Dear Students,
You are cordially welcome to the course first lecture, which will be held on the 29th of August, 2016 at 13.15 in room C235 at Blekinge Institute of Technology, Campus Gräsvik, Karlskrona.

Please, find the schedule of the course lectures by clicking the link https://se.timeedit.net/web/bth/db1/sched1/ri160108X04Z51Q52Z36g6X50vX096Y9YY09gQY5Q5 37517918478YZ0pc5cijZQ0QZo0QQ36oQlc9XZfY0ZmQQeqfuZc7QQZbjbZoYnWmqlomQ6bZ 4ZIIZZqQoQQclcb9eQo.html

To carry through the course material, we use 42 hours.

Please, follow the link https://www.google.se/maps/dir//Blekinge+Tekniska+H%C3%B6gskola,+Valhallav%C3%A4gen,+371+41+Karlskrona/@56.1832314,15.5892315,16.44z/data=!4m15!1m6!3m5!1s0x0000000000000000:0xaf2766d9ba1a2349!2sBlekinge+Tekniska+H%C3%A4gskola!8m2!3d56.1823069!4d15.5907154!4m7!1m0!1m5!1s0x46566c5d 885672ad:0xaf2766d9ba1a2349!2m2!1d15.590715!2d56.182307
if you have some difficulties to find Campus Gräsvik.

It is too early to give you the exact examination date, but we arrange the examination at the end of October. The examination has a written form, and you should solve three of six exercises to pass it. Before the examination, I – the teacher – will plan some repetitions of the most useful problems. The list of formulas will be enclosed to the examination papers. You can use a pocket calculator during the examination.

The direct link to the course page is https://www.bth.se/eng/courses/G5555/
You can be in contact with me, when sending the e-mail to Elisabeth.Andersson@bth.se
At the first part of the course, we will study complex functions, complex integrals and, especially, residue calculus and its applications. This knowledge will be used in the theory of such transforms as Laplace-, Fourier-, and z transforms.

We recommend the following course books:
3. The lecturer’s own material, covering the contents of the course, is placed on It’s learning as “Complex Analysis and Transforms MA1434 2015” with free access.

**Planning – MA1434**

<table>
<thead>
<tr>
<th>Course Week</th>
<th>Chapter</th>
<th>Exercises</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>(S) – chapter 5.1 – 5.6 Functions of a complex variable, Cauchy-Riemann equations, complex integration</td>
<td>ch. 5: 2, 3, 6</td>
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<tr>
<td>2</td>
<td>(S) – chapter 5.7 – 5.11 Cauchy’s theorem, Cauchy Integral Formula, Taylor and Laurent series, singularities and residues</td>
<td>ch. 5: 7, 8, 9, 10 i), ii), 11 i), ii), iii), 13</td>
</tr>
<tr>
<td>3</td>
<td>(S) – chapter 5.12, 6.1 – 6.2, 6.4 Cauchy Residue Formula, Calculation of real integrals, poles on the real axis</td>
<td>ch. 5: 14, 15 ch. 6: 1, 2, 3, 4, 5, 6, 7</td>
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<tr>
<td>4</td>
<td>(S) – chapter 6.5, 7.1 – 7.4 Branch points and integrals of many-valued functions The Laplace transform, three basic theorems</td>
<td>ch. 6: 9, 10 ch. 7: 1 i), ii), 2, 3, 5, 6, 8</td>
</tr>
<tr>
<td>5</td>
<td>(S) – chapter 7.6 – 7.10 The Heaviside function, the Dirac function, transforms of derivatives, The inverse Laplace transform, solutions of ordinary differential equations by using the Laplace transform</td>
<td>ch. 7: 9, 10, 11, 12, 13</td>
</tr>
<tr>
<td>6</td>
<td>(S) – chapter 7.11 – 7.12, stencils The Volterra integral equation, the Fourier transform, Solutions of ordinary differential equations by means of the Fourier transform</td>
<td>ch. 7: 14, 15, 16, 17, 18</td>
</tr>
<tr>
<td>7</td>
<td>(M) – chapter 9 Sampled data-control system and the z-transform The inverse z-transform Solutions of difference equations</td>
<td>1, 2, 3, 4, 5, 7 (Stencil) 1, 2, 3, 4, 5, 12, 13 (Stencil) 1, 2, 3, 4 (Stencil)</td>
</tr>
</tbody>
</table>

My material, placed on It’s learning, follows and extends the contents above. The text of exercises and their solutions are also prepared on It’s learning.
Most of pages are handwritten but I hope that my handwriting is quite readable. The complementary advice and the instructions, which help you to learn, will be given during the first lecture. You can already test the link Complex Analysis and Transforms MA1434 2015 on It’s learning. The file “The order how to read the teacher’s material” helps you to organize your work with my notes.

Student account

To register, you need a student account at BTH and internet access. Information regarding your student account is sent to your e-mail address (the one you used when registering on www.universityadmissions.se). If you, for some reason, have not received the information or if you have forgotten your login details, please go to the Student Portal www.bth.se/studentportalen, “New student” choose “Student account”.

Registration

To be admitted to a course means that you have been offered a study place on the course. In order to keep your study place, you must register. You must be registered to participate in the lessons and examination. Register at www.bth.se/studentportalen, choose “Registration” and log in with your student account. The registration opens 3 weeks before the course starts. If you, for some reason, cannot carry out the registration yourself, contact Studentcentrum, studentcentrum@bth.se

The registration is also the basis for CSN’s decision regarding your eligibility to receive financial aid. You can apply for up to one academic year at a time.

Learning Management System

General information:

It'slearning is BTH’s online Learning Management System (LMS) and is used in most programmes and courses at BTH. You log in via the Student Portal with your student account around the clock. You will find your courses when you click on "My Courses" under "Learning platform" in the middle of the page (it may take up to two hours after registration before you can see your course here). In it’slearning you can find all information about the course as you have access to discussion forums, surveys, tests, assignments, lecture notes and more.
Particular information:
Without registration try to open the link “Complex Analysis and Transforms MA1434 2015 on It’s learning.

At last, I wish you a nice time during the course, plenty of success in your studies, and good examination marks.

Welcome to BTH!

With best regards

Elisabeth Rakus-Andersson – the course manager