2020-02-06

To
The Principal
DEPARTMENT OF MECHANICAL ENGINEERING, PUNJABI UNIVERSITY PATIALA
DEPARTMENT OF MECHANICAL ENGINEERING PUNJABI UNIVERSITY PATIALA-147001

Dear Sir/Madam,

Sub: Establishing SWAYAM NPTEL Local Chapter in your college

Greetings from the NPTEL office.

This is to acknowledge the receipt of your letter accepting to host SWAYAM NPTEL Local Chapter in your institution.

The **Single Point of Contact (SPOC)** nominated from your college is

    Name of SPOC: LAKSHMI SHANKAR
    Designation: ASSISTANT **PROFESSOR**
    Department:MECHANICAL
    Contact No(s): 9501875500
    E-mail id: mepupnptelspoc@gmail.com

We wish to inform you that all future correspondence related to NPTEL contents and online courses will be made to the afore-mentioned SPOC. He/she will be routinely updated with all the latest NPTEL initiatives which then may be circulated among the students.

We are also happy to share that a dedicated SWAYAM NPTEL Local Chapter web page is being created and your institution will have a separate page on it (http://nptel.ac.in/LocalChapter).

Thanking you.

Sincerely

Prof. Satyaki Roy
NPTEL Coordinator
IIT KANPUR

CREDIT TRANSFER FROM SWAYAM-NPTEL

RECOMMENDATIONS FOR UNIVERSITIES TO IMPLEMENT CREDIT TRANSFER FROM SWAYAM-NPTEL MOOCS

NPTEL

3RD FLOOR, IC&SR BUILDING, IIT MADRAS, CHENNAI – 60036

Credit transfer from SWAYAM-NPTEL - This is a Reference document. These are suggestions put forth by NPTEL. It is up to the College/University to implement these in their curriculum in ways they deem fit.

Version Details: Version 1.1
Date of Creation: 10-July-2019

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Credit transfer from SWAYAM- NPTEL courses

NPTEL is a project of 7 older IITs and IISc. Today, NPTEL is a National Coordinator for Engineering courses (UG and PG) under SWAYAM, the National MOOCs portal. The USP of NPTEL courses is that they are offered by the best faculty in the IITs/IISc/IISERs/IIITs in each subject. The content is very current as the faculty also carry out research in these areas.

NPTEL also offers courses in Humanities and Management subjects as the NPTEL partner institutes also have these departments.

NPTEL courses are for a duration of 4/8/12 weeks and each week has the following components:
- Video content of about 2.5 to 3.5 hrs per week
- Additional reading material - text transcripts, reference documents, journal papers
- An assignment that tests the learning of the student on the weekly content
- Discussion forum for the users to ask questions and clarify doubts that may arise - the communication channel between the Course instructor and the learners
- A live interaction session between the Instructor and the learners

The courses we offer are of UG/PG/PhD level and the guidelines given here are applicable to students of any degree programme.

Calculating Learner Effort in SWAYAM-NPTEL MOOCs

Learner engagement per week is estimated as follows:

Minimum effort required:

Table 1: Calculation for minimum effort from an online course

Watching videos	3 hrs for one time viewing	For better grasp and making notes, which the learner would normally do, maybe taken as 4-5 hours also.
Assignment solving time	1 hrs	If the assignment involves problems to be solved or coding work, the time taken may be 2.5 hours
Minimum Total effort per week	**4 hrs**	**Counting only the video content and assignment time.**

One credit is normally defined as the learning unit awarded for 15 hours of learning.
Based on the above, th**e minimum credits recommended is calculated as:**

Table 2: Recommendation of minimum credits for NPTEL Online Courses

	4 weeks course (hrs)	4 weeks course (credit)	8 weeks course (hrs)	8 weeks course (credit)	12 weeks course (hrs)	12 weeks course (credit)
Minimum credits recommended	16	1	32	2	48	3

Possible additional effort involved:

Table 3: Calculation of possible additional effort from the learners in an online course

Assignments	Additional 1 hr	When assignments are more complex and require more time for solving or are subjective assignments
Going through the text documents and additional reading material	1-2 hrs	Text transcripts are normally given along with other reference material.
Participation in discussion forum	1-2 hrs	Any course has normally anywhere between 5-10 posts everyday. Learners are encouraged to try and answer the queries raised by others if they know the answer and actively
Total additional engagement possible	**1 - 5 hrs per week**	**Counting other components of the MOOC course such as reading material and forum including additional time for assignment**

In view of the above table, an additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.

Hence the University taking the courses for credit transfer can decide on how they calculate learner engagement and appropriately take the courses for minimum credits recommended or minimum credits+1 as suggested.

Steps involved in taking up an NPTEL online certification course

1. **Awareness of timelines related to SWAYAM-NPTEL Courses**
   a. NPTEL offers courses in two timelines - January to May and July to November every year
   b. Course list is announced 6 months ahead of course start date
      (in the website nptel.ac.in) and enrollments are opened on the MOOCs portal swayam.gov.in
   c. Enrollment is normally opened 2 months ahead of course start date and closes on the start date of course.

2. **Requirements to enroll to SWAYAM- NPTEL courses**
   a. Mandatory requirements are an email id and a phone number for the learner. (This email id is unique to a learner and cannot be shared by multiple learners. It is the primary identifier to map assignment and exam scores of the learner).
   b. For some courses, the instructor would have given pre-requisites (especially if it is a higher semester course). The students have to ensure that they have the necessary prerequisites to understand the content and learn from the course, though it is not a mandatory requirement for enrollment.

3. **Activities to be done by students once course starts**
   a. After the start date of course, every week, videos and assignments are released on Monday morning.
   b. Learner should watch the videos, go through the reading material and complete the assignment.
   c. Each assignment will have 7-10 days of submission time. For most assignments, submission can be done any number of times till the due date. The final submission is considered for evaluation and the final score is taken as the marks for the assignment.
   d. Learners should pose their queries (both related to content and process) in the discussion forum to get clarification from each other and from the course team.

4. **Financials related to SWAYAM- NPTEL courses**
   a. Enrollment to a course and learning from it is free, as this is a project supported by MHRD, GoI.
   b. To get a certificate from SWAYAM-NPTEL, the learner has to separately register and appear in person for a proctored exam.

5. **Logistics related to certification examination**
   a. The exam registration forms are opened almost a month before the start of the course and open till 3 weeks into the course.
   b. This exam is organized and conducted by NPTEL across 150+ cities in the country through an exam vendor.
   c. The exam dates (may be 2 or 3 days with option of multiple sessions) are given 6 months ahead along with the list of courses and corresponding exam date/session mapping information.

> d. The exam carries a fee of Rs 1000/- to cover the expenses incurred in organizing this exam.
>
> e. A representative from NPTEL will be present at each of the exam centres to monitor the smooth and impartial conduct of the exam.

6. **About the SWAYAM-NPTEL Certificate**
   a. If the learner matches the pass criteria (see the next section), he/she is eligible for the e-copy of the course certificate which displays the name, roll number, photo, assignment marks, exam marks and total marks of the candidate.
   b. The e-certificate will have the signatures of the NPTEL coordinator, the Head of the Centre for Education in the corresponding institute to which the Course instructor belongs along with the logo of the institute.
   c. The e-certificate also carries the QR code, on scanning which, the original certificate hosted on NPTEL server will be accessible. This way any one presented with the e-copy can verify against the original.
   d. Hard copies of the certificates can be printed by the learner on downloading the e-copy of the certificate.

Pass criteria

The weekly assignments are all graded out of 100 marks.
For the 4/8/12 week courses, normally best 3/6/8 assignments are considered for calculating the Average assignment score (out of 100).
Final score = 25% of Average assignment score (out of 100) + 75% of proctored certification exam score (out of 100)

Learner is said to be certified in the course and he/she will be eligible for the e-certificate **IF**
Average assignment score >= 40/100
AND
Proctored certification exam score >= 40/100

For a few courses (particularly programming courses), this pattern of grading may be slightly different, though the broad guideline and split will be the same as above. These will be announced during the course run and when final scores are published.

How to choose courses for credit transfer?

NPTEL offers a variety of courses which include core, elective and multidisciplinary courses at UG and PG level every semester. The tentative list of courses for a semester is announced 6 months ahead, along with the timelines such as start dates, end dates, exam dates and enrollment dates. Goal of NPTEL is to offer all the core and elective courses in every Engineering discipline at least once a year. Courses that may be in demand might be offered twice a year, either by the same Course instructor or by different Instructor(s).

Recommendations to Academic councils while approving courses

As per the AICTE/UGC guidelines, every semester, the learner can credit courses from SWAYAM MOOCs upto 20%, which usually translates to 1 course per semester.

Option 1:

NPTEL is defining domain certifications within each discipline where a certain number of allied courses are grouped together to form a domain or area of specialization. Each domain comprises 3-4 core courses that are compulsory and 2-3 elective courses to be taken from the options given. The students need to complete these domain courses within 3 years from their first exam registration to complete a domain certification. The set of 5-7 courses taken will give the student a strong foundation and understanding of the area and might make students more job ready or better prepared to pursue higher education and research.

These domains (set of courses) can be recommended and approved by the Academic council so that students can start taking these courses from the first/second year and comfortably complete it by the time they graduate.

The domain may be entered into the college transcript as such and given additional credits. It is suggested that this not be made mandatory for all students but for only those who want specializations (like a Minor) along with their regular degree.

Option 2:

Universities such as AKTU and MAKAUT have suggested that students who accrue 20 credits from NPTEL in addition to their regular coursework will be awarded BTech with Honors degree. Students have to take the courses and write the NPTEL exams and show the certificates obtained.

Advantages are that the regular course offered can be taken from the college during the normal schedule and the 20 credits can be pursued by the more dedicated group of students in each programme. And the suggestion for the 20 credits can be completing one of the domains or defining a set of courses, which would really help the student.

Option 3:

All students should be mandated to take at least 1 or 2 courses online with NPTEL every year to be better prepared for the future so that they can cultivate the habit of self-study online. But this should be under the general/open elective category so that it does not hamper their graduation in case they do not do well in the course.

While the enrollment and learning can be with NPTEL, the final exam can be
- from NPTEL (which is again recommended so that students get a taste of the final evaluation and also get a certificate from IITs/IISc)

- or the college or university themselves can conduct the final exam and award the credits (In this case, NPTEL will not give the e-certificate and question papers will have to be handled by the University themselves based on the content and assignments which will be accessible to them).

It is again recommended that the courses taken by the students be a discipline elective not offered by the college - so that they can leverage the online course initiative completely - which is to facilitate opportunities in areas of learning for which faculty are not locally available.

Option 4:

Students can enroll in courses aligned with a course offered in-campus, and do the NPTEL assignments/exams which can count towards the internal marks for the in-campus course rather than for full credits from the NPTEL course alone. This will enable SWAYAM-NPTEL MOOCs to count towards partial credits for the course.

How SWAYAM- NPTEL MOOCs differ from other e-learning portals such as edX and Coursera

1. **Courses** offered by NPTEL are largely based on AICTE curriculum and bring together the best content for the topics mentioned. Courses under NPTEL are offered by faculty, from top ranked institutions such as the IITs/IISc/IIIT/IISER/CMI etc., who are researching in topics taught and also teach it regularly within their institutes.
2. **Instructors** being from India know the background of the students and the Indian schooling system and hence the content is taught keeping this in mind. They also teach with examples that are taken from the Indian context.
3. **FInal in-person proctored exam:** None of the other MOOC portals conduct a proctored examination where the student credentials are verified and the exam has to be attended in person, not online or from anywhere. This is the biggest USP we see of NPTEL courses vs other providers. Many give out certificates just for a price, sometimes without even a final exam.
4. **Assignments**: Courses in many MOOC portals carry the same assignments for long periods of time, even a year, and many of these can be easily manipulated to get the right answers and full marks. In NPTEL, every time the course is offered, new assignments and final question papers are prepared by the instructors with minimal repetition.
5. **Verification of e-certificate:** The e-certificate has a QR code that can be scanned and verified from the NPTEL servers.
6. **Local Chapter:** NPTEL works closely with colleges and Universities in India through its Local Chapter programme. There is an NPTEL coordinator in every local chapter college and this person has access to all information such as course wise participant enrollment, exam registration details, hall tickets, final exam marks and e-certificates - of learners who have declared as belonging to that college. These coordinators have direct access to support teams at NPTEL to get any issues resolved with respect to courses/exams. NPTEL works

with the colleges closely getting feedback and makes changes to the learning process to make the MOOCs adoption more effective, ensuring maximum benefit for the learners.

How to approve courses in Academic Council for better implementation

The following are the recommendations by NPTEL when approving courses for credit transfer:

1. The statistics of all the courses offered so far (1300 till June 2019) is available on nptel.ac.in/noc and the content (videos+assignments) is available on nptel.ac.in. It is suggested that before the Academic council identifies the courses, a few faculty members in every discipline go through this data and shortlist those which would be most suited for their students and also benefit them as per the local needs.
2. Preferable to approve generic bouquet of course titles, not mentioning the instructor and institute, which will allow for flexibility to take similar courses from any institute. This can be done at the program level such as for BE(CS), BE(EEE), etc.
    a. For instance, the recommendation "Students have to take 3 courses offered under the Electrical Engineering Discipline by NPTEL having 60% or more overlap with curriculum provided by University for the courses: DC - Electrical Machines, AC-Electrical Machines and Power Electronics" is a better one compared to "Students have to select the course 'Electrical Machines-I', 'Electrical Machines-II', and 'Power Electronic Devices' from NPTEL".
    b. It would be good to recommend discipline-based courses in this bouquet so that students are encouraged to study technical content from NPTEL.
    c. The course titles recommended may not match verbatim with the title given by the NPTEL course and the college should have some flexibility in deciding the appropriate course and mapping it to a curriculum requirement.
3. If more specifics are required, for every year of the degree programme, again a set of courses may be approved to be taken or can be more generic as any 8/12-week courses in a certain discipline. This provides the needed flexibility as NPTEL re-offers courses based on Instructor consent and how well the course did in the last offering.
    a. For instance, a recommendation by academic council/board of studies like "Students will have to take an 8-week/12-week course from Electrical Engineering discipline" is a more focused recommendation compared to "Students will have to select any 8/12-week course from NPTEL"
    b. We recommend that colleges be allowed to decide the specifics of the courses to be taken in a specific semester and intimate the same to the University.
4. Certain courses such as programming using Python/C/C++ and Data Analytics can be recommended to all engineering disciplines as these are technical skills that cut across engineering disciplines.
5. It is suggested that courses for credit transfer can be approved under all buckets - core courses, discipline elective, general elective and open elective.
6. Recommended semesters for taking NPTEL courses - first to pre-final semester.

The CBCS system is designed to give flexibility to students to learn based on their interest and to be able to take courses cutting across disciplines. Our recommendation would be to permit this cross-department course study as part of MOOCs adoption.

To be avoided - Our suggestions

1. Recommending NPTEL courses in the final semester of the Degree programme as mandatory upon which the graduation depends
    a. Preferable to not do this as NPTEL results may not come in the timeframe the University requires results to be approved for graduation.
    b. Also, if the student does not pass the course, NPTEL does not conduct supplementary exams for the courses and unless the University has a mechanism in place to handle this, it is suggested to not do so.
2. Recommending NPTEL Courses for first semester
    a. Many learners might not be familiar with the NPTEL Course schedules and the SWAYAM platform and will take some more time to get used to it.
    b. The learners also need to be familiar with University processes for Credit Transfer and the first semester requires them to go through a steep learning curve already with the regular teaching-learning load.
3. Naming specific courses with instructor and institute name for students of a semester and approving for a period of 3 years
    a. NPTEL may not be re-offering the course in upcoming semesters whereby if made mandatory, this requirement cannot be fulfilled by the student.
    b. There may not be an alternative course to this from another institute as the timelines may not match for the new instructor.
4. Ambiguous and broad recommendations
    a. For instance, the recommendation "Students can take 20% of credit every semester from NPTEL courses"
5. Not providing alternative mechanisms to complete the credit in case of non-registration or unsuccessful attempt by the student.
    a. For instance, a recommendation like "The credit will come only if a student passes the NPTEL exam in the same semester" should be avoided.

Incorporating NPTEL course marks into the University grading system

NPTEL will share
- the actual marks scored by each student in every assignment submitted,
- the marks scored in the final certification exam,
- the final consolidated score as per NPTEL calculation,
- and the e-certificate if the learner has passed (which will also have the total number of learners who have qualified in the exam).

The university/college can use this information and convert it into their system of grades as per their requirement:

1. Some colleges use the NPTEL scores as is, and the same marks are indicated on the transcripts directly.
2. Some colleges do a relative grading of their student marks with respect to the highest marks in the course and scale up correspondingly the marks of their students and this scaled up marks is what is finally entered into the degree transcript.
3. The marks given can be translated into letter grades also according to their mapping system or after scaling it up.
4. The cutoff for pass/fails in a course can be decided by the university/college if required, though the actual marks as given by NPTEL is what will always be stored and saved in the NPTEL server.

The results of NPTEL exams are typically released within one month of completion of exams, i.e. by May end for the Jan-May offering and November end for the Jul-Nov offering. However, this time may get delayed by couple of weeks for exams that have subjective evaluations specified by the instructor. The University should provide sufficient time window for its students to submit the NPTEL e-certificates for Credit Transfer (typically 2-3 months after NPTEL releases its result).

Providing allowance for NPTEL Exam fees within existing payment structure

● While the course is free to enroll, the fees for the final certification exam is Rs 1000/- per course to cover the costs of conducting the exam across India in more than 150 cities in a uniform and dependable manner with appropriate exam facilities, and invigilation.
● A common issue that arises is that students have already paid the fees for the courses of each semester to the institution.
● A suggestion is for the institute to pay for the exam completely or at least half the fee, the other half being borne by the student.

Use of SWAYAM-NPTEL courses for faculty members:

NPTEL has an MOU with AICTE to have specific courses approved as FDP and contribute towards career progression points for the faculty. The modality is for faculty to enroll to these courses, write the exams and pass and then apply for the AICTE-NPTEL FDP certificate.

We have seen a large number of faculty enroll and learn from the courses on their own and also institutes encouraging them to do so. We recommend that institutes ask faculty members to complete at least one NPTEL course every semester, within their discipline or any other discipline. This will ensure continuous learning and updating of technical concepts, get an insight into the pedagogy of teaching the course, ideas on different types of assessment of the student, etc.

NPTEL also has courses on technology in education, teaching using learner-centric methods, on IP, Patent laws, Education system, etc. These can be recommended for new faculty recruits so that they understand the system.

Local Chapters

NPTEL is partnering with more than 2700 colleges across the country today, which include engineering, arts/science, polytechnic, management, pharmacy colleges and working with them in an organized manner to take the online courses to the learners there. There are no financials involved, with the only requirement being that a person be identified, who can serve as an interface between the college and NPTEL, and who is designated as the Single Point of Contact (SPOC).

The SPOC gets direct access to
- Enrollment information course wise
- Exam registration details
- Hall tickets of learners from their college
- Assignment and exam marks of candidates from their college
- E-certificates

The above information is directly shared from NPTEL with the SPOC through their login and can be used towards crediting the courses as per the decided norms.

In addition, the SPOC can nominate a mentor faculty from the college to help students in better understanding the content. For this, both the mentor and mentee student need to be enrolled in the course and the students have to select the mentor from the online course portal. The mentor will be able to see the progress of the student real time and can blend face-to-face instruction to supplement the online learning. The SPOC and Mentors for specific courses can also facilitate the learning by arranging for computer time, internet facility and help in understanding the content better.

For better and effective implementation of credit transfer, it is advised that universities encourage affiliated colleges to become Local Chapters with NPTEL.

For queries, please write to:
bharathi@nptel.iitm.ac.in
kamala@nptel.iitm.ac.in

S. No.	Course id	Discipline	Course Name	SME Name	Institute	Duration	Type	Course Start Date	Course End Date	Exam date	FDP
1	noc20-cs16	Computer Science and Engineering	Real Time Operating System	Prof. Rajib Mall	IIT KGP	4 Weeks	Rerun	24-Feb-20	20-Mar-20	25-Apr-20	Yes
2	noc20-cs49	Computer Science and Engineering	Machine Learning, ML	Prof. Carl Gustaf Jansson	KTH, The Royal Institute of Technology	8 Weeks	Rerun	24-Feb-20	17-Apr-20	26-Apr-20	Yes
3	noc20-cs12	Computer Science and Engineering	Data Mining	Prof. Pabitra Mitra	IIT KGP	8 Weeks	Rerun	24-Feb-20	17-Apr-20	25-Apr-20	Yes
4	noc20-cs20	Computer Science and Engineering	Cloud computing	Prof. Soumya Kanti Ghosh	IIT KGP	8 Weeks	Rerun	24-Feb-20	17-Apr-20	26-Apr-20	Yes
5	noc20-cs31	Computer Science and Engineering	Privacy and Security in Online Social Media	Prof. Ponnurangam Kumaraguru	IIITD	8 Weeks	Rerun	24-Feb-20	17-Apr-20	26-Apr-20	Yes
6	noc20-cs43	Computer Science and Engineering	Multi-Core Computer Architecture - Storage and Interconnects	Prof. John Jose	IITG	8 Weeks	Rerun	24-Feb-20	17-Apr-20	25-Apr-20	Yes
7	noc20-cs01	Computer Science and Engineering	Introduction to Blockchain Technology and Applications	Prof. Sandeep Shukla	IITK	8 Weeks	New	24-Feb-20	17-Apr-20	25-Apr-20	Yes
8	noc20-cs54	Computer Science and Engineering	Design and pedagogy of the introductory programming course	Prof. Abhiram G. Ranade	IITB	4 Weeks	Rerun	24-Feb-20	20-Mar-20	26-Apr-20	Yes
9	noc20-cs55	Computer Science and Engineering	Google Cloud Computing Foundation Course	Prof. Soumya Kanti Ghosh	IIT KGP	8 weeks	New	24-Feb-20	17-Apr-20	25-Apr-20	Yes
10	noc20-ee36	Electrical and Electronics Engineering	Evolution of Air Interface towards 5G	Prof. Suvra Sekhar Das	IIT KGP	8 Weeks	Rerun	24-Feb-20	17-Apr-20	25-Apr-20	Yes
11	noc20-ee44	Electrical and Electronics Engineering	VLSI Signal Processing	Prof. Mrityunjoy Chakraborty	IIT KGP	8 Weeks	New	24-Feb-20	17-Apr-20	26-Apr-20	Yes

S. No.	Course id	Discipline	Course Name	SME Name	Institute	Duration	Type	Course Start Date	Course End Date	Exam date	FDP
12	noc20-ee40	Electrical and Electronics Engineering	Medical Image Analysis	Prof. Debdoot Sheet	IIT KGP	4 Weeks	Rerun	24-Feb-20	20-Mar-20	25-Apr-20	Yes
13	noc20-ee18	Electrical and Electronics Engineering	Electric Vehicles - Part 1	Prof. Amit Jain	IITD	4 Weeks	Rerun	24-Feb-20	20-Mar-20	26-Apr-20	Yes
14	noc20-hs34	Humanities and Social Sciences	Introduction to Modern Indian Drama	Prof. Kiran Keshavamurthy	IITG	8 Weeks	Rerun	24-Feb-20	17-Apr-20	25-Apr-20	Yes
15	noc20-hs08	Humanities and Social Sciences	Understanding Design Thinking & People Centred Design	Prof. Jhumkee Iyengar	IITK	4 Weeks	Rerun	24-Feb-20	20-Mar-20	25-Apr-20	Yes
16	noc20-hs09	Humanities and Social Sciences	Introduction to Indian Art - An appreciation	Prof. Soumik Nandi Majumdar	Visva Bharati University, Santiniketan	4 Weeks	Rerun	24-Feb-20	20-Mar-20	25-Apr-20	Yes
17	noc20-hs10	Humanities and Social Sciences	Enhancing Soft Skills and Personality	Prof. T. Ravichandran	IITK	8 Weeks	Rerun	24-Feb-20	17-Apr-20	25-Apr-20	Yes
18	noc20-hs17	Humanities and Social Sciences	Strategic Performance Management	Prof. KBL Srivastava	IIT KGP	8 Weeks	Rerun	24-Feb-20	17-Apr-20	25-Apr-20	Yes
19	noc20-hs12	Humanities and Social Sciences	Introduction to Basic Spoken Sanskrit	Prof. Anuradha Choudry	IIT KGP	4 Weeks	Rerun	24-Feb-20	20-Mar-20	26-Apr-20	Yes
20	noc20-hs33	Humanities and Social Science	Introduction to Brain & Behaviour	Prof. Ark Verma	IITK	8 Weeks	New	24-Feb-20	17-Apr-20	26-Apr-20	Yes
21	noc20-me33	Mechanical Engineering	Steam and Gas Power Systems	Prof. Ravi Kumar	IITR	8 Weeks	Rerun	24-Feb-20	17-Apr-20	26-Apr-20	Yes
22	noc20-me31	Mechanical Engineering	Convective Heat Transfer	Prof. Arup Kumar Das	IITR	4 Weeks	Rerun	24-Feb-20	20-Mar-20	26-Apr-20	Yes

S. No.	Course id	Discipline	Course Name	SME Name	Institute	Duration	Type	Course Start Date	Course End Date	Exam date	FDP
23	noc20-me16	Mechanical Engineering	Metal Cutting And Machine Tools	Prof. Asimava Roy Choudhury	IIT KGP	4 Weeks	Rerun	24-Feb-20	20-Mar-20	25-Apr-20	Yes
24	noc20-me18	Mechanical Engineering	Gear And Gear Unit Design : Theory And Practice	Prof. Rathindranath Maiti	IIT KGP	8 Weeks	Rerun	24-Feb-20	17-Apr-20	25-Apr-20	Yes
25	noc20-me27	Mechanical Engineering	Inspection and Quality Control in Manufacturing	Prof. Kaushik Pal	IITR	4 Weeks	Rerun	24-Feb-20	20-Mar-20	25-Apr-20	Yes
26	noc20-me26	Mechanical Engineering	Failure analysis and Prevention	Prof. D. K. Dwivedi	IITR	8 Weeks	Rerun	24-Feb-20	17-Apr-20	26-Apr-20	Yes
27	noc20-me13	Mechanical Engineering	Nature and Properties of Materials	Prof. Bisakh Bhattacharya	IITK	8 Weeks	Rerun	24-Feb-20	17-Apr-20	26-Apr-20	Yes
28	noc20-me05	Mechanical Engineering	Introduction to Soft Matter	Prof. Aloke Kumar	IISc	8 Weeks	New	24-Feb-20	17-Apr-20	25-Apr-20	Yes

https://swayam.gov.in/about

https://nptel.ac.in/LocalChapter/details.html