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1. Research Oriented

Here the candidate is predisposed in learning their topic of interest at great depths. If your goal is in fact “learning more”, then your profile shall also reflect the same.

The process varies depending on the country one applies to. Select the country you’d like to know about:-

1. United States
2. Germany
3. United Kingdom

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1. United States

The master’s program in US is 3 to 4 semester program. In most of the degrees, a minimum criterion of 30 credits is required to complete your program. This can be achieved even in 3 semesters, cutting the tuition fees substantially. (More details on this in subsequent pages).

***Admission process for fall usually begins in November or December of its previous year and ends by January or Feb of that year.***

Following is an overview, listing prerequisites of the entire application process for universities in United States

1. University short listing
2. Resume building
3. GRE and IELTS
4. Statement of Purpose and Letter of Recommendations (minimum 2 maximum 3)
5. Finances (application fee, visa process expense, travel, tuition, accommodation, living expenses)

**Page 1.03.01.01.01**

1. University Short listing

(//to be written)

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1. Resume Building

This can be achieved in multiple ways and has specific timeline (mentioned in **blue)**

1. The **first step** is to figure out your area of interest. It may be a topic within the department you belong or maybe even outside. **(Begin by June of 5th Semester)**

For example, considering a student from Mechanical Engineering department, there are numerous subjects like thermodynamics, heat transfer, CFD, manufacturing, material science, automobile etc

1. You need to figure out which of these subjects interests you the most. Say, Automobile. Now even this topic has endless sub-sections like IC engine, powertrains, electric vehicles, material science, design of components, heat transfer, autonomous driving, battery etc. It is important to have an overall idea about each of these topics. **(complete by mid November)**
2. **Second step** is to choose what exactly you’d like to pursue in your master’s program. This decision can be made using a variety of parameters, each having individual priority level. **(Complete by December end)**
3. Personal Interest:- This is generally governed by the people one is surrounded with during 12th and U.G. People are usually aware about topics, only upto the extent their friends and family are aware. At this stage you can figure out what exactly your AOI (area of interest) is through atleast a month of self-introspection. (minimum a month)
4. Scope of development:- If you’re willing to spend 50 to 60 lakhs in US for M.Sc or 20-30 Lakhs in Germany/U.K, it is crucial that you land a high paying job at its end.   
   This severely depend on the subjects you choose, which aim at the particular job market in that country. The companies need to sponsor your visa, and if you know stuff which is same as their own citizen, it’s difficult to compete with them.   
   So it’s very important you enter a field which is new, developing and have a great demand to land that mouth drooling high salaried job.

For instance, people from Tech backgrounds land a job much easily due to high demand as compared to those from manufacturing backgrounds.

1. **Third Step** is to approach a professor in your institute who is active in this field. The early you approach, the better. Approach can be made as a group, however singular is preferable as it gives more freedom in pursuing different topics. **(complete by mid to end Jan of 6th Semester)**
2. 9 out of 10 times the professor won’t have much idea about the topic you chose but is only remotely related to the “subject”. That’s okay. You need not change your goals according to the availability of resources (that comes later XD). All you need to do is convince him to work under you and simply guide you in terms of set progress and connect you with appropriate people working on the same topic.
3. **Fourth step** is to begin your project. This means start talking to people. Call everyone and anyone you know or have contact of working on the same topic as yours. This will give you an idea what you’ll be getting yourself into. This will also let you know the numerous resources you should access that shall help you in developing the skills necessary for your research project. **(complete by Feb end)**
4. As you gain knowledge, usually by reading journals and books of you AOI, start making a report. List down names of important topics, made assumptions and derived conclusions. Now comes the best part. Knowing what exactly you’re “supposed” to do with this.
5. The aim, the ultimate aim, is to find a problem statement. Finding the PS is 60% of your job. Solving it is next 30% and publishing it is remaining 10. How to find problem statement
6. List down all the assumptions. Now alter one of them, and see how the results deflect. Now see how this assumption can be changed from ideal to real situation and in what way the model should be changed to give results for this real situation. This is one of the most difficult task to achieve, but can be done in steps and partial efficiency.
7. List down all the conclusions. Many of them will be subjective to specific parameters, surrounding conditions and theorems. You can simple alter these parameters and derive results for your choice of control condition. This is one of the easiest way of achieving results but also done by many. So the main thing is to dig into a topic where few people have reached so far. And dig in quick.
8. **Fifth step** is to get an idea of what is the current technological situation in this topic. How it is flawed, where it needs work and what can be done to improve it. Great! If you’re professor is experienced enough, he definitely receives invitation for National and International Conferences. These are topic oriented and their purpose is only to gather scholars and researchers under one roof, and “discuss” current technological status. That’s it. You need not achieve ground breaking results or develop models or algorithms no one has even seen or some shit. Only addressing problem statements, their assumptions and conclusions, and what can be done to solve them is more than enough. For more details on this, click here. (**complete by April end of 6th Semester)**
9. Submit your work for two to three reports in International conferences like this with DOI numbers are you’re academic profile is set for master’s application. **(If the conference is in first week of January 2021, they usually accept Abstracts and Paper by June end of 2021. After 2 to 3 months from Jan, you’ll finally get your DOI link**) Carry on with your research (if time permits), and one can also end up with a good research journal in their name, in U.G!

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1. GRE and IELTS

GRE preparation timeline is highly subjective. Still here’s a brief dissection of the preparation process. It can be cleared in 4 months or even less if studied dedicatedly for. Some people may even require 6 or more months depending on their retaining capacity.

There are ONLY two parts. English. Mathematics.

Paper Pattern:-

* Writing (1hour)
* Verbal Reasoning (30 minutes)
* Quantitative Reasoning (35 minutes)
* Verbal Reasoning (30 minutes)
* Quantitative Reasoning (35 minutes)
* Verbal/Quantitative (30/35 minutes)

Out of the last 5 sections, 4 are fixed. Remaining one can be either Quant or Verbal and this is not scored. However there is no way of knowing whether the 2nd or 3rd of 4th or 5th or 6th section is the special one. In personal experience of many candidates, it will be either extremely easy or extremely difficult, but this is not always true. So it is important to approach each section with EQUAL vigor and attention.

Select any of the two for more information

1. Verbal
2. Quantitative

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1. Verbal

It is composed of following items

1. Writing (AWA) Argument (30 minutes) Issue (30 minutes)
2. Fill in the Blanks with one blank, two blank and three blanks.
3. Reading Comprehensions (RCs) Long and Short Passages

Click below for more resources

(**Button named “Verbal”**)

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1. Quantitative

It covers questions based basic mathematical concepts we studies in 11th/12th and Math I/II/III in U.G

Click below for more resources

(**Button named “Quantitative”**)

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IELTS (//on **Page 1.03.01.01.03)**

If you crack GRE Verbal, IELTS is a two to four week preparation. Click below for more resources.

(**Button named “IELTS”**)

**Page 1.03.01.01.04**

1. Statement of Purpose and Letter of Recommendation

Click below for more resources

(**Button named “SOP”**)

(**Button named “LOR”**)

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**Page 1.03.01.01.05**

1. Finances

Click below for more resources

(Button named “**Finances**”) (//have added Google Excel in drive)

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**Page 1.03.01.02**

1. Germany

Most of the government funded univerisites have no tuition fees and students only have to bother about living expenses (ranging from 8 to 9 lakhs per year) in terms of financial obligation.

***Admission for fall begins by Feb and end by April or so. Last date of submission of application highly depends on University.***

There are two mediums of language namely **German** and **English** for master’s program in Germany. **The application requirement and the selection criteria is highly subjective to particular department in the particular university.** So it is very important to check the program requirement in the desired university.

In Germany, very few universities and programs require **GRE**. But those who do are majorly concerned with your score in **QUANTITATIVE**. If GRE is a requirement, make sure to score above 160 at the least. A score above 165 is considered good and those upto 168 and above gives 90 to 95% chance of clearing admission requirement. For Verbal, score above 150 or 155 is appreciable (but do verify once from admission requirements page)

It is recommended to learn up to A2 level before going to Germany, as it is a requirement for part time jobs offered around university. The advantages and disadvantages of both options are listed below

**English**

Here the entire course of study is in English. The level of German required for application is usually “None” (but also subjective to university, so verify once). However, once you get an admit, the visa process requires a level up to A1 or A2. This is to make sure that you communicate well during your stay.

**Advantages**

1. Minimum level of German proficiency is A1 or A2 depending on university.
2. The curriculum is easy to comprehend and less chances of failing exams.
3. Lesser expense and hassle in learning higher and tougher German level

**Disadvantages**

1. Limits the number of universities one can apply to, multifold. If there are 100 universities in Germany related to your interest, only 12 to 20 will offer courses in English, which obviously increases the competition exponentially.
2. After graduation, one may face challenges in landing job opportunities if they are not accustomed to German level up to B2 or C1. Knowing up to C1 is important for landing a good job, and many say it can’t be done without.

German

Here the program is taught in German Language. No English whatsoever is used and the application process demands certificate up to B2 or C1 level for admission.

**Advantages**

1. One can apply to all the universities there are in Germany. So 90 to 95% chances in getting into the desired university.
2. Ease in finding part time job opportunities, internships, full time job etc

**Disadvantages**

1. The course is rigorous and many students fail to comprehend the German level even after having C1 certificates.
2. Chances are there that you fail exams or even semesters due to this.

Following is an overview, listing prerequisites of the entire application process for universities in Germany

1. University short listing
2. Resume building
3. German Language
4. GRE and IELTS
5. Statement of Purpose and Letter of Recommendations (minimum 2 maximum 3)
6. Finances (application fee, visa process expense, travel, tuition, accommodation, living expenses)

**Page 1.03.01.01.01**

1. University Short listing

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**Page 1.03.01.01.02**

1. Resume Building

(//same as US)

**Page 1.03.01.01.03**

1. German Language

(//yet to be written)

**Page 1.03.01.01.04**

1. GRE and IELTS

(//same as US)

**Page 1.03.01.01.05**

1. Statement of Purpose and Letter of Recommendation

Click below for more resources

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**Page 1.03.01.01.06**

1. Finances

Click below for more resources

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1. United Kingdom

The master’s degree in UK is usually a two semester’s program. In most of the degrees, a minimum criteria of 30 credits is required to complete your program. Most of the universities **DO NOT** require GRE for application process. They are primarily concerned with CGPA, work experience and require a minimum IELTS score.

***Admission process for fall begins in January of that year and for many of them is on* Rolling *basis. You apply, they check in next four to ten days, if they like, they admit you then and there. Quite easy tbh.***

Following is an overview, listing prerequisites of the entire application process for universities in United States

1. University short listing
2. Resume building
3. GRE and IELTS
4. Statement of Purpose and Letter of Recommendations (minimum 2 maximum 3)
5. Finances (application fee, visa process expense, travel, tuition, accommodation, living expenses)

**Page 1.03.01.01.01**

1. University Short listing

(//to be written)

**Page 1.03.01.01.02**

1. Resume Building

(//same as US)

**Page 1.03.01.01.03**

1. GRE and IELTS

(//same as US)

**Page 1.03.01.01.04**

1. Statement of Purpose and Letter of Recommendation

Click below for more resources

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**Page 1.03.01.01.05**

1. Finances

Click below for more resources

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