

Gujarat Technological University

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IDP/ UDP for the Academic Year 2015-16

BE 7th Semester Project work for all branches

Sr. No.	Activities	Task	Time Line
1.	Phase-1 Pre IDP/UDP Exposure program	(a) Explaining to the students about IDP/UDP lifecycle and necessary awareness <ul style="list-style-type: none"> ✓ Colleges/departments need to explain entire innovation cycles, basic idea about IDP/UDP lifecycle, necessary steps needed and other guidelines ✓ Arrange such exposure program in any days (min 2 days) by department/college and explain various interventions by University toward final year IDP/UDP. ✓ Briefing about innovation value chain and various aspects about innovation and its impact and students can innovate through their final year project. 	21 st may 2015-30 th May2015
2.	Industrial ShodhYatra (ISY)(Phase-2) (After 6 th Semester)	(b) Scouting for the Problem <ul style="list-style-type: none"> ✓ Selection of Domain/Industries/Area of Interest for Project ✓ Studying the products or processes for selected industries ✓ All activities via AEIOU and similar framework for the observation activity. Empathization process around particular challenge to figure out project definition. 	1 st June 2015 to 30 th June 2015
		(b) Secondary Research/ Prior Art Search (PAS) <ul style="list-style-type: none"> ✓ Search for patents and other related literature for selected problem.(PSAR) ✓ Literature review /Web search/research publication ✓ User feedback 	30 th June 2015-31 st July 2015

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		<ul style="list-style-type: none"> ✓ Vendor Search/Market Search 	
		<p>(c) Problem Definition</p> <ul style="list-style-type: none"> ✓ Identification of problem definition related to products or processes through Diachronic and Synchronic Analysis and similar design thinking approaches. ✓ Discussion of experience of ISY with faculty guide and other groups. ✓ Defining of Problem Statement from all above exercise (on the basis of Observation and Empathy of user) Empathy summarization. ✓ Frequent interaction with faculty guide with multiple iteration is required. ✓ Try to define the exact challenge in the user's context/ problem context/ socio ecological context etc. ✓ Look for various alternatives as solutions in different combination of material, method and application. 	
		<p>(d) Registering into PMMS tool of GTU</p>	
<p style="text-align: center;">3.</p>	<p style="text-align: center;">Ideation and project planning (Phase 3)</p>	<p>A. Implementation Strategies Selection of Proper Tools / Techniques for Implementation, project planning for the IDP/UDP with clear mile stone.</p> <hr/> <p>B. Ideation Process</p>	<p style="text-align: center;">1st august to 31st August</p>

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		<ul style="list-style-type: none"> ✓ Preparation of ideation Canvas (for exploring innovative idea for their Problem Statement) ✓ Ideas need to evaluate with faculty guide and industry mentor . ✓ Ideas should be presented in drawings/sketches /mock ups (can be made from thermocole, paper, clay or any other materials to simulate and check primary concepts in case of hard tech) ✓ Think about solutions /ideas for different context, geography, demography, usage around the same challenge or similar. ✓ Look for any incremental innovation either in form, feature or function related to your challenge if it can satisfy the need or check for any altogether disruptive idea to serve the purpose. 	
4.	<p>MVP-1 (Minimum viable Prototype Development (Phase 4)</p> <p>Proof of Concept Stage</p>	<ul style="list-style-type: none"> ✓ Define and discuss aspects of product/process like Form, Features, Functions, Components/Parts, Material, Manufacturing Processes etc. via Product Development Canvas ✓ Technical knowledge acquisition to implement the project. ✓ Actual efforts for making the proof of concept ✓ Phase 3 and 4 will be iterative so that one can develop better proof of concept after critical insights from earlier stage and vice versa. 	<p>1st September to 10th October</p>
5.	<p>Potential customer validation /User feedback and implementation (Phase 5)</p>	<ul style="list-style-type: none"> ✓ Team need to validate MVP/product/ process through Customer/User. ✓ On the basis of the feedback from User team will work on Redesign/Reject/Retain phase. (Iterative Process-can be repeat several times depends on feedback) ✓ To make working prototypes wherever possible or at least make 	<p>11th October to 5th November</p>

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		those parts which are relevant to the innovation in priority.	
6.	Report making and real time PMMS updating with all Periodic Progress Report (PPR) (Phase 6)	<ul style="list-style-type: none"> ✓ All groups need to submit their final project report in the format given by University 15th November (latest by Term end) ✓ Real time updating in their project blog by each team and implement mentor's suggestions in real time basis throughout the semester. 	Till 15 th November (Term End)

7th Semester IDP/UDP examination

Those student who will finish the projects in this semester need to take a new project and implement all the steps as above along with the 8th Semester project requirements as given below.

If the teams are carry forwarding their 7th Sem project ahead to 8th Semester then they need to follow the steps required further to take their project ahead and achieve the desired goal.

Step	Activity phases	Key steps	Tentative timeline
1	Project planning for 8 th Semester/implementation strategies (Phase-7)	<ul style="list-style-type: none"> ✓ Planning the project work with timeline with milestone for entire work in 8th Sem and executing them. ✓ Technical knowledge acquisition to implement the project. ✓ Actual efforts in taking the proof of concept to prototype stage. ✓ Frequent interaction with faculty guide/industry mentor/user with multiple iteration is required. 	Till 31 st January 2016
2	Business Model Canvas(BMC) & other product and market validation tool (phase-8) Developing Minimum Viable Product (MVP-2)	<ul style="list-style-type: none"> ✓ This step will be performed to ensure that the research or project being attempted in the final year is in right track to meet its deliverables. The feasibility, viability and similar aspects will be tested while the ongoing project will still be going on to further refine the proto-type. ✓ Furthering the prototype after various iteration while implementing various feedback and insights obtained from BMC 	1 st Feb 2016-28 th Feb 2016

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		and other exercises.	
3	Patent drafting exercises (PDE) and other IP and technology management related things (phase-9)	<ul style="list-style-type: none"> ✓ By this stage the proto-type of the final year project should be in consolidation stage. Various IP related tools and technology management processes to protect IP, improve efficiency and make it a user centric innovation will be done during this phase. 	1 st march 2016-30 th March 2016
4	Benchmarking your innovation and final product design (phase-10)	<ul style="list-style-type: none"> ✓ After all the nine steps as mentioned above the teams will iterate different steps before making the final product. While developing the product the teams will implement their technical knowhow and compare the solution with near similar existing innovations by different user or market. ✓ College level IDP/UDP/Project Expo and award/appreciations to best ones in presence of industry experts and mentors 	1 st April 2016-21 st April 2016
5	Final updates in PMMS , report making, online real time Periodic Project Report (PPR) submissions	<ul style="list-style-type: none"> ✓ During this phase each team will check if they have updated all data thorough PMMS tool and finish necessary requirements 	Till 30 th April 2016
6	Working research paper/case based on	<ul style="list-style-type: none"> ✓ The working research papers could be based on actual work done by students in the project,/start-ups related to similar technology/technologies related to project/trends in the subject /innovations/Patent analysis /Any other analysis/Pedagogies related to their project or may be on actual Impact by the work. 	

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- Students will be required to write small case studies / working research papers based on the insights of their research and project work in 7th and 8th Semester and present in college/conferences/seminars. (*But it would be advisable to file a patent before it, if the research and project is unique and highly novel. In other cases they can go ahead with research publication directly.*) The working research papers could be based on actual work done by students in the project,/start-ups related to similar technology/technologies related to project/trends in the subject /innovations/Patent analysis /Any other analysis/Pedagogies related to their project or may be on actual Impact by the work.
- Each team pursuing BE has to make a working research paper in 8th Semester and present it to jury in the college and university nominated experts. For the branches which have more than 8 Credits for BE 8th Semester project each team is required to submit 2 such working research papers in 8th Semester.
- For subjects having 8 project credits in 8th Semester, the teams can present their working research paper based on their overall project work. For branches having more than 8 credits for BE 8th Semester project , each team need to submit one working paper based on efforts of 7th Semester (to be presented in early part of 8th Semester project work) and another based on 8th Semester/over all work at the end of BE 8th Semester project work.
- GTU external examiners and internal guides (industry guide can also be invited) will review the working papers during final year project examinations. Internal evaluation of such work can be done as a part of continuous evaluation of the project work.
- Every Department will be required to submit the best three papers to GTU. GTU will create a journal of UG research working papers where the best working research papers out of the papers received from the departments of all the colleges will be published.
- Student teams can also present their papers in any other conferences during the academic year. If they have been accepted in high impact conferences, weightage should be given while making project evaluation by examiners for university examinations.
- (A)Teams having filed genuine novel patent through GTU patent clinic or other ways, (B) students having published research papers in impacting journal /conferences/Seminars (C) Teams having built enterprises /start-ups based on final year project work or similar research will be given special certificates at the end of the academic year by GTU.

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Post exams in the 8th Semester

Optional participation

Category of Support	Description
IPR /Patenting/Licensing Support	<ul style="list-style-type: none">✓ Through linking of various Govt. agencies who supports such cause✓ Patent Clinic Program at GTU Innovation Council
Funding	<ul style="list-style-type: none">✓ Grant linkage✓ Crowd funding initiator (CFI)✓ Linking to Govt. and potential agencies
Design and fabrication Support	<ul style="list-style-type: none">✓ Linking to design clinic programs and design support systems for product design for selected projects
Student Start-up Support System	<ul style="list-style-type: none">✓ Linking to (student start-up support system) S4 center of GTU Innovation Council (GIC)✓ Linking to other potential incubators✓ Summer Start up leadership program✓ Entrepreneurs in residence (EIR) program

Guidelines for IDP/UDP for Final Year Projects in Govt. of India approved Technology Business Incubators will be issued separately.

N.B In most of the Braches,

- ✓ 7th Sem IDP/UDP is a 4 Credit course
- ✓ 8th Sem IDP may vary from 8-18 Credit course

N.B All the steps from phase 1 to 5 and later on from phase 7 to 10 can be iterative rather than strictly in linear fashion. Each team can run some steps in parallel and some in loop so that every insight derived from the process get suitably implemented while making the whole project.

If some projects need more than 1 year to reach to a stage of final product (ready to be used) the teams and guides can carry on the same project in subsequent years exactly from where it has been left by the previous teams. GTU believe that in little such iteration and cycles many final year projects can become a product for end users.

GTU is the 1st large state technological university which believes that by thoroughly crafted policies, processes, incentives and real-time mentoring and quality benchmarks at least 1000 B.E. student projects can become useful product every year. Some of these innovations can possibly become successful technology start-ups or get transferred to MSMEs who in turn can use them for improving their proclivity and create value.