Guideline for B.E. PMMS Activities

Academic Year 2015-16

(Semester VII and VIII)

Gujarat Technological University

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Every student must register his/ her project, along with the details of the team members, Faculty Guide etc at the earliest. Then as the semester progresses, every student is required to upload the Periodic Progress Reports and perform other activities, relating to the project.

At the end of the semester, every student is required to upload the final project report and other necessary documents.

After a student registers and after it is validated by the HOD, the user name and password will be sent by e-mail to the student, at the e-mail address, given by the student, while registering his/ her project.

Table of Contents

NOTE: INSTEAD OF GOING THROUGH FULL DOCUMENT AT ONCE, STUDENTS AND FACULTY/HOD/PRINCIPAL ARE ADVISED TO REFER TO SPECIFIC PAGES OF ACTIVITIES AT THE TIME BEFORE THEY ARE ACTUALLY GOING TO PERFORM IT, SO AS TO UNDERSTAND ACTIVITIES AND THEIR OBJECTIVE WELL ENOUGH.

1. Scope and Objectives of PMMS activities

Dear Students/Faculty/HOD/Principal,

At Gujarat Technological University, under the visionary leadership of Dr. Akshai Aggarwal, Hon'ble Vice-Chancellor, GTU Innovation Council (GIC) has been working on the development and further scaling up of the Project Mentoring and Monitoring System (PMMS) development.

On the same platform, interactive search facility is now being provided so that you can search the bibliography of the project reports of the last two years from all GTU affiliated colleges. This will be useful to students for finding out the trends of projects been already carried out and the scope of the next level innovative projects.

Objectives of the PMMS: 1. to develop a system for helping the students to get appropriate help and mentoring and

2. to help them work more systematically on their project.
3. to help the students to remain in active contact with their team members, their Faculty Guide and industry-mentors (if any), HOD, principal as well as by university -- on a real time basis The students in the team can update about their progress in project and guide can comment on their status, progress and problems. This will increase collaboration and co-creation while improving novelty of their work.

PMMS will be used for all projects being carried out by the students in all the BE colleges/institutes, affiliated with GTU.

PMMS is a user friendly and result oriented platform which helps students for multiple activities being carried out during the work on the final year project of B.E.

FURTHER DEVELOPMENT: PMMS is being developed further so that the students can obtain mentoring activities for their projects by various industry experts and R&D professionals, from anywhere in the world—in addition to the mentoring from their Faculty Guide. The platform is been developed so that interfaces will be generated to filter projects based on various technological fields as per interest and technical expertise of the mentor.

For any query or suggestions related to PMMS you may contact GTU at: s4@gtu.edu.in

Thanks and Regards

Team PMMS, GTU Innovation Council

2. List of PMMS Tasks for Semester 7 & 8

The online platform: **http://projects.gtu.ac.in/** helps cater to the different needs of the students and the Colleges. During semesters 7 and 8, the following tasks will have to be carried out by students using the PMMS platform only:

PMMS Tasks for Semester 7 & 8:

Semester 7	Semester 8
1. Student registration 2. Team formation 3. Periodic Progress Report (PPR) 4. Patent Search & Analysis Report (PSAR) generation activity 5. Design Engineering – Canvas activity 6. Final project report upload. 7. Uploading the plagiarism search report **8.** Completion Certificate generation	1. Student registration 2. Team formation 3. Periodic Progress Report (PPR) 4. Business Model Canvas (BMC) and its report upload 5. Patent Drafting Exercise (PDE) 6. Final project report upload. 7. Uploading of the plagiarism search report 8. Completion Certificate generation

Details about all the above activities is described in detail, in the following pages of this document.

For common activities (which will be carried out during both semesters) such as Periodic Progress Reports (PPR) etc, the common details as described in subsequent pages will be applicable during both semesters.

For all the above activities, each student has to register with his details at http://projects.gtu.ac.in/. After the approval from respective HOD/Principal students will get password via email to work on the PMMS portal.

PMMS activity matrix for semester 7 and 8:

Activity	For Semester 7 or 8	Team activity or Individual Activity
Student registration	Both Semesters	Individual student activity

Team formation	Both Semesters	Team activity
Periodic Progress Report (PPR)	Both Semesters	Individual student activity
Design Engineering – Canvas activity	Only Semester 7	Team activity
Patent Search & Analysis Report (PSAR) generation activity	Only Semester 7	Individual student activity
Final project report upload.	Both Semesters	Team activity
Uploading the plagiarism search report	Both Semesters	Team activity
Completion Certificate generation	Both Semesters	Individual student activity
Business Model Canvas (BMC) and its report upload	Only Semester 8	Team activity
Patent Drafting Exercise (PDE)	Only Semester 8	Team activity

It is very important to understand the **objective** of all activities (mentioned at proper pages in this document) prior to doing it.

3. User ID and password for Internal Guide/HOD/Principal

GTU PMMS system is based on the Faculty Members' data provided by colleges through the GTU admin panel. Separate log in details are being provided to Internal Guides of the projects, HOD and Principal to use the PMMS platform.

The username and password to operate PMMS portal: http://projects.gtu.ac.in/ is sent via email to the users as below:

Sr. No.	User Category	Password for PMMS is sent via email, at following email address:
1	**Students**	Email Id provided by student in registration phase
2	**Faculty**	Email ID provided in GTU staff data through http://gtu.ac.in/admin/ by respective college
3	**External Guide**	Email ID provided by student in registration phase
4	**HOD**	be_XXX_YY_head@gtu.edu.in where in XXX is the college code & YY is department code
5	**Principal**	becXXXowner@gtu.edu.in where in XXX is the college code

For HOD and Principal, **ONLY** GTU standard mail ID (becXXXowner@gtu.edu.in or be_XXX_XX_head@gtu.edu.in) is to be used as username in PMMS.

For all Faculty Members, the password will remain the same as for your last log in. If forgotten, the password may be recovered using:
http://projects.gtu.ac.in/_layouts/15/GTUPMMS/GTUForgatePasswordApp.aspx

For all activities which are to be performed through faculty account can also be performed from HOD or principal sir's account as well. PMMS portal has given all rights to HOD and Principal's account as well.

For Faculty Members**, whose data is not available at GTU admin panel or whoever wants to edit/update their profile can update details through: http://gtu.ac.in/admin/ . Once it is done then and only then, it will be possible to access this site.**

For Faculty Members, please refer: http://gtu.ac.in/affiliation/2015/09062015_11.pdf

Note: All faculty/HOD/Principal have to ensure that student are made aware of the *objective and scope* of all tasks, prior to performing any task.

4. Student Registration and Team formation

1. **Students Registration Activity** and approval by *HOD/Principal*. (20th August onward)

2. **Students team formation** for project approval by *Internal Guide/HOD/Principal*. (25th August onward)

Students Registration Activity

At current stage, all BE semester 7 students have to register themselves at above platform: http://projects.gtu.ac.in/ with their details, once students registers themselves at above portal then their approval to PMMS system is to be made either by their **HOD or Principal** from their PMMS account (be_XXX_YY_head@gtu.edu.in or becXXXowner@gtu.edu.in , where in XXX is the college code & YY is department code) after due verification of details given by students.

Once HOD/Principal approves the said students, the password to log in to PMMS portal for students will be sent on their given mail Ids at registration form. Then student have to log in using their enrolment number as user ID and password which is been sent via email on given mail ID. After log in to the PMMS portal students may change their passwords.

Students' Team Formation

After log in to PMMS, students have to form their team based on their project details and project partner's enrolment numbers. Such team is formed by any one of team members, once all other team member's student registration is approved by HOD/Principal.

Student can form their team by giving appropriate details of their project and project guide. Then student have to add team member by giving their enrolment numbers. Only the students who has been approved by HOD/Principal can be added to any project team. Students who will not be approved by any HOD/Principal cannot be added to any team.

Student once added to any team cannot be added to any other team, till he/she is approved/rejected by faculty.

Students who are doing project individually, have to select project as an individual instead of team and has to finish the process.

Once student team request is been made/submitted, it has to be approved by either of **Internal guide.** The same can also be approved by respective **HOD/Principal**.

Once the team is approved for any project then they can update for their regular progress and other activities at PMMS portal. In case of any error contact your guide/HOD/Principal.

Note: *For students and teams who are working on different projects during semester 7 & 8, in such cases students may update their details at later stage during semester 8 registration phase. Any such changes in project and team can be made during/using registration phase.*

5. Periodic Progress Report (PPR)

Periodic Progress Report (PPR) task has been added to the PMMS system, with following objectives:

1. Each **student** will be able to update his/her progress in the project at regular interval of time.
2. **Internal guide & the external mentor** (if any), can see the progress of students and can comment on the progress and problems via this online platform.
3. **HOD and Principal** can maintain the track record of students' progress, as well they can also comment (optional).

What to do in Periodic Progress Report (PPR)?

In Periodic Progress Report (PPR) task, **each individual student** (Not a team, so it is an individual student activity) has to give update with respect to his contribution in the progress of project at regular time interval of **14 days**, by answering following questions.

1. **What progress student has made in the project related to their final year IDP/UDP?**
   (Give brief note about the work student has did in a period of 14 days, and mention the status of progress)

2. **What Challenges student has faced and how they are trying to solve them?**
   (Student has to list out the various challenges he/she had faced, with respect to the task allotted to him/her in a project)

3. **What support student needs?**
   (Mention the details related to the kind of support he/she needs against the kind of challenges he/she had faced in progress of project)

4. **Which literature student has referred and its analysis?**
   (List out the all literature, which student has referred in a period of every 14 days, with respect to need of project, challenges student has faced etc.)

Note: Each student has to submit four set of PPRs, to which his respective guide (Internal and/or external) must have to comment. This activity has to be finished in between 03.09.2015 to 02.11.2015. Each student has to take photocopy of four PPRs along with the comment given by respective guide/HOD/Principal and has to attach in his/her final project report.

The general sets of rules related to Periodic Progress Report (PPR) task are as below:

1. Every student has to submit Periodic Progress Report (PPR) Individually (Not in Team).
2. Each student has to submit minimum four Periodic Progress Reports (PPRs).
3. Every student has to submit Periodic Progress Report (PPR) at every 14 days interval i.e. as below:

Sr. No.	Periodic Progress Report (PPR)	Time Limit
1	1st PPR	02.09.2015 to 17.09.2015
2	2nd PPR	17.09.2015 to 01.10.2015
3	3rd PPR	01.10.2015 to 15.10.2015
4	4th PPR	15.10.2015 to 30.10.2015
-	Additional PPR	30.10.2015 onwards

4. If any student fails to submit any PPR within due date, he/she will not be allowed to submit that particular PPR after such due date, as it will be freezed after due date.

5. After 30th October, students can submit any number of Additional PPR any time, this is an optional task. Such report will come with following headers: Additional PPR_XX, where in XX is the numerical value.

6. **Save and Submit button on PPR:** After filling PPR, if student click on **Save** button, student's PPR will be saved and he/she can *edit* the same in future (but within due date only), If student click on **Submit** button, student's PPR will be *submitted* and he/she will not be able to edit the same in future. So be careful while submitting the PPRs.

7. If any student wants to furnish any other details apart from answering above four questions as part of their PPR, he/she can give details via uploading specific file.

8. Once student submits PPR, his/her respective guide (Internal AND/OR External) must have to make comment on it.

9. If any HOD/Principal is also interested to make comment on any PPR, they are also permitted to do so (optional).

10. At the end, students have to take photocopy of submitted PPRs (along with comments from their respective guides – internal as well as external and/or HOD/Principal) and have to attach the same with the final project report.

Note: Students are also required to do PPR activity during semester 8, with respect to their semester 8 project work. Other rules will remain same as above. Applicable Time line will be declared on PMMS portal.

Role of Internal guide/HOD/Principal:

- Make students aware about the *objective* of this activity.
- Internal guide must has to **verify** the PPR and uploaded attachments submitted by each student. Faculty may give their **suggestion/inputs/comments** related to PPR and attachment. The same tasks can also be performed from HOD/Principal's account.
- Based on the inputs from internal guide/HOD/Principal each student has to take necessary action.
- External guide and External mentor can also comment on this activity.

6. Design Engineering - Canvas Activity

For Design Engineering, canvas related activities, please refer the detailed circular: http://www.gtuinnovationcouncil.ac.in/filer/25062015035716.pdf

During semester 7 the student teams are required to carry out the following design engineering canvas activities **related to student's project** to identify and filter out good ideas and project definition to work upon:

1. AEIOU Summary
2. Empathy Summary
3. Ideation
4. Product Development

The Institute/College will arrange workshops for different design canvases like Empathy Summary, Ideation and similar design thinking practices. All the student-teams are required to participate in the workshops, involving the whole of the class and prepare the necessary documents. Students' teams need to summarize AEIOU framework activity for observation part in Empathy Summary. Then they need to document scouted challenges of the Final Year problem that they have selected. Out of those challenges the top 5 problems need to be selected on the basis of desirability, feasibility and viability. After discussion with Faculty Guide and other groups, the final problem statement may be defined. All teams need to validate their problem statements with the users.

For the format of various canvases and supportive guidance please refer following documents:
- The guideline document for 2015-16 design engineering canvas activity is available at: http://www.gtuinnovationcouncil.ac.in/filer/25062015035716.pdf
- The guideline document for 2014-15 design engineering canvas activity is available at: http://files.gtu.ac.in/circulars/14SEP/09092014_04.pdf
- BE 7th Semester Project work flow for all branches: http://gtu.ac.in/circulars/15May/13052015_11.pdf
- http://www.gtu.ac.in/circulars/15May/13052015_16.pdf.
- http://www.gtu.ac.in/circulars/15June/22062015_11.pdf

Role of Internal guide/HOD/Principal:
- Make students aware about the *objective* of this activity.
- Internal guide must has to **verify** the uploaded canvas files related to individual teams activity/project. Faculty may give their suggestion/inputs/comments related to canvas and report. The same tasks can also be performed from HOD/Principal's account.
- Based on the inputs from internal guide/HOD/Principal student team has to take necessary action.
- External guide and External mentor can also comment on this activity.

Note: GTU is further developing facility for reviewing of design canvases by faculty/HOD/Principal to filter best innovative ideas generated via these tasks. The best ideas will be taken further as real novel projects to convert into real products.

7. Patent Search and Analysis Report (PSAR) Generation Activity

The **Objective** of PSAR activity is to increase awareness regarding patents among students and faculty by making them familiarity with patent websites & patent documents. To motivate students for innovative thinking. In PSAR activity every student of final year BE who is doing project individually or in team are required to do patent search related to their IDP/UDP/Final year projects and submit a report of their such work online.

During this Patent Search and Analysis Report (PSAR) generation activity, every student within a team has *to study at least five (5) patents related either to his/her IDP/UDP or related to his/her area of interest.* Analysed data of each of these five patents is to be submitted online at PMMS portal.

It will be the responsibility of the faculty-guide to ensure that each student (team member) will study the different patents related to their IDP/UDP. No student of the same team/same class has to repeat the same patent as studied by another team member/student of the same project/IDP/UDP or class.

The PSAR reports of patent search work by each team will also be made online along with comment and suggestions of the guide. Data will be made available online for creating lateral learning opportunities within and across various branches/sectors of engineering students at GTU.

Role of Internal guide/HOD/Principal:
- Make students aware about the *objective* of this activity.
- Internal guide must has to **verify** the uploaded canvas files related to individual teams activity/project. Faculty may give their suggestion/inputs/comments related to canvas and report. The same tasks can also be performed from HOD/Principal's account.
- Based on the inputs from internal guide/HOD/Principal student team has to take necessary action.
- External guide and External mentor can also comment on this activity.

STUDENTS CAN USE ANY FREE/OPEN SOURCE AVAILABLE PATENT DATABASES FOR PATENT SEARCH, few of open source patent databases are as below:

Database	Web link
Indian Patent Office Database	http://ipindiaservices.gov.in/publicsearch/
European Patent Office Database (Espacenet)	http://worldwide.espacenet.com/advancedSearch
WIPO Patent Database (PATENTSCOPE)	http://patentscope.wipo.int/search/en/search.jsf
US patent database (USPTO)	http://patft.uspto.gov/
Google Patents	https://patents.google.com/
Free Patents Online	http://www.freepatentsonline.com/
Directory of Country Wise Intellectual Property Offices	http://www.wipo.int/directory/en/urls.jsp

Note: *To scale up the PSAR activity, this year GTU is also introducing the <u>PSAR review process by faculty</u> in PMMS. Faculty are advised to motivate students for giving best possible extensions/add on features in each studied patent by every students. These data of PSAR reports will be made online for lateral learning by other faculty and students. And after review of each innovative idea (answer of PSAR question 27), by faculty best ideas can be identified and transformed/taken into really innovative projects to build novel product or processes. This will enhance the level of innovative idea/projects and mitigate the duplication of work.*

<u>Review of the PSAR reports by the faculty guide, comprising set of questioner as below:</u>

1. Does this PSAR report is based on patent related to student's project?- Yes/No
2. Does student have prepared PSAR report after proper reading of patent? – Yes/No
3. Does the PSAR report of student is of appropriate quality? – Yes/No
4. Does the PSAR activity had contributed in any way to improve the project of this students? – Yes/No
5. **Does the improvement idea given by student under question no 27 of PSAR report has potential to take forward as novel project in next semester/year?** - Yes/No , and then its description

Structure of the PSAR report

Sr. No.	Question	Answer
Part 1: Patent Search Technique Used		
1	Patent search database used*	Select any patent database from where you got particular patent to prepare PSAR report. (In case you select other, give details in provided text book).
2	Keywords used for search*	Provide the various keywords, which you have used to search patents. Minimum THREE keywords.
3	Search string used*	Provide exact phrase consisting of various keywords and Boolean operators (AND, OR, NOT etc) or wild cards (*, #, ? etc), which are used to get relevant patents.
4	Number of results/hits getting*	Give the number of related patents you get after using proper search string.
Part 2: Basic Data of Patented Invention/Bibliographic Data		
5	Category/ Field of Invention*	Provide the branch of Engineering with which patent is associated (For e.g. Mechanical, chemical, electrical etc)
6	Invention is related to (Class/Area of Invention)*	Provide the end field of technology with which patent is actually associated. (For e.g. – For automobile field's student: Patent is associated with gear, break, engine etc)

6a	IPC class of the studied patent	The International Patent Classification (IPC) is a hierarchical patent classification system used in over 100 countries to classify the content of patents in a uniform manner. It is an indexing system to organize patent documents from around the world based on the technical field of the invention, thereby providing a retrieval system by subject matter, independent of keyword searching. Mention the IPC class as mentioned in patent document
7	Title of Invention/Patent*	Provide the exact title of patent as shown on patent document which you are studying.
8	Patent No.	For patent applications which are granted, give the exact patent number as given by patent office.
9	Application Number*	Provide the exact application number of studied patent.
9a	Web link of the studied patent	Mention the web link of patent studied by you, so it will help for easy retrieval of same patent after words.
10	Date of Filing/Application* (DD/MM/YYYY)	Mention the date on which application for patent is made.
11	Priority Date (DD/MM/YYYY)	Mention the FIRST DATE i.e. the date on which application for FIRST patent is made for this invention in ANY OF THE COUNTRY.
12	Publication/Journal Number	Mention the Publication No./Journal No./Bulletin No etc. in which application for patent is published.
13	Publication Date (DD/MM/YYYY)	The date on which application for patent is published in official patent journal/bulletin.
14	First Filled Country	Mention the country where application for patent is filled first time for particular invention.

		Countries where Filled	Application No./ Patent No.
15	Also Published as	Give details of one or more countries and relevant application/patent number in which application for patent is made to protect SAME invention.	

	Name of Inventor/s*	Address/City/Country of Inventor*	
16	Give details of one or more inventors associated with development of invention mentioned under this patent.		

	Name of Applicant/ Assignee*	Address/City/Country of Applicant*	
17	Give details of one or more Applicant/Assignee associated with development of invention mentioned under this patent.		

18	Applicant for Patent is*	Mention whether the applicant for patent is Individual Person/s or Organization (Company/College/University etc).

Part 3: Technical Part of Patented Invention

19	Limitation of Prior Technology/Art*	Give details about, what are the problems associated with previous available technologies, prior to this patent.
20	Specific Problem Solved/Objective of Invention*	Give details about objectives and benefits of particular Invention/Patent and list out the specific problems, which were overcome by technology behind this patent.
21	Brief about Invention*	Give detailed information about patent, and its technology. Content should comprise details related to following questions: What is this Invention? What are its Components? What is the role of each component? What is the flow of process? How the invention will work? etc…
22	Key learning points*	Give point wise details related to, what each student has learnt after studying each patent.
23	Summary of Invention*	"Here students have to give details about what they have learnt after reading each patent document. Make note on following points, IN YOUR WORDS: What is the invention about? What are problems of prior art? What are the benefits of patented technology? Etc. Students have to make summary of each patent in not more than 500 words."
24	Number of claims*	Give the exact number, How many claims are there in studied patent.
25	Patent Status*	Select any one which is applicable for studied patent – Published Application/Granted Patent/ In-force Patent/ Failed to maintain the Patent/Expired Patent
26	How much this invention is related with your project? *	Select any one indicating % relevance of this patent document with you project: > 91 %, 71 to 90%, < 70 %, Not related to project
27	**Do you have any idea to do anything around the said invention to improve it? (Give short note in not more than 500 words) ***	**After studying each patent thoroughly and by answering all the previous questions, each student has to answer this question very carefully and give your valuable ideas in a very precise manner.** **Here students have to think for any possible modification/ improvement in the studied patent he/she can make so as to maximise its effectiveness/user friendliness.** **Students have to give idea about possible alterations they can make, in briefly about 500 words.**

FAQs related to PSAR

1. Students can study any patent from any patent database related to his/her IDP/UDP and can make Patent Search and Analysis Report (PSAR) on that patent. Sometimes single invention is patented by applicant in different countries, hence students have to take care that they have to select different patented inventions to prepare a summary report.

2. Many patent documents are available as an image copy or scan copy of the original document. In such cases, students may try to search for same patent via different patent search engine. If not available, then to copy the content from such patent for generating Patent Search and Analysis Report (PSAR) on that patent, student can take help of following software: **ABBYY FineReader.** It is available at http://finereader.abbyy.com/

3. **The above software is a free trial version of ABBYY FineReader, so that at a time you can select any two pages of patent document and convert them into .doc file.**
   a. Students have to check the correctness of data copied from text generated by such software's with the original patent document while preparing PSAR reports.

4. If any student finds any patent related to his/her IDP/UDP in language other than English, then after converting image file to .doc file as mentioned in step 2, student can take help of **Google Translator** (www.translate.google.com) to translate patent from any language to English. By doing so student can make a Patent Search and Analysis Report on that patent. (Generally abstract of every patent is available in English. And by studying such abstract student can make a decision, whether that particular patent is related to his/her IDP/UDP or not.)

5. Students can also take help of online patent translator tool available with some databases (Espacenet & PatentScope) to convert text of other languages to English.

6. While Studying Indian Patents, in most cases student needs to refer following Forms/ Documents to generate PSAR report:
   a. **Form 1: Application for Grant of Patent** (Details about Application No., Applicant- Inventor & their address, Title of Invention, Filing Date, Priority Date, First filled country, Details about application filed in another foreign countries and related application/patent no. etc. will be available from this form)
   b. **FORM 2 : Provisional/Complete Specification** (Details for in-detail information on Invention, Limitation of prior art, Specific Problem Solved/Objective of invention and Summary of invention will be available from this form)
   c. **Claims:** Sometimes Claims are mentioned under Form 2, while some time they were also published under separate document entitled as "Claims".

7. In case of Indian Patents, where sometimes you find two or more copies of any form/document. In such cases student have to make Patent Search and Analysis Report based on the form/document which is the **latest one and contains all the necessary information.** (For example – Under view documents option for any patent, there are

three copies of Form 2, like Form-2, Form-2 (11/05/2010), and Form-2 (03/01/2011). Then students have to study the Form2 (03/01/2011) which contains **all** updated information. This rule is applicable for all the forms/documents.

8. While preparing PSAR reports, it is advisable to prepare reports using patents obtained from different patent databases. (Like one from Indian Patent Office, One from European Patent Office, One from US Patent Office, One from WIPO Patent database and so on)

Study Material for PSAR

➢ To know more about Basics of IPR, Patent Searching and How to generate Patent Search and Analysis Report read the following modules available at the below mentioned web link:

- Module 1- Basics of IPR and Patent
  http://www.gtuinnovationcouncil.ac.in/filer/08072015013104.pdf
- Module 2- Patent Search Methodology
  http://www.gtuinnovationcouncil.ac.in/filer/08072015013214.pdf
- Module-3: Preparation of Patent Search and Analysis Report
  http://www.gtuinnovationcouncil.ac.in/filer/08072015013248.pdf
- Compendium of Module-3: Interpretation of Patent documents from different databases: http://www.gtuinnovationcouncil.ac.in/filer/08072015013346.pdf

The material for self-study is also being made available through 'you tube' channel of GTU Innovation Council.

MODULE 1: BASICS OF IPR & PATENTS
Part 1 of 3: http://www.youtube.com/watch?v=P70EJkELI90
Part 2 of 3: http://www.youtube.com/watch?v=OLOAx8G9PL0
Part 3 of 3: https://www.youtube.com/watch?v=He__JjuEKnE&feature=share

MODULE 2: PATENT SEARCH METHODOLOGY
Part 1 of 5: http://www.youtube.com/watch?v=NymTmy3l9r4&feature=youtu.be&a
Part 2 of 5: http://www.youtube.com/watch?v=IbD3VBQe_o8&feature=youtu.be&a
Part 3 of 5: http://www.youtube.com/watch?v=UeTxQbF1_4c&feature=youtu.be&a
Part 4 of 5: http://www.youtube.com/watch?v=G0gVl3IGFFM&feature=youtu.be&a
Part 5 of 5: http://www.youtube.com/watch?v=6Dpujnn8574&feature=youtu.be

HOW TO GENERATE PATENT SEARCH & ANALYSIS REPROT (PSAR)
Part 1 of 5: http://www.youtube.com/watch?v=X_y-aB7z0tA&list=PLnNDkCrMgsxl0WvGrEh3w_o99UlnsaQka&index=1
Part 2 of 5: http://www.youtube.com/watch?v=BvwYYhTLYuU&list=PLnNDkCrMgsxl0WvGrEh3w_o99UlnsaQka&index=2
Part 3 of 5: http://www.youtube.com/watch?v=jaqK8LdqXLA&list=PLnNDkCrMgsxl0WvGrEh3w_o99UlnsaQka&index=3
Part 4 of 5: http://www.youtube.com/watch?v=l1j4J7h9RgU&list=PLnNDkCrMgsxl0WvGrEh3w_o99UlnsaQka&index=4
Part 5 of 5: http://www.youtube.com/watch?v=irc1A9kfHIw&list=PLnNDkCrMgsxl0WvGrEh3w_o99UlnsaQka&index=5

8. Business Model Canvas (BMC) Exercise

All student teams have to develop and prepare a BMC with respect to their project. They also need to upload the prepared report on BMC at project site. Students will be intimated when the facility to upload the BMC canvas & report will be made live.

Detailed circular/guideline related to all canvas including BMC is already available at:
http://files.gtu.ac.in/circulars/14SEP/09092014_04.pdf

Objectives of BMC:

Business model canvas is used to validate the market significance of products and services which will be of technology nature in this case. Technology projects are often solutions or processes that solve a technical problem. However the market implementation of such solutions also require that the problem solution is designed to overcome not just the technical barriers but also market and business related barriers of costs, customer reach and collaborations and those that pertain to the practical nature of limited initial capacities within the team.

Thus business model canvas can be used to visualise such market problems and customer expectations. This exercise will increase the market potential and penetration of technology goods and services. This will make them more effective in market.

This exercise will bring discussions on viability and cost effectiveness into picture along with their clear impact. This exercise will enable students to have a clear understanding on the steps required to ensure that whatever solution they develop as their project should have a user who can afford it with desired needs. This exercise also helps students to understand the true value of the proposed solution.

Duration of the exercise: This exercise will take average 3-4 hours including the presentation by each team where all other team will comment and suggest on the presenting team's project canvas. If required colleges/branches can certainly take extra time, if required.
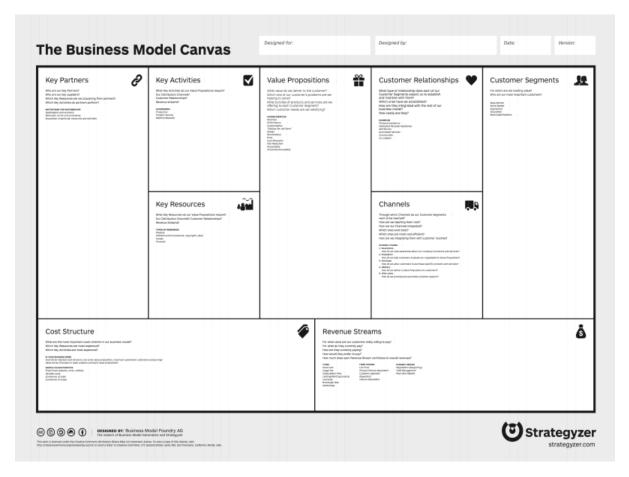

Process to conduct such hands on workshop:
The process of conducting such workshop will be nearly the same as the ideation canvas exercise on page 3 of above hyperlinked circular.

You may refer more details about this at:
http://en.wikipedia.org/wiki/Business_Model_Canvas &
https://www.youtube.com/watch?v=QoAOzMTLP5s

BMC canvas for IDP/UDP exercise for BE final year students

For description about various terminologies and FAQ on BMC, refer page no 15-18 of following file: http://files.gtu.ac.in/circulars/14SEP/09092014_04.pdf

Role of Internal guide/HOD/Principal:

- Make students aware about the *objective* of this activity.
- Internal guide must has to **verify** the uploaded file and report related to individual teams activity/project. Faculty may give their **suggestion/inputs/comments** related to canvas and report. The same tasks can also be performed from HOD/Principal's account.
- Based on the inputs from internal guide/HOD/Principal student team has to take necessary action.
- External guide and External mentor can also comment on this activity.

9. Patent Drafting Exercise (PDE)

NOTE: All student teams have to generate PATENT DRAFTING EXERCISE (PDE) forms ONLY from http://projects.gtu.ac.in/

As a part of BE semester 8 students project work, GTU has introduced **"Patent Drafting Exercise (PDE)"** in 2013-14. *This activity is designed to train our students about provisional patent filing procedure in India, its requirements, necessary forms, fees, associated time limit etc.* To support this activity GTU has organized several Faculty Development Programmes (FDP) to train faculty from all GTU affiliated engineering colleges about this new initiative. All such trained faculty are supposed to help final year BE students at their respective colleges, to train final year students about the PDE.

This is in continuation of the **"Patent Search & Analysis Report (PSAR)"**, which was prepared by all students during semester 7 of BE as a part of Prior Art Search (PAS) activity. *PSAR was introduced to make students aware about patents, patent information websites, patent search, patent documents etc.* in the area of their final year project so that they can improve the novelty of the final year projects by knowing what has been done before.

Objectives of Patent Drafting Exercise (PDE)

- To train all students about provisional patent filing procedure in India
- To make all students familiar with Patent filing forms (Form- 1, 2 & 3)
- To make students aware about the various requirements/data to be provided for filling of such forms.
- To teach students about various patent filing forms, fees and time limit associated with various operations associated in patent filing procedure in India.

Key guidelines for Patent Drafting Exercise (PDE)

1. This exercise is applicable to all BE (Semester 8) students.
2. This exercise is to be done by **team** of students doing project together **(One PDE for one project).**
3. To prepare the PDE, every student team has to assume that their project is novel and innovative. The team prepares document/forms, that would be required if the team were to file a patent on the work done by them for the Final Year project.
4. For filing a provisional patent, three basic forms are required. These forms are **Form 1** (Application for Patent), **Form 2** (Provisional/Complete Specification) and **Form 3** (Information and undertaking under section 8 of Patent Act). For completing the required work under PDE, every student team has to prepare these three forms for their final year project.
5. This exercise can be done even though IDP/UDP project is still on-going.
6. PDE is to be carried out for project undergoing/completed in BE (Semester 8) only. For those students who have carried out two different projects during semester 7 & 8

(with same team/different team or any change in team member or project definition), the PDE is to be prepared for the BE (Semester 8) project only.

7. All the student teams have to prepare and get ready with their draft patent filing forms in word files till the facility to generated Patent Drafting Exercise (PDE) will make live on project site.

8. The forms/documents prepared/generated via this Patent Drafting Exercise (PDE) are to be submitted along with the project report by all student teams.

9. The PDE is just a mock exercise about preparing provisional patent filing documents/forms. The documents generated at the end of this exercise are not for filing with any patent office. This activity is for learning purpose ONLY.

Study material for PDE

Overview of Drafting Provisional Patent

Part – 1: https://www.youtube.com/watch?v=87pZYu-28fo
Part – 2: https://www.youtube.com/watch?v=_XX2NUVpPJg
Part – 3: https://www.youtube.com/watch?v=wg3fAw2oreI
Part – 4: https://www.youtube.com/watch?v=al_eDO7Kg2g

Patent Drafting Exercise

Part – 1: https://www.youtube.com/watch?v=DCDNY0AG8UU
Part – 2: https://www.youtube.com/watch?v=TCSnj1ukOfs
Part – 3: https://www.youtube.com/watch?v=diF6AD_TfKw

Role of Internal guide/HOD/Principal:

*   Make students aware about the *objective* of this activity.
*   Internal guide must has to **verify** the generated PDE report related to individual teams activity/project. Faculty may give their **suggestion/inputs/comments** related to PDE report. The same tasks can also be performed from HOD/Principal's account.
*   Based on the inputs from internal guide/HOD/Principal student team has to take necessary action.
*   External guide and External mentor can also comment on this activity.

10. Plagiarism Search Report/Certificate

Anti-plagiarism check certificate for the final year project report

All the student teams have to check their project report for plagiarism, which indicates percentage similarity of the languages used during drafting project report, using a good plagiarism-checking/search software package. All student teams have to get plagiarism search certificate using any available free plagiarisms search tools/service/software.

List of few online free plagiarism checker tools are as below, student can use any of below to get plagiarism search report/certificate related to their project report. Also students are permitted to use any other tools beyond this list. Students are advised to get plagiarism certificate as soon as possible after their project report is ready.

Sr. No.	Website Name	Link
1	Viper	http://www.scanmyessay.com/
2	Plagium	http://www.plagium.com/
3	Plagiarisma.net	http://plagiarisma.net/
4	PlagScan	http://www.plagscan.com/seesources/
5	Copyscape	http://www.copyscape.com/
6	JPlag - KIT	https://jplag.ipd.kit.edu/
7	DOC Cop	https://www.doccop.com/index.html
8	Duplichecker	http://www.duplichecker.com/
9	Dustball	http://www.dustball.com/cs/plagiarism.checker/
10	Plagiarism detect	http://www.plagiarism-detect.com/
11	PaperRater	http://www.paperrater.com/
12	Free Online Plagiarism Software	http://plagiarismsoftware.org/
13	OAPS	http://oaps.eu/
14	Wcopyfind	http://plagiarism.bloomfieldmedia.com/z-wordpress/software/wcopyfind/

Note: *Students are required to attach such plagiarisms certificate/report in to their project report; as well they are also required to upload same certificate/report on project site: http://projects.gtu.ac.in/*

Role of Internal guide/HOD/Principal:
- Make students aware about the *objective* of this activity.
- Internal guide must has to **verify** the uploaded plagiarisms report file related to individual teams activity/project. Faculty may give their **suggestion/inputs/comments** related to project report. The same tasks can also be performed from HOD/Principal's account.
- Based on the inputs from internal guide/HOD/Principal student team has to take necessary action.
- External guide and External mentor can also comment on this activity.

11. Final Project Report

Project Report (a spiral bound hard copy) - It is required to be a report of the work, done by the team of students during the academic semester/year. The Report is to be submitted whether the project has been completed successfully or the work is going to be carried out by next semester/year students.

Guidelines for Final Year Project Report: The Project report should have following components:

First Page	Title of the Project, IDP/UDP project, Name and Id. No. of the Students who have worked for the project, Academic year, Name of Industry – if it is an IDP Project, Name(s) of Industry and Faculty Guide(s).
Next Pages	Index
Next Pages	• Acknowledgements • Certificates from college (Suggested Format) • If you have done an IDP, and if the industry finds the solution useful kindly attach certificate of proof of your claim and attach along with the report. Ask the industry to precisely mention what benefit they got from your solution implementation in the company letterhead. • Certificate generated from project site for Completion of all activities at PMMS portal of GTU. (As per page number 25) • Certificate obtained from the Plagiarism checking software. (As per page number 21) • Undertaking About Originality Of Work (Kindly refer Annexure 2 on Page No. 4 of the attached link document)
Chapter1	Title : Introduction 1.1 Problem Summary (What exact problem are you trying to solve?) and Introduction, 1.2 Aim and objectives of the project 1.3 Problem Specifications 1.4 Brief literature review and Prior Art Search (PAS) about the project. [It should include Web search/research publication, User feedback, Vendor/market search, Patent Search (Do not attach the whole PSAR report, mention just one page gist/summary)]. 1.5 Plan of their work 1.6 Materials / Tools required.

Chapter2	Design: Analysis, Design Methodology and Implementation Strategy. Explain your work including Observation Matrix, Ideation canvas, and Product development canvas in the context of your project. For better understanding about these canvases, you may refer: http://www.gtuinnovationcouncil.ac.in/filer/25062015035716.pdf or http://files.gtu.ac.in/circulars/14Oct/01102014.pdf (Explain every step in the above canvases with your own narration based on your understanding and inferences. Also attach the photocopy/image of your canvases in A4 equivalent size).
Chapter3	Implementation: Should covering actual implementation, Results, Reports, Snapshots, Testing and Verification.
Chapter4	• Summary of the results. Advantages of your work/results/methodologies. Usefulness with respect to existing solutions. Scope of future work. • Benchmarking your project with existing product/services or solutions. Mention the Unique Features of your Innovation/Project (IDP/UDP).
References	In the alphabetic ascending order Citations to be provided throughout the Report.
Appendix	Apart from above listed items, project report will also include below information (as an appendix to project report), submitted/generated via project management site: http://projects.gtu.ac.in/ . These have to be represented to external examiner as well.] • Copy of four *Periodic Progress Reports (PPR)* as submitted by each student, along with guide comment on it. (Page No.8-9) **– For both semesters.** • **Patent Search & Analysis Report (PSAR)** as submitted by each student, along with guide comment on it. (Page No. 11-16) **– For semester 7 ONLY** • *Design Engineering canvases:* AEIOU Summary, Empathy Summary, Ideation, Product Development and its report generated in line with the existing project. (Page No.10) **– For semester 7 ONLY** • *Business Model Canvas (BMC) and its report* generated in line with the existing project. (Page No.17-18) **– For semester 8 ONLY** • Draft provisional patent filling forms generated during *Patent Drafting Exercise (PDE).* (Page No.19-20) **– For semester 8 ONLY** • Copy of paper published on the basis of this Project / Patent filed (if applicable). (Kindly attach any paper you have published based upon the work related to your project in any national/international conferences.) -**– For both Semesters**

NOTE:

- *This is a sample format, any college may amend this format based on the need, but it has to ensure that all above listed items must to be included in project report.*
- *The project report copy which is to be uploaded on project site, need to include above items.*

The project reports have to be submitted to departmental HODs of the student's College/ Institution in spiral bound hard copy before the practical/ Viva-Voce examination. In absence of the project guide in any unavoidable circumstances HOD/suitable authority/other faculty members can sign on the certificates.

Further the complete project report needs to be uploaded in soft copy to the GTU web portal specially designed for this purpose: http://projects.gtu.ac.in/ (Every team needs to ensure completion of all tasks at project portal)

NOTE:

- *No student/college has to submit any hard bound project copy/CD to GTU, as GTU will receive the data from student's profile in PMMS portal. Every College may preserve project data of all students/teams in a soft copy on a CD rom for further record.*
- *Students who are working on projects related to Vishwakarma Yojana, have to work as per instruction from their guide to cover all project activities.*

Students need to submit **two copies** of their project report in spiral bound as follows:

1. Student Copy
2. Guide/Department/College Copy

Role of Internal guide/HOD/Principal:

- Make students aware about the *objective* of this activity.
- Internal guide must has to **verify** the uploaded project report file related to individual teams activity/project. Faculty may give their **suggestion/inputs/comments** related to project report. The same tasks can also be performed from HOD/Principal's account.
- Based on the inputs from internal guide/HOD/Principal student team has to take necessary action.
- External guide and External mentor can also comment on this activity.

12. Certificate generation for completion of all activities in IDP/UDP

A Special functionality is developed at project site: http://projects.gtu.ac.in/, to generate completion certificate mentioning the status of various activities performed by each student of every team. This certificate is to be generated by each group member individually. This certificate will mention about weather each student has completed all tasks or not, whether any activity is still pending Etc.

All students are required to generate this certificate via project site, and are required to attach the same with their project report along with their respective guide's signature.

This certificate will include status report for completion of following activities being carried out via project site during semester 7 and 8:

1. Submission of four Periodic Progress Reports (PPR) upload by each student and comments by guide on the same. (Individual student activity) - **For both semesters**.

2. Patent Search & Analysis Report (PSAR) generated by each student and comments by guide on the same. (Individual student activity) – **For semester 7 ONLY**.

3. Design Engineering canvases: AEIOU Summary, Empathy Summary, Ideation, Product Development canvases upload (Team activity) – **For semester 7 ONLY**

4. Business Model Canvas and its report upload. (Team activity) – **For semester 8 ONLY**

5. Generation of Patent Drafting Exercise (PDE) forms. (Team activity) - – **For semester 8 ONLY**

6. Final project report uploads. (Team activity) - **For both semesters**.

7. Uploading of the plagiarism search report. (Team activity) - **For both semesters**.

Role of Internal guide/HOD/Principal:

- Make students aware about the *objective* of this activity.
- Internal guide must has to **verify** the generated certificate and sign the same in student's printed copy of project report.
- In absence of the project guide in any unavoidable circumstances HOD/suitable authority/other faculty members can sign on the certificates.

13. External Mentor Management

To invite and engage the external mentors: experts of specific domains, in to student's projects, GTU is going to launch an External Mentor Management functionality under PMMS portal.

GTU invites external mentors to get engage with student's project, from any state or any country, without any limitation of geographic boundaries.

This facility is under construction, and faculty will be notified once it is made live.

Difference between External Guide and External Mentor.
This one is different than external guide. External guide is the one under whose guidance student is doing any specific project, while the external mentor is the one who can specifically join to any project based on his area of specialisation/interest.

Who can join as external mentor?
Mentors from reputed institutes faculty (apart from GTU colleges), Entrepreneur, Industry Professional, Industry Owner/Partner, R&D Professional, Others can nominates themselves individually or can be invited as an external mentor by any faculty/HOD/Principal. Registration for

How to join as external mentor on PMMS portal?
Any mentor himself or any GTU faculty as representative to any such mentor, can apply for external mentor to join this task by filling simple registration form requiring following details: Name, Email id, Contact Number, Qualification, Specialization, Area of Interest, Current position, Years of experience, Company/Organization/College, Website of Company/ Organisation/College.

Upon receipt of any such request, after checking university will approve request of any person as an external mentor to student's project.

Once university accepts/approves the Mentor Request for any person, login credentials will be sent to mentor on his/her email id.

Using those login credentials, external mentor can log into the PMMS portal: (User Id will be Email ID and password will be as given via email)
http://projects.gtu.ac.in/_layouts/15/GTUPMMS/GTULoginPage.aspx

How mentor can select specific projects for mentoring?
Once external mentor logs in to the PMMS portal, he/she will be able to see the student projects relevant to his/her area of interest and specialization fields. External mentor can select specific projects as per his interest and can send request for mentorship related to particular projects.

Mentorship request will be sent to students project Guide/HOD/Principal. Once any of them approves such request external mentor can engage with student's project and can see their progress and can suggest them to work further.

Any external mentor can be assigned with maximum of five projects only.

What can external mentor do through PMMS portal?
External mentor can see the details related to Project Team including students, Guide, HOD and Principal.

External mentor **can comment** on project report and other PMMS tasks: PPR reports, PSAR reports, Design canvases, Business Model Canvas, PDE report etc.

External mentor can comment to guide students based on their progress and to suggest them next phase activities.

14. Contact Us

For any query/issue/problem, while communicating to GTU please share you're following details: Name, Enrolment Number, Team Id, Email Id and Contact Number along with proper description of your problem.

For any further query you may contact us at:

QUERY RELATED TO	CONTACT MAIL ID
IT related issues	s4@gtu.edu.in
PSAR/PDE IPR/Patent	ipr_projectofficer@gtu.edu.in manish.rachchh@gtu.edu.in po_ipr@gtu.edu.in
Entrepreneurship & Design Engineering canvas activity.	ap_karmjitsinh@gtu.edu.in ap_gagandip@gtu.edu.in

References of last year: 1. Circular for all Final year students doing IDP/UDP for academic year 2015-16 to benchmark their proposed final year projects with respect to old project works Date- 2 nd July 2015 at

http://www.gtu.ac.in/circulars/15Jul/03062015_01.pdf

2. Part- III: Guideline for BE Semester VIII Students (2014-15) Circular for the Final Year project Online registration and submission on the Project Monitoring and Mentoring System (PMMS) http://projects.gtu.ac.in/   at

http://gtu.ac.in/circulars/15Apr/17042015_01.pdf

3. Guideline for BE Semester VIII Students Student-friendly Online Final Year Project Platform: http://projects.gtu.ac.in/

at http://gtu.ac.in/circulars/15feb/09022015.pdf