**Most Important Topics in JEE Main & Advanced – Syllabus & Weightage**

Studying the vast topics in all 3 subjects – Physics, Chemistry and Maths is not less than a humongous task.

And to complete all this huge syllabus in 1 or 2 years, you need to study smart – concentrate on topics that are tough and have more weightage and let go of topics that are not needed at all.

1. [Important Physics topics for JEE](http://jeemainonline.in/important-topics-jee-main-advanced-syllabus-weightage/#a1)
   1. [By Syllabus Weightage](http://jeemainonline.in/important-topics-jee-main-advanced-syllabus-weightage/#a2)
   2. [By average Number of questions asked in past JEE Main / Advanced papers](http://jeemainonline.in/important-topics-jee-main-advanced-syllabus-weightage/#a3)
2. [Chemistry – Important topics for JEE Main & Advanced](http://jeemainonline.in/important-topics-jee-main-advanced-syllabus-weightage/#a4)
   1. [By Syllabus Weightage](http://jeemainonline.in/important-topics-jee-main-advanced-syllabus-weightage/#a5)
   2. [By Number of questions in past JEE papers](http://jeemainonline.in/important-topics-jee-main-advanced-syllabus-weightage/#a6)
3. [Maths – important topics](http://jeemainonline.in/important-topics-jee-main-advanced-syllabus-weightage/#a7)
   1. [By Syllabus Weightage](http://jeemainonline.in/important-topics-jee-main-advanced-syllabus-weightage/#a8)
   2. [By average Number of questions asked](http://jeemainonline.in/important-topics-jee-main-advanced-syllabus-weightage/#a9)

A huge disclaimer before we begin – JEE (Joint entrance exam) is a 50 – 50 shot at predictability. What does this mean?

Even though there are topics that have less weightage from JEE standpoint, you still need to study them as you never know – You might end up getting an entire 10% of a subject from one of the least expected sections.

So, do not waste a single moment of these 2 years of your JEE Preparation, study, solve problems, revise and most important of all – stay calm.

*“I was going through online forums and to my surprise, students are asking the same questions over and over again when they get overwhelmed with JEE Syllabus. Do you know what these questions are?”*

*“What are some of the most important and heavily weighted chapters for JEE Advanced (subject wise)”*

*“Which chapters are important for JEE mains and advance 2016”*

*“Is gravitation one of the most important chapters for JEE-Advanced?”*

*“I have only one year for my JEE Main 2016 preparation. Which topics should I focus more to get good marks in JEE Main 2016 exam?”*

Do you see what is common – everyone wants to focus just on the important topics and skip other topics. This is something you should try not to do – you [must study all the topics](http://jeemainonline.in/best-books-jee-main-advanced/) in the syllabus and lay more stress on the important topics.

Lets start by taking a look at the important topics for Physics in JEE Main & Advanced

**Important topics for Physics in JEE Main & Advanced**

The [physics portion for JEE has 20 chapters](http://jeemainonline.in/practice/physics), all in all, that have to be covered over 2 years time. Of these 20 chapters, there are 10 topics which you should spend good amount of time on:

* Dimensional Analysis – Although a very easy chapter but knowing correct units and dimensions for physical quantities can easily help you to eliminate options in multiple choice type of questions
* Gravitation & Electrostatics – These chapters are conceptually similar to each other (in terms of attractive forces concepts)
* Current Electricity & Heat Transfer – again these are conceptually similar to each other. So, when you read these chapter watch out for the similarities (which might be deceiving at times)
* Electromagnetic Induction, Waves & Sound
* Geometrical Optics , Thermodynamics
* Kinetic Theory of Gases, Rotational Dynamics

**List of important Physics Topics for JEE 2016 By Syllabus Weightage**

These 3 are the most **basic concepts** that you  ought to know. You can expect at-least 1 question from these topics:

* Units and Dimensions – *Weightage: 2%*
* Measurement of Errors – *Weightage: 2%*
* Vectors

These topics are classified as **fundamentals** in physics. You can expect 1 – 2 questions from this section on an actual JEE Paper.

* Kinematics – *Weightage: 1%*
* Newton’s Laws of Motion – *Weightage: 4%*
* Friction

These 5 topics are **important & easy** and can help your score high marks very easily in the JEE:

* Work, Energy and Power – *Weightage: 5%*
* Electrostatics – *Weightage: 6%*
* Current Electricity – *Weightage: 7%*
* Wave Optics – *Weightage: 5%*
* Ray Optics – *Weightage: 6%*

These 9 topics are **absolutely important** for JEE. You can expect twisted questions from these sections, so its very important you know your basics well and [practice a hell lot](http://jeemainonline.in/practice/physics)! You can expect *2 – 3 questions* from most of the topics listed below.

* Centre of Mass, Momentum and Collision – *Weightage: 5%*
* Rotational Dynamics – *Weightage: 4%*
* Simple Harmonic Motion – *Weightage: 5%*
* Fluid Mechanics – *Weightage: 2 – 5%.* Bernoulli’s principle can be easily twisted to ask some tricky questions.
* Wave Motion and String Waves – *Weightage: 5%*
* Magnetism – *Weightage: 6%*
* Heat & Thermodynamics – *Weightage: 6%.*This is one topic that is very important for both Physics and Chemistry preparation in JEE.
* Nuclear Physics – *Weightage: 5%*
* Modern Physics – *Weightage: 5%*

According to Pankhuri K (BIT Mesra, Architecture) concepts like SHM (Simple Harmonic Motion) were used even in her engineering studies. She also recommends watching tutorial videos for getting clearer conceptual understanding.

And finally, here is a list of the topics that you should **study atleast once** and try to create cheat-sheets or flashcards to help your revise the formulas. You can expect 3 – 4 questions mix and match from the topics below.

* Circular Motion – *Weightage: 1%*
* Gravitation – *Weightage: 1%*
* Properties of Matter, Elasticity  – *Weightage: 2%*
* Sound Waves
* Electromagnetic Induction – *Weightage: 3%*
* Alternating Current  – *Weightage: 1%*
* Heat Transfer
* Calorimetry
* Thermal Expansion
* Thermo Electricity
* Semiconductors and Electronic Devices – *Weightage: 5%*
* Communication Systems – *Weightage: 2%*

MeritNation Expert *Payal Krishnan* says that JEE Advanced has some different syllabus requirements from JEE Main and students should make sure they study all the topics and not skip things trying to do selective study.

She also adds that this will help students after they qualify JEE Main as they would not have to spend extra time for JEE Advanced preparation

**By average Number of questions asked in past JEE Main / Advanced Physics papers:**

* Current Electricity: 8 questions asked on the actual JEE paper each year on an average
* Electrostatics: 4 questions
* Optics: 3 questions
* Heat and Thermodynamics:  2 questions
* Law of Motion: 2 questions
* Waves: 2 questions
* Simple Harmonic Motion: 2 questions

You can expect some more questions (mix and match) from the other topics in the syllabus.

**Important topics for Maths in JEE Main & Advanced**

Mathematics is the foundation of complex engineering calculations. You must make your Math fundas strong if you want to pursue any engineering field out there be it Computer Science or Mechanical Engineering.

One thing you must understand early on is that Math is one subject where you can master yourself only by more and more practice. Some Physics & Chemistry problems can be solved just by knowing formulae, but [Maths – you gotta practice hard and practice smart!](http://jeemainonline.in/practice/maths)

The JEE Syllabus for Maths has close to 15 chapters which you have to cover over a period of 2 years (Class 11 and Class 12).

Unlike Physics or Chemistry, there is no such section that you could probably skip to concentrate on the important topics as in Maths, there is nothing called a very important or a less important topic. Everything is dependent on one another, so you will be better off practicing problems from all the 15 chapters in the Maths syllabus for JEE

**List of important Topics in Maths for JEE 2016 By Syllabus Weightage**

These topics have been classified as **fundamentals** in Maths. You can expect 1 – 2 questions from these topics in the Maths section on your JEE paper.

* Inverse Trigonometric Functions – *Weightage: 2%*
* Circles and Family of Circles – *Weightage: 6%*
* Sequence and Series – *Weightage: 5%*

These 4 topics are **important & easy** and you should use them to your advantage to increase your JEE Math scores. Do not do silly mistakes from questions in these sections.

* Applications of Derivative – *Weightage: 4%*
* Limit and Continuity – *Weightage: 3%*
* Matrices and Determinants – *Weightage: 4%*
* Straight Lines and Pair of Straight Lines – *Weightage: 2%*

Manoj Sharma (NIT Durgapur, Comp. Sci.) says “I used solve 3 – 4 questions daily from different topics so that I could keep myself in rhythm with all the topics before the actual JEE”.

These 7 topics are **absolutely important** for JEE Maths. As it is, you can expect questions of varied difficulty from the topics in this section. For JEE Main 2016, *2 – 3 questions* from most of the topics listed below are expected on the paper.

* 3-D Geometry  – *Weightage: 5%*Questions from this topic are generally straight forward so you can solve them easily by reading the questions properly.
* Probability and Statistics  – *Weightage: 7%.*I was weak in probability and paid the price for this. You should therefore try to familiarise yourself with [various types of questions in Probability](http://jeemainonline.in/practice/maths/statistics-probability/progress).
* Vector Algebra  – *Weightage: 5%*
* Integration  – *Weightage: 8%*(Definite + Indefinite integration)
* Complex Numbers  – *Weightage: 5%*
* Parabola  – *Weightage: 3%*
* Trigonometric Ratios  – *Weightage: 3%*

And finally, here is a list of the topics that you should **study atleast once** and try to create cheat-sheets or flashcards to help your revise the formulas. You can expect 3 – 4 questions mix and match from the topics below.

* Logarithms  – *Weightage: 1%*
* Quadratic Equations
* Theory of Equations  – *Weightage: 5%*
* Sets, Relations and Functions  – *Weightage: 4%*
* Differentiation  – *Weightage: 2%*
* Permutation and Combination  – *Weightage: 2%.*You should study this properly as concepts from this section will be needed in Probabilty
* Binomial Theorem  – *Weightage: 1%*
* Locus
* Hyperbola  – *Weightage: 2%*
* Ellipse  – *Weightage: 2%*
* Fundamentals of Mathematics
* Solution of Triangle  – *Weightage: 1%*

**By average Number of questions asked in previous year JEE Main / Advanced Maths papers:**

* Coordinate Geometry – 7 Questions were asked on an average every year in the JEE
* Continuity/ Differentiability, Limits – 3 Questions
* Complex No., Quadratic Equation – 3 Questions each
* Integral Calculus – 3 Questions
* Sequence and Series – 2 Questions
* Trigonometry – 2 Questions

**Important topics for Chemistry in JEE Main & Advanced**

There are 25 chapters (or topics) in the prescribed syllabus for Chemistry in JEE Main & Advanced. I was one of those students who was not a big fan of Chemistry but still managed to get a decent score. How?

Well, Chemistry is one of those subjects which you can study selectively and still aim for a cent percent marks. This is because most of the concepts in Chemistry revolve around bond formation, breaking and the periodic table.

So, if your fundamentals in these topics are rock-solid then your life will be so easy while you prepare for your JEE Main or advanced exam.

Here is a brief overview of the important topics in Chemistry:

* Chemical Bonding & the periodic table – This is by far the most fundamental and the most important topics in Chemistry. If you can master Chemical Bonding and the properties of periodic table elements, then Chemistry will be an easy subject for you over many years to come.
* Carbonyl Compounds & their derivatives
* Redox reactions, Mole Concept & the concept of equivalents
* Solid state, solutions & gases theory
* Thermochemistry & the Second Law of Thermodynamics (Remember, I had told you about this in the Physics section)

**List of important Topics in Chemistry for JEE 2016 By Syllabus Weightage**

Fundamental Concepts:

* IUPAC Nomenclature
* Periodic Table
* Chemical Bonding *– Weightage: 5%.*Like I mentioned earlier, Chemical Bonding and periodic table is one of the strongest pillars of your CHemistry conceptual understanding. You can easily get top ranks by making sure your concepts are crystal clear in this topic.

Important, and you can score high marks easily

* Mole Concept *– Weightage: 2%*
* Co-ordination Chemistry *– Weightage: 5%*
* Alcohol, Phenols and Ethers *– Weightage: 7%*
* p-Block elements *– Weightage: 5%*

Important, with High Weightage

* Atomic Structure *– Weightage: 5%*
* Gaseous State *– Weightage: 3%*
* Hydrocarbons *– Weightage: 2%*
* Aldehydes and Ketones *– Weightage: 5%*
* d & f Block Elements *– Weightage: 5%*
* General Organic Chemistry *– Weightage: 7%*

Other topics

* Chemical Equilibrium *– Weightage: 3%*
* Ionic Equilibrium *– Weightage: 3%*
* Thermodynamics *– Weightage: 5%*
* Hydrogen and its Compounds
* s-Block Elements *– Weightage: 5%*
* Isomerism of Organic Compounds
* Environmental Chemistry
* Solid State
* Chemical Kinetics
* Electrochemistry *– Weightage: 2%*
* Solutions
* Qualitative Salt Analysis
* Alkyl Halides and Aryl Halides
* Carboxylic Acids and their derivatives
* Amines *– Weightage: 2%*
* Biomolecules *– Weightage: 1%*
* Polymers *– Weightage: 1%*
* Metallurgy
* Surface Chemistry *– Weightage: 2%*
* Chemistry in Everyday Life *– Weightage: 2%*

I have left out the weightage values for some of the topics above as not many questions were seen from them in JEE papers in the last few years but that does not mean you skip them totally.

Schedule your time effectively so that you can cover all these topics as well.

**By average Number of questions asked in previous year JEE Main / Advanced Chemistry papers:**

* Transition Element and Coordination Chemistry – 3 questions are asked each year on an average in JEE
* Periodic Table and Representative Elements – 3 questions
* Gaseous State – 2 questions
* Atomic structure – 2 questions
* Amines – 2 questions
* Solution and Colligative Properties – 2 questions
* General Organic Chemistry – 2 questions
* Carboxylic Acids and Derivatives – 1 question
* Hydrocarbons – 1 question
* Carbohydrate, Amino Acids and Polymer – 1 question