**Программа курса**

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| Lecture 1. The mathematical modeling physical prosesses. Introduction.  |
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| Lecture 2. Mathematical modeling of atmospheric processes |
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| Lecture 3. Mathematical modeling of pollution of oceans and seas. |
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| Lecture 4. Mathematical modeling of short-term weather forecast. |
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| Lecture 5. Mathematical modeling of tropical cyclones (tornadoes). |
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| Lecture 6. Mathematical modeling of near space. |
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| Lecture 7. Mathematical modeling of the hydrodynamics of aluminum electrolyzers |
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| Lecture 8. Modeling the dynamics of ionospheric plasma |
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| Lecture 9. Mathematical modeling of internal flows. |
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| Lecture 10. Mathematical modeling of chemical processes in a confined space |
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| Lecture 11. Fractional-Step Methods for three-dimensional parabolic equation. |
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| Lecture 12. Fourier method for the three-dimensional pressure equation. |
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| Lecture 13. RANS for nonstationare physical processes |
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| Lecture 14. A Reynolds stress model for velocity and scalar fields. |
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| Lecture 15. LES for physical processes. |
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