested for bifurcation of training into 2-3 parts for its effectiveness. The matter was approved in principle.

1.3 Credit based System to be implemented from 2015 Admission Batch

Approved

1.4 Core/ Elective Subjects has to be reviewed must be covering the Gate Syllabus.

Discussion was made on this issue. The matter was approved in principle

1.5 The question papers of End Semester examinations should be 100% internal but should be checked by a committee consisting of two external members, two internal members and HOD for proper format and standard.

Discussion was made on this issue. The matter was approved in principle.

1.6 The revised Scheme and syllabus should be completed before 15th june,2014 and final approval of the same should be taken by BOS before 30th june,2014 .

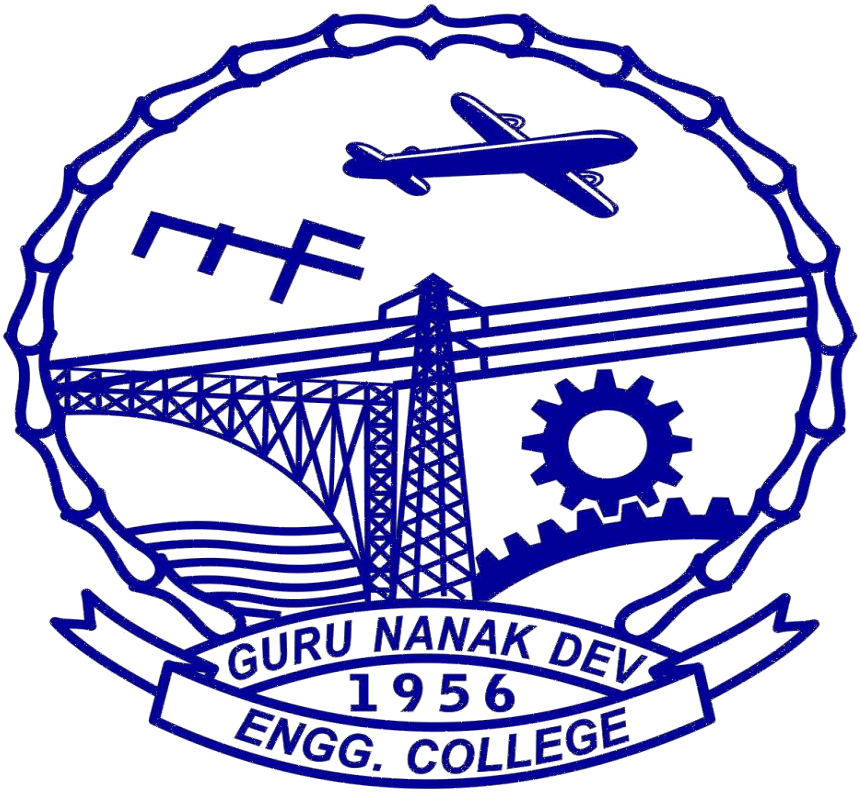
Discussion was made on this issue. The matter was approved in principle

The meeting ended with vote of thanks.

HOD (PE) cum Chairman
Board of Studies

Distribution:
1. Director, GNDEC, Ludhiana for kind information
2. All members of BOS (PE)
3. Dean Academics, GNDEC, Ludhiana
4. BOS file

Study Scheme
&
Syllabus
Of
B.Tech Production Engineering
2014 onwards



Guru Nanak Dev Engineering College

(An Autonomous College U/S [2(f) and 12 (B) of UGC Act 1956)

NBA Accredited Programmes under Tier-I (Washington Accord), 'A' Grade NAAC Accredited, TCS AccreditedAICTE Approved, Punjab Govt. Aided Status, Affiliated to I.K. Gujral Punjab Tech. University, ISO : 9001:2008 Certified

DEPARTMENT VISION

The Production Engineering Department strives to establish an outstanding Centre of regional and national reputation for providing a quality engineering education to the students from the rural area of Punjab, excellent research and services to the professional and the community; to produce quality production engineers; and to employ principles of continual quality improvement to enhance its program and faculty.

DEPARTMENT MISSION

a. Quality education to be provided to the students along with enhancement of their skills to make them globally competitive Production Engineers.

b. Development of linkages with top R&D organizations and educational institutions in India and abroad for excellence in teaching, research and consultancy practices.

c. Strengthening Continuing Education with special focus on training and skills up gradation of teaching and technical manpower of the region.

d. Enhancement of Industrial Consultancy and Testing.

e. Enhancement of research activities through AICTE/DST/UGC sponsored research projects.

f. Dedicated efforts to be made for enhancing employability of students.

g. Introduction of new UG and PG programs in emerging fields of engineering.

GRADUATE ATTRIBUTES

1. Engineering knowledge
2. Problem analysis
3. Design/development of solutions
4. Investigations of complex problems
5. Modern tool usage
6. Engineer and society
7. Environment and sustainability
8. Ethics
9. Individual and team work
10. Communication
11. Life-long learning
12. Project management and Finance

PROGRAM EDUCATION OBJECTIVES (PEOs)

1. To prepare students for successful careers as per the need of Indian and multinational industries/companies.

2. To develop the strong basic technical as well as non-technical (knowledge of computer skills of solving the problems) skills in the students.

3. To develop the ability among students for taking research/teaching assignments.

PROGRAM OUTCOMES (POs)

After completion of B. Tech. in Production Engineering:

a. An ability to apply knowledge of mathematics, science, and engineering.

b. An ability to design and conduct experiments, as well as to analyze and interpret data.

c. An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.

d. An ability to function on multi-disciplinary teams.

e. An ability to identify, formulates, and solves engineering problems.

f. An understanding of professional and ethical responsibility.

g. An ability to communicate effectively.

h. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.

i. Recognition of the need for, and an ability to engage in life-long learning.

j. A knowledge of contemporary issues.

k. An ability to use the techniques, skills, and modern engineering tools necessary or engineering practice.

l. Graduates are expected to gain the technical, managerial and working relationship qualities for the industry/ organization and use this knowledge for the higher studies/teaching/research works

SYLLABUS STRUCTURE AND END SEMESTER EXAMINATIONS QUESTION PAPER PATTERN

Syllabus Structure

1. In most of courses, there are topics under the heading **Topics for Self Learning (TSL).** These are the topics to be learnt by the student on their own under the guidance of the course instructor/s. Course instructor/s will inform the students about the depth to which TSL components are to be studied. ***The evaluation of TSL will be done in Assignments ONLY.***

Pattern of End Semester Examinations Question Paper

a) Question paper will consist of total Nine (09) questions distributed among three parts: Part A, Part B and Part C.

b) Part A will consist of One (01) question having Ten (10) parts, each of Two (02) marks. Five (05) questions will be asked from each section of the syllabus i.e. Section A and Section B, covering maximum units of respective section. Candidate has to attempt all parts of this question.

c) Part B will consist of Five (05) questions, each of Five (05) marks. Minimum Two (02) questions have to be asked from each section of syllabus i.e. Section A and Section B. Candidate has to attempt any Four (04) questions out of these Five questions.

d) Part C will consist of Three (03) questions, each of Ten (10) marks. Out of these Three questions, Two (02) questions have to be asked taking One (01) from each section of syllabus i.e. Section A and Section B and **the third question has to be from that section of syllabus from which two questions have been asked in Part B of question paper**. Candidate has to attempt any Two (02) questions out of these three questions.

e) The above points (a) to (d) will not be applicable for courses related to Machine Design/ Drawing. For pattern of question paper of such courses reference may be made to the note given in the syllabus of these courses.

Syllabus for B.Tech Production Engineering

3rd SEMESTER

Course Code	Subject	L	T	P	Int	Ext	Total	Credits
PE - 14301	Strength of Materials	3	1	-	40	60	100	4
PE - 14302	Machine Drawing	2	-	6	40	60	100	5
PE - 14303	Thermal Engineering	3	1	-	40	60	100	4
PE - 14304	Theory of Machines	3	1	-	40	60	100	4
PE - 14305	Manufacturing Processes-I	4	-	-	40	60	100	4
PE - 14306	Strength of Material Lab.	-	-	2	30	20	50	1
PE - 14307	Thermal Engineering Lab.	-	-	2	30	20	50	1
PE - 14308	Theory of MachinesLab.	-	-	2	30	20	50	1
PE - 14309	Manufacturing Processes-I Lab.	-	-	2	30	20	50	1
	Advisory Meeting	-	1	-	-	-	-	-
TR - 14301	*Workshop Training	-	-	-	60	40	100	2
	Total	**15**	**4**	**14**	**380**	**420**	**800**	**27**

Total Contact hours = 33

*Workshop Training will be imparted in the institution at the end of 2nd semester during summer vocation of 4 weeks (Six hours per day and six days a week).

Syllabus for B.Tech Production Engineering

4thSEMESTER

Course Code	Subject	L	T	P	Int	Ext	Total	Credits
PE - 14401	Design of Machine Elements	3	1	-	40	60	100	4
PE - 14402	Fluid Mechanics and Fluid Machinery	3	1	-	40	60	100	4
PE - 14403	Manufacturing Processes - II	4	-	-	40	60	100	4
PE - 14404	Engineering Materials and Metallurgy	4	-	-	40	60	100	4
PE - 14405	Industrial Organization and Management	4	-	-	40	60	100	4
PE - 14406	Design of Machine Elements Lab.	-	-	2	30	20	50	1
PE - 14407	Fluid Mechanics and Fluid Machinery Lab.	-	-	2	30	20	50	1
PE - 14408	Manufacturing Processes –II Lab.	-	-	2	30	20	50	1
PE - 14409	Engineering Materials and Metallurgy Lab.	-	-	2	30	20	50	1
GF-14401	General Fitness	-	1	-	100	-	100	1
Total		**18**	**3**	**8**	**420**	**380**	**800**	**25**

Total Contact hours = 29

Note:-There shall be Industrial training of 04 weeks duration in reputed industries at the end of 4th Sem. The marks for this will be included in the 5th Sem.

Syllabus for B.Tech Production Engineering

5th SEMESTER

Course Code	Subject	L	T	P	Int	Ext	Total	Credits
PE - 14501	Operation Research	3	1	-	40	60	100	4
PE - 14502	Machining Science	3	1	-	40	60	100	4
PE - 14503	Engineering Metrology	4	-	-	40	60	100	4
PE - 14504	Metal Forming	4	-	-	40	60	100	4
DEPE-149XX	(Dept. Elective-I)	4	-	-	40	60	100	4
PE - 14505	Machining Science Lab.	-	-	2	30	20	50	1
PE - 14506	Engineering Metrology Lab.	-	-	2	30	20	50	1
PE - 14507	Metal Forming Lab	-	-	2	30	20	50	1
TR - 14501	**Industrial training	-	-	-	60	40	100	2
	Advisory Meeting	-	1	-	-	-	-	-
Total		**18**	**3**	**6**	**350**	**400**	**750**	**25**

Total Contact hours = 27

****** Industrial training of 04 weeks will be imparted in the reputed industries at the end of 4th semester.

Syllabus for B.Tech Production Engineering

6th SEMESTER

Course Code	Subject	L	T	P	Int	Ext	Total	Credits
PE - 14601	Industrial Engineering	4	-	-	40	60	100	4
PE - 14602	Product Design & development	3	1	-	40	60	100	4
PE - 14603	Tool & cutter Design	3	1	-	40	60	100	4
PE - 14604	Non-Traditional machining Methods	4	-	-	40	60	100	4
OEPE-140XX	Open Elective	3	-	-	40	60	100	3
DEPE-149XX	Dept. Elective-II	4	-	-	40	60	100	4
PE - 14605	Industrial Engineering Lab.	-	-	2	30	20	50	1
PE - 14606	Product Design & development Lab.	-	-	2	30	20	50	1
PE - 14607	Tool & cutter Design Lab.	-	-	2	30	20	50	1
PRPE - 14601	Minor project*	-	-	1	60	40	100	1
GF - 14601	General fitness	-	1	-	100	-	100	1
Total		**21**	**3**	**7**	**490**	**460**	**950**	**28**

Total Contact hours = 31

***Note:-**Only one project will be carried out in parts as **Minor Project** in 6th Semester& a **MajorProject** in 7th/8th Semester. LiteratureSurvey, Problem formulation, Assessment for viability of the project, objectives & methodology for the project shall be decided & formulated as minor project in 6th Semester**.**

Syllabus for B.Tech Production Engineering

7th SEMESTER

Course Code	Subject	L	T	P	Int	Ext	Total	Credits
PE - 14701	Computer Integrated Manufacturing	4	-	-	40	60	100	4
PE - 14702	Machine Tool Design	3	1	-	40	60	100	4
PE - 14703	Industrial Automation & Robotics	4	-	-	40	60	100	4
PE - 14704	Industrial Tribology	4	-	-	40	60	100	4
DEPE-149XX	Departmental Elective - III	4	-	-	40	60	100	4
DEPE-149XX	Departmental Elective - IV	4	-	-	40	60	100	4
PE - 14705	Industrial Automation & Robotics Lab.	-	-	2	30	20	50	1
PE - 14706	Computer Integrated Manufacturing Lab.	-	-	2	30	20	50	1
PE - 14707	Machine Tool Design Lab.	-	-	2	30	20	50	1
PE - 14708	Industrial Tribology Lab.	-	-	2	30	20	50	1
PE - 14709	Major project*	-	-	3	100	50	150	3
GF - 14701	General Fitness	-	1	-	100	-	100	1
Total		**23**	**2**	**11**	**560**	**490**	**1050**	**32**

Total Contact hours = 36

***Note:-**In the Major Project, the Problem formulated in Minor Project during 6th Semester is to be executed. The theory, design, construction/fabrication, computer modeling, experimentation on the fabricated models, results, analysis followed by discussions regarding suitability/non suitability of the project or any positive gain in the project made with conclusions & recommendation for future extension of the project must be covered.

Syllabus for B.Tech Production Engineering

8th SEMESTER

Course Code	Course Title	Internal	External	Total	Credit
TR - 14701	Industrial Training-II	450	350	800	13
TR - 14702	Industry Oriented Training (02 week)	200	-	200	2
Total		**650**	**350**	**1000**	**15**

List of Department Elective Subjects:

Group -I		
S.No.	**Code**	**Name of Subject**
1.	**DEPE-14901**	Industrial Finishing Technology
2.	**DEPE-14902**	Welding technology
3.	**DEPE-14903**	Plastic & ceramic technology
4.	**DEPE-14904**	Non- Destructive Testing
5.	**DEPE-14905**	Material Handling & Plant Layout
6.	**DEPE-14906**	Supply Chain Management
7.	**DEPE-14907**	Applied Elasticity and Plasticity
8.	**DEPE-14908**	Productivity Management
Group -II		
9.	**DEPE-14909**	Marketing & Financial Management
10.	**DEPE-14910**	Modeling & Simulation
11.	**DEPE-14911**	Estimating & Costing
12.	**DEPE-14912**	Value Engineering
13.	**DEPE-14913**	Automobile Engineering
14.	**DEPE-14914**	Production Planning & Control
15.	**DEPE-14915**	Jigs, Fixtures& Tool Design
16.	**DEPE-14916**	Industrial Safety & Environment
17.	**DEPE-14917**	Mechatronics
Group -III		
18.	**DEPE-14918**	Maintenance & Reliability Engineering
19.	**DEPE-14919**	Quality Assurance and Reliability
20.	**DEPE-14920**	Total Quality Management
21.	**DEPE-14921**	Material Management
22.	**DEPE-14922**	Project Management
23.	**DEPE-14923**	Investment Planning
24.	**DEPE-14924**	Entrepreneurship
25.	**DEPE-14925**	Inspection and Quality Control
26.	**DEPE-14926**	CAD & Computer Graphics

List of Open Elective Subjects (To be offered in 6th semester):

Sr. No.	Code	Name Of Subject
1.	**OEPE-14601**	**Operation Management**
2.	**OEPE-14602**	**Operation Research**

Note:

1. **Minimum 25 students and maximum 30 students are required to offer a Department Elective subject**

Evidence of Positive Role of one semester Industrial Training in Placements

Data of Students placed in the companies in which they undertook one semester Industrial Training

List of students who got placed in the company where they underwent Industrial Training

S.No.	College Roll No.	University Roll No.	Candidate Name	Name of Company	Package	Stipend
1	115025	1144396	Kartik Nagpal	Sievelogic Software Technologies Private Limited, Pune	18.0 lacs	INR. 90,000/- per month
2	115316	1144370	Harpreet Kaur	HCL -CDC	1.8 lacs	
3	125346	1243698	Puneet Walia	INFOSYS Limited	3.28 Lacs	
4	125354	1243717	Saevrosedeep Kaur	INFOSYS Limited	3.28 Lacs	
5	125356	1243722	Sandeep Singh	INFOSYS Limited	3.28 Lacs	
6	125357	1243725	Sarang Grover	INFOSYS Limited	3.28 Lacs	
7	125362	1243744	Vibha Jain	INFOSYS Limited	3.28 Lacs	
8	126103	1244011	Richa Singal	INFOSYS Limited	3.28 Lacs	
9	126134	1312009	Ravneet Singh	INFOSYS Limited	3.28 Lacs	
10	126139	1241874	Ashima	INFOSYS Limited	3.28 Lacs	
11	121313	1244059	Chandan Ahuja	Asahi India Glass Ltd.	3.0 lacs	
12	124038	1244255	Roopak Gupta	Asahi India Glass Ltd.	3.0 Lacs	
13	123088	1243929	Shubham Devgan	TCS	3.33 Lacs	
14	135061	1311111	Priyanka Goel	INFOSYS Limited	3.28 LPA	
15	135067	1311125	Rishav Goyal	INFOSYS Limited	3.28 LPA	
16	135095	1311112	Puneet Jain	INFOSYS Limited	3.28 LPA	
17	135379	1410957	Anupriya	INFOSYS Limited	3.28 LPA	
18	136083	1311432	Shagun Gupta	INFOSYS Limited	3.28 LPA	
19	136115	1411328	Kanav Jain	INFOSYS Limited	3.28 LPA	
20	136139	1308650	Aarushi Negi	INFOSYS Limited	3.28 LPA	
21	136141	1308669	Himanshi Kaushal	INFOSYS Limited	3.28 LPA	
22	140037	1410614	Gurpreet Kumari	Thermax Limited	4.0 LPA	
23	145088	1410944	Tarunpreet Sharma	INFOSYS Limited	3.28 LPA	
24	145057	1410895	Palak Singla	INFOSYS Limited	3.28 LPA	
25	145344	1410897	Pavneet Kaur	INFOSYS Limited	3.28 LPA	
26	145074	1410923	Shaminder Singh Sekhon	INFOSYS Limited	3.28 LPA	
27	145075	1410926	Sharanmeet Singh	INFOSYS Limited	3.28 LPA	
28	145077	1410928	Shriya Gupta	INFOSYS Limited	3.28 LPA	
29	145358	1410936	Sukhprit Kaur	INFOSYS Limited	3.28 LPA	

30	145084	1410938	Supreet Singh Soni	INFOSYS Limited	3.28 LPA	
31	145360	1410940	Tamanpreet Singh	INFOSYS Limited	3.28 LPA	
32	145086	1410942	Tarandeep Singh	INFOSYS Limited	3.28 LPA	
33	145091	1410949	Vishal Kumar	INFOSYS Limited	3.28 LPA	
34	145093	1410952	Yatin Burhmi	INFOSYS Limited	3.28 LPA	
35	145108	1411187	Ravneet Kaur	INFOSYS Limited	3.28 LPA	
36	145112	1411191	Sachin Nagpal	INFOSYS Limited	3.28 LPA	
37	146131	1508431	Lovepreet Singh	INFOSYS Limited	3.28 LPA	
38	146078	1411307	Sheenu Sharma	INFOSYS Limited	3.28 LPA	
39	146082	1411311	Simran Gujral	INFOSYS Limited	3.28 LPA	
40	141085	1411468	Nitesh Kumar	Arora Iron & Steel Rolling Mills (P) Ltd.	1.80 LPA	
41	141108	1411505	Shivam Atre	Cell Propulsion, Bangalore	4.80 CTC	
42	157367	1541449	Awadhesh Kumar	INFOSYS Limited	3.6	INR. 10,000/- Per Month
43	155013	1507561	Bipinjot Kaur Hara	INFOSYS Limited	3.6	INR. 10,000/- Per Month
44	155103	1507814	Dashmeet Kaur	INFOSYS Limited	3.6	INR. 10,000/- Per Month
45	155105	1507932	Jaspreet Singh	INFOSYS Limited	3.6	INR. 10,000/- Per Month
46	155062	1507641	Prabhjot Singh	INFOSYS Limited	3.6	INR. 10,000/- Per Month
47	155339	1507643	Prajwal Pant	INFOSYS Limited	3.6	INR. 10,000/- Per Month
48	155069	1507651	Ramandeep Kaur Pabla	INFOSYS Limited	3.6	INR. 10,000/- Per Month
49	155071	1507657	Rohit	INFOSYS Limited	3.6	INR. 10,000/- Per Month
50	155075	1507661	Sahil Singh	INFOSYS Limited	3.6	INR. 10,000/- Per Month
51	155078	1507664	Sanket Kumar Srivastava	INFOSYS Limited	3.6	INR. 10,000/- Per Month
52	155080	1507666	Sarabjot Singh Arora	INFOSYS Limited	3.6	INR. 10,000/- Per Month
53	155081	1507667	Satprit Kaur	INFOSYS Limited	3.6	INR. 10,000/- Per Month
54	155348	1507668	Sehaj Grover	INFOSYS Limited	3.6	INR. 10,000/- Per Month
55	155350	1507670	Shivam Gupta	INFOSYS Limited	3.6	INR. 10,000/- Per Month
56	155107	1507511	Shivam Goyal	INFOSYS Limited	3.6	INR. 10,000/- Per Month
57	155076	1507676	Simran Kaur	INFOSYS Limited	3.6	INR. 10,000/- Per Month
58	155355	1507678	Simran Sohanpal	INFOSYS Limited	3.6	INR. 10,000/- Per Month
59	155087	1507683	Swati Wasal	INFOSYS Limited	3.6	INR. 10,000/- Per Month
60	155360	1507686	Tanvi Garg	INFOSYS Limited	3.6	INR. 10,000/- Per Month
61	155090	1507687	Tarlochan Singh	INFOSYS Limited	3.6	INR. 10,000/- Per Month
62	155090	1507688	Udaivir Singh	INFOSYS Limited	3.6	INR. 10,000/- Per Month
63	155091	1507690	Varinder Singh	INFOSYS Limited	3.6	INR. 10,000/- Per Month

64	156101	1508238	Harshita Sharma	INFOSYS Limited	3.6	INR. 10,000/- Per Month
65	156063	1507947	Neha Mishra	INFOSYS Limited	3.6	INR. 10,000/- Per Month
66	156083	1507967	Sanjampreet Singh	INFOSYS Limited	3.6	INR. 10,000/- Per Month
67	156085	1507969	Shubham Sinha	INFOSYS Limited	3.6	INR. 10,000/- Per Month
68	156088	1507972	Sukhdeep Singh	INFOSYS Limited	3.6	INR. 10,000/- Per Month
69	156093	1507976	Vikas Tripathi	INFOSYS Limited	3.6	INR. 10,000/- Per Month
70	1729016	1707407	Rakhi Kumari	INFOSYS Limited	3.6	INR. 10,000/- Per Month
71	151134	1508206	Sunny Kumar	Thermax Limited	4.75	

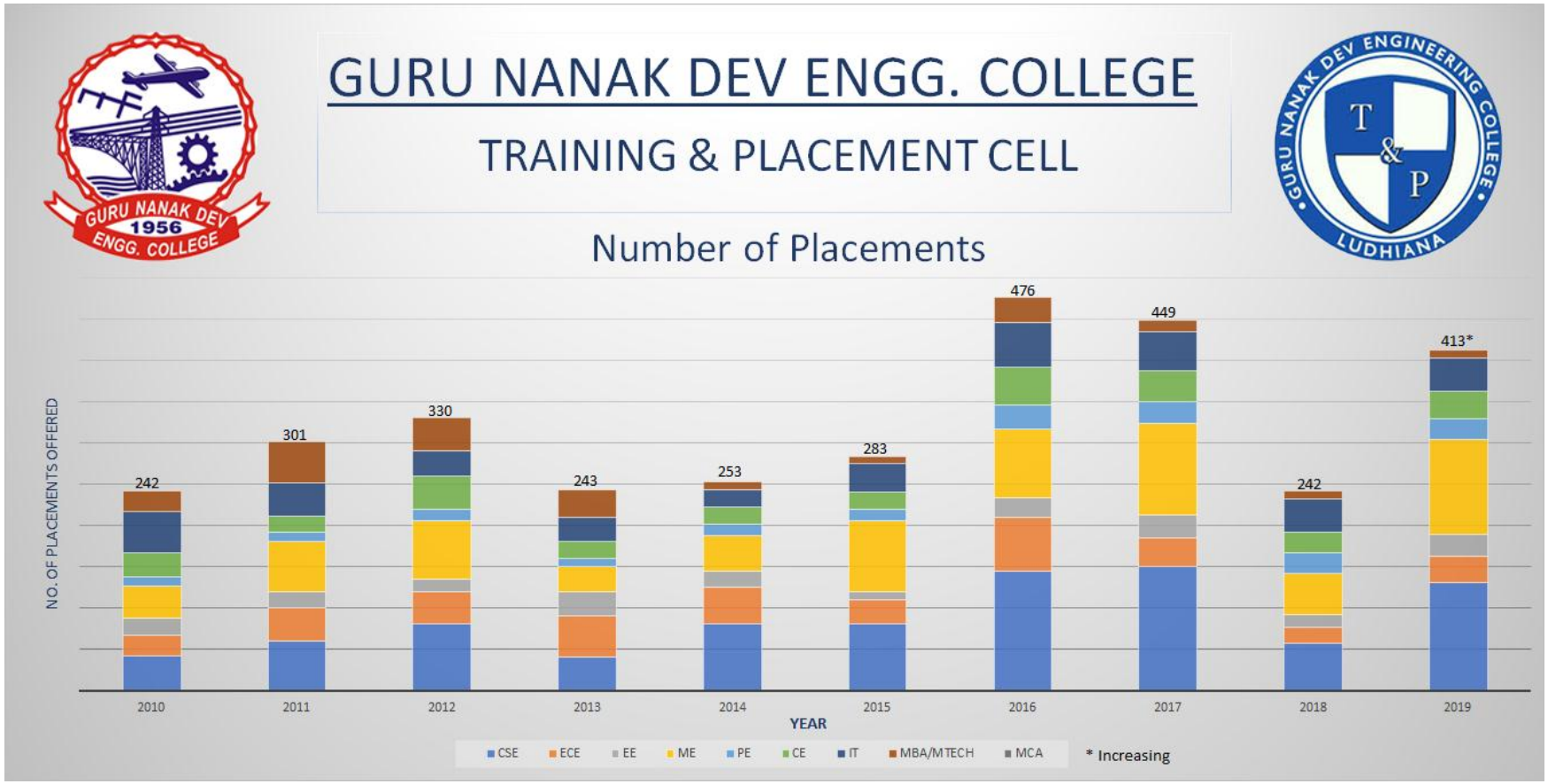


Fig: Placement graph at GNDEC from year 2010 to year 2019